Optical Glass Data Sheet

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无 色 光 学 玻 璃

1 光学玻璃牌号分类和命名

1.1 光学玻璃牌号分类

根据折射率 n_d 和色散系数 ν_d 在 n_d-ν_d 领域图中的位置和玻璃组成，无色光学玻璃按表 1 分为 18 类。

表 1

玻璃类别名称	代号	玻璃类别名称	代号
氟冕玻璃	FK	轻火石玻璃	QF
轻冕玻璃	QK	火石玻璃	F
冕玻璃	K	钡火石玻璃	BaF
磷冕玻璃	PK	重钡火石玻璃	ZBaF
重磷冕玻璃	ZPK	重火石玻璃	ZF
钡冕玻璃	BaK	镧火石玻璃	LaF
重冕玻璃	ZK	重镧火石玻璃	ZLaF
镧冕玻璃	LaK	钛火石玻璃	TiF
冕火石玻璃	KF	特种火石玻璃	TF

1.2 光学玻璃牌号命名

光学玻璃按其所属的玻璃类别名称的代号再加序号组成；此外，还用六位数字作代码来表征各牌号，前三位数表示玻璃折射率小数点后三位数字，后三位数字表示玻璃阿贝数，例如：H-K9L 的 n_d=1.51680、ν_d=64.20，其代码为“517642”。

1.3 无铅、砷、镉玻璃牌号命名

无铅、砷、镉以及其他放射性元素的玻璃牌号，用“环”字汉语拼音字母的声母“H”加“-”作为前缀表示，例如：H-K9L。

1.4 低软化点玻璃牌号命名

用于模压成型的低软化点无铅、砷、镉以及其它放射性元素的玻璃牌号，用“低”字汉语拼音字母的声母“D”加“-”作为前缀表示，例如 D-K9。

1.5 高透过玻璃牌号命名

高透过率和特高透过率玻璃牌号，按牌号后+字母（GT，TT）命名。用“GT”

即“高透”汉语拼音首位字母表示高透过率玻璃；用“TT”即“特”和“透”的汉语拼音首位字母表示特高透过率玻璃，例如 H-ZF52GT、H-ZF52TT。

1.6 其他命名

L:在牌号的序号后加“L”，标识该牌号与 GB/T 903 中的同一牌号折射率标准值偏差在$\pm 100\times 10^{-5}$之内，例如：H-K9L；序号前加“L”，标识该牌号与 GB/T 903 中的同一牌号折射率基本相同，色散有差异，例如 H-LaFL5，其物化性能基本不变。

A、B、C、D、E：对在牌号的序号后按英文字母顺序所加的字母标识配方组成改进的顺序次数，其主要光学性能相同或相当，物化性能有变化。

N：为了改善工艺性能，减少稀贵化工原料的使用，且玻璃性能优异，在牌号的序号后加“N”标识，其主要光学性能和物化性能均有变化，例如 H-ZLaF68N。

2 光学性能

2.1 折射率

光学玻璃按表 2 所列的 20 条光谱线给出折射率，按照 GB/T 7962.11-2010 规定的方法测量。

表 2

光谱线	元素	波长（nm）		光谱线	元素	波长（nm）
汞紫外线	Hg	302.15		氦氖激光线	He-Ne	632.8
汞紫外线	Hg	313.18		镉红线 C′	Cd	643.85
汞紫外线 i	Hg	365.01		氢红线 C	H	656.27
汞紫线 h	Hg	404.66		氦红线 r	He	706.52
汞蓝线 g	Hg	435.83		铯红外线 s	Cs	852.11
镉蓝线 F′	Cd	479.99		汞红外线 t	Hg	1013.98
氢蓝线 F	H	486.13		钕玻璃激光线		1060.0
汞绿线 e	Hg	546.07		汞红外线	Hg	1529.58
氦黄线 d	He	587.56		汞红外线	Hg	1970.09
钠黄线 D	Na	589.29		汞红外线	Hg	2325.42

2.2 色散和阿贝数

中部色散为 n_F-n_C 或 $n_{F'}$-$n_{C'}$，色散系数（即阿贝数）定义如下：

$$\nu_d = (n_d-1)/ (n_F-n_C)$$

$$或\quad \nu_e = (n_e-1)/ (n_{F'}-n_{C'})$$

2.3 色散公式

在 302.15nm～2325.42nm 光谱范围内，可用 Sellmeier 1 公式计算其它波长的折射率， Sellmeier 1 公式如下：

$$n_\lambda^2 - 1 = \frac{K_1\lambda^2}{\lambda^2 - L_1} + \frac{K_2\lambda^2}{\lambda^2 - L_2} + \frac{K_3\lambda^2}{\lambda^2 - L_3}$$

式中：K_1、L_1、K_2、L_2、K_3、L_3—计算常数；

λ—波长，μm；

n_λ—所求折射率。

对于折射率未拓展牌号，在 365.01nm～1013.98nm 光谱范围内，可用 Schott 公式计算其它波长的折射率，Schott 公式如下：

$$n_\lambda^2=A_0+A_1\lambda^2+A_2\lambda^{-2}+A_3\lambda^{-4}+A_4\lambda^{-6}+A_5\lambda^{-8}$$

式中：A_0～A_5—计算常数；

λ—波长，μm；

n_λ—所求折射率。

2.4 相对部分色散

对波长 x 和 y 的相对部分色散 $P_{x,y}$用下式表示：

$$P_{x,y}= (n_x- n_y)/ (n_F-n_C)$$

$$P'_{x,y}= (n_x- n_y)/ (n_{F'}-n_{C'})$$

数据表中按牌号给出了 $P_{s,t}$、$P_{C,s}$、$P_{d,C}$、$P_{e,d}$、$P_{g,F}$ 、$P_{i,h}$ 、$P'_{s,t}$、$P'_{C',s}$、$P'_{d,C'}$、$P'_{e,d}$、$P'_{g,F'}$ 、$P'_{i,h}$。

根据阿贝公式，对于大多数所谓“正常玻璃”而言(选 H-K6 和 F4 作为“正常玻璃”)，如下的线性关系是成立的：

$$P_{x,y} = m_{x,y}\cdot\nu_d + b_{x,y}$$

这种直线关系是以 $P_{x,y}$为纵坐标，υ_d 为横坐标来表示的，式中 $m_{x,y}$为斜率，$b_{x,y}$ 为截距。

众所周知，二级光谱的矫正，即对两个以上波长消色差，至少需要一种不符

合上式的玻璃（即其 $P_{x,y}$值偏离阿贝经验公式），其偏离值用 $\Delta P_{x,y}$表示，则每个 $P_{x,y}$-υ_d 点相对于符合上式的 “正常线”平移了 $\Delta P_{x,y}$ 量。这样，各牌号玻璃的 $\Delta P_{x,y}$ 数值可用下式求出：

$$P_{x,y} = m_{x,y}\cdot\upsilon_d + b_{x,y} + \Delta P_{x,y}$$

因此，$\Delta P_{x,y}$就定量地表示了与“正常玻璃”相比时的特殊色散的偏离特性。

数据表中按牌号给出了 $\Delta P_{C,t}$、$\Delta P_{C,s}$ 、$\Delta P_{g,F}$、$\Delta P_{F,e}$ ，它们的计算公式如下：

$$\Delta P_{C,t} = P_{C,t} - 0.5462 - 0.004713\cdot\upsilon_d$$

$$\Delta P_{C,s} = P_{C,s} - 0.4017 - 0.002365\cdot\upsilon_d$$

$$\Delta P_{F,e} = P_{F,e} - 0.4894 + 0.000541\cdot\upsilon_d$$

$$\Delta P_{g,F} = P_{g,F} - 0.6457 + 0.001703\cdot\upsilon_d$$

2.5 应力光学系数 B

玻璃中的应力会导致光产生双折射。应力光学系数表示应力与应力双折射产生的光程差之间的关系：

$$\delta = B\cdot d\cdot F$$

式中： δ—总光程差，nm；

B—应力光学系数，/Pa；

d—光在玻璃中通过的路程，cm；

F—应力，Pa。

2.6 内透射比 τ

内透射比为不包含试样表面反射损失时的透射比。按照 GB/T 7962.12-2010 规定的方法测量。数据表中列出的内部透过率值是样品厚度为 10mm 和 5mm 的数据，数据表中列出的值是多个熔炼批次的平均值。

2.7 着色度（λ_{80}/λ_5）

光学玻璃短波透射光谱特性用着色度（λ_{80}/λ_5）表示。样品厚度 10mm，λ_{80} 指玻璃透射比达到 80%时对应的波长，λ_5 指玻璃透射比达到 5%时对应的波长，以 5nm 为单位表示，例如：玻璃透射比达到 80%时对应的波长为 368nm，玻璃透射比达到 5%时对应的波长为 313nm，着色度 λ_{80}/λ_5 为 370/315，见图 1。

当 ne≥1.85 时，由于玻璃的反射损失较大，着色度用玻璃透射比达到 70%时对应的波长 λ_{70} 代替 λ_{80}。着色度的变化范围一般在±10nm 内。

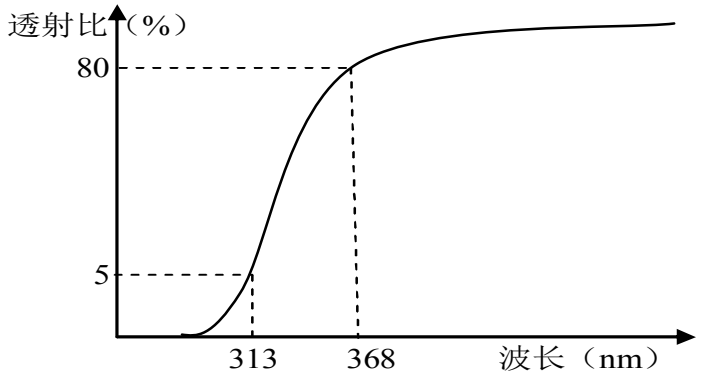

图 1

2.8 折射率温度系数(dn/dT)

光学玻璃折射率随温度变化而变化，在真空中的折射率温度系数称为绝对折射率温度系数，在空气等介质中的折射率温度系数称为相对折射率温度系数。目录中列出了谱线 t（1013.98nm）、 C’（643.85nm）、d（587.56nm）、e（546.07nm）、F’(479.99nm)及 g（435.83nm）6 条谱线的相对折射率温度系数$(dn/dT)_{rel}$。

相对折射率温度系数用下式计算：

$$\left(\frac{dn}{dT}\right)_{rel} = [(\frac{dn}{dT})_{abs} - n_{rel}(\frac{dn_{air}}{dT})]/n_{air}$$

式中：n_{rel}—被测样品的相对折射率；

dn_{air}/dT—空气的折射率温度系数。

空气折射率温度系数见表3。

在波长为 435.83~1013.98nm、温度为-60~140℃的范围内，可根据下式计算不同温度和波长所对应的绝对折射率温度系数$(dn/dT)_{abs}$：

$$(\frac{dn}{dT})_{abs} = \frac{n^2_{(\lambda,T_0)} - 1}{2n_{(\lambda,T_0)}}\left(D_0 + 2D_1 \cdot \Delta T + 3D_2 \cdot \Delta T^2 + \frac{E_0 + 2E_1 \cdot \Delta T}{\lambda^2 - \lambda^2_{TK}}\right)$$

式中：$(dn/dT)_{abs}$—绝对折射率温度系数；

D_0、D_1、D_2、E_0、E_1、λ_{TK}—与玻璃牌号相关的计算常数；

λ—波长，μm；

T_0—基准温度，20℃；

T—温度，℃；

ΔT—与 T_0 之间的温度差；

$n_{(\lambda,T_0)}$—波长为 λ、温度为 T_0 时的折射率。

表3

温度范围（℃）	dn_{air}/dT（10^{-6}/℃）					
	t	C’	d	e	F’	g
-60～-40	-1.59	-1.61	-1.61	-1.62	-1.63	-1.63
-40～-20	-1.34	-1.35	-1.36	-1.36	-1.37	-1.37
-20～0	-1.15	-1.16	-1.16	-1.16	-1.17	-1.17
0～20	-0.99	-1.00	-1.00	-1.00	-1.01	-1.01
20～40	-0.86	-0.87	-0.87	-0.87	-0.88	-0.88
40～60	-0.76	-0.77	-0.77	-0.77	-0.77	-0.78
60～80	-0.67	-0.68	-0.68	-0.68	-0.69	-0.69
80～100	-0.60	-0.61	-0.61	-0.61	-0.61	-0.62
100～120	-0.54	-0.54	-0.55	-0.55	-0.55	-0.55
120～140	-0.49	-0.49	-0.49	-0.49	-0.50	-0.50

3 化学性能

光学玻璃元件在制造和使用过程中，其抛光表面抵抗各种侵蚀介质作用的能力称为光学玻璃的化学稳定性。

3.1 耐潮稳定性 RC（S）（表面法）

按照GB/T 7962.15-2010的测试方法，根据与标准样品H（BaK7）和H（ZK9）浊度值的比较，将耐潮稳定性分为4类，见表4。

表 4

类别（RC）	浊度值的比较	说　　明
1	H≤H（BaK7）	在温度 50℃，相对湿度 85%的条件下恒温恒湿 20h，表面不出现水解斑点
2	H≤H（BaK7）	在温度 50℃，相对湿度 85%的条件下恒温恒湿 20h，表面出现水解斑点
3	H(ZK9)≥H > H(BaK7)	浊度值小于或等于H（ZK9）而大于H（BaK7）的玻璃，耐潮稳定性为 3 类
4	H > H(ZK9)	浊度值大于 H（ZK9）的玻璃，耐潮稳定性为 4 类

3.2 耐酸稳定性 RA（S）（表面法）

按照GB/T 7962.14-2010的测试方法，根据对酸溶液的稳定性，分为6类，见表5。

表 5

类别（RA）	测定介质	侵蚀时间 t	说　　明
1	PH=2.9 的醋酸	t≥5h	未出现紫蓝干涉色、未呈现杂色或脱落
2	PH=2.9 的醋酸	30min≤t < 5h	出现蓝紫干涉色，但未呈现杂色或脱落
3	PH=4.6 的醋酸盐	t≥30min	出现蓝紫干涉色或呈现杂色，但未出现脱落
4	PH=4.6 的醋酸盐	5min≤t < 30min	出现蓝紫干涉色或呈现杂色，但未出现脱落
5	PH=6.0 的蒸馏水	t > 3h	出现蓝紫干涉色或呈现杂色，但未出现脱落
6	PH=6.0 的蒸馏水	t≤3h	出现蓝紫干涉色或呈现杂色或出现脱落

3.3 耐水作用稳定性 D_W（粉末法）

按 GB/T 17129 的测试方法，根据下式计算：

$$Dw = \frac{B - C}{B - A} \times 100\%$$

式中：D_W—玻璃浸出百分数，%；

B—过滤器和试样的质量，g；

C—过滤器和侵蚀后试样的质量，g；

A—过滤器质量，g。

由计算出的浸出百分数，将光学玻璃耐水作用稳定性 Dw 分为 6 类，见表 6：

表 6

类别	1	2	3	4	5	6
浸出百分数（D_W）	＜0.04	0.04～0.10	0.10～0.25	0.25～0.60	0.60～1.10	＞1.10

3.4 耐酸作用稳定性 D_A（粉末法）

按 GB/T 17129 的测试方法，根据下式计算：

$$D_A = \frac{B-C}{B-A} \times 100\%$$

式中：D_A —玻璃浸出百分数，%；

B—过滤器和试样的质量，g；

C—过滤器和侵蚀后试样的质量，g；

A—过滤器质量，g。

由计算出的浸出百分数，将光学玻璃耐酸作用稳定性 D_A 分为 6 类，见表 7：

表 7

类别	1	2	3	4	5	6
浸出百分数（D_A）	＜0.20	0.20～0.35	0.35～0.65	0.65～1.20	1.20～2.20	＞2.20

3.5 耐候性（CR）

将试样放置在相对湿度为90％的饱和水蒸气环境的测试箱内，在40℃～50℃每隔1h交替循环，循环15个周期。根据试样放置前后的浊度变化量来划分耐候性类别，表8为耐候性分类情况。

表 8

类别	1	2	3	4		
				a	b	c
浊度增加量 ΔH（%）	＜0.3	0.3~1.0	1.0~2.0	2.0~4.0	4.0~6.0	≥6.0

4 热学性能

4.1 热膨胀系数 α

光学玻璃热膨胀系数是指一定温度范围内温度升高 1℃时，玻璃单位长度的伸长量。按 GB/T 7962.16-2010 规定的方法测量。数据表中给出了-30℃～＋70℃和＋100℃～＋300℃的平均热膨胀系数。

4.2 转变温度 T_g

光学玻璃在某一温度区间会逐渐由固态变成可塑态，其转变温度 T_g 是指玻璃试样从室温升温至驰垂温度 T_s，其低温区域和高温区域直线部分延长线相交的交点所对应的温度，见图 2。按 GB/T 7962.16-2010 规定的方法进行测量。

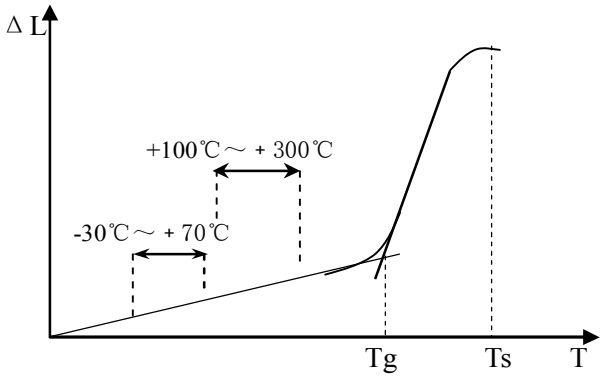

图 2

4.3 驰垂温度 T_s

如图 2 所示，驰垂温度 T_s 是指玻璃试样在升温过程中停止膨胀时的温度。按 GB/T 7962.16-2010 规定的方法进行测量。

4.4 应变点 $T_{10}^{14.5}$

应变点是玻璃粘度为 $10^{14.5}$dpa·s（或 $10^{13.5}$pa·s）时的温度，即在几个小时之后才能消除玻璃内应力的温度，也称为玻璃退火下限温度。

4.5 退火点 T_{10}^{13}

退火点是玻璃粘度为 10^{13}dpa·s（或 10^{12}pa·s）时的温度，几分钟内即可消除玻璃内应力的温度，也称为玻璃退火上限温度。

4.6 软化点 $T_{10}^{7.6}$

软化点是玻璃粘度为 $10^{7.6}$dpa·s（或 $10^{6.6}$pa·s）时的温度。表示玻璃明显软化，

并在其自重下变形时的温度。

4.7 热传导系数 λ

热传导系数等于热流密度除以温度梯度所获得的商，即单位时间内通过单位面积的热量除以单位距离的温差，用 w/（m·k）为单位表示。

注：1 w/（m·k）=8.6000×10^{-1}kcal/（h·m·℃）=2.38889×10^{-3}cal/（s·cm·℃）

5 机械性能

5.1 杨氏模量 E、剪切模量 G 和泊松比 μ

光学玻璃杨氏模量、剪切模量和泊松比按下列公式计算：

$$E = \frac{4G^2 - 3GV_T^2\rho}{G - V_T^2\rho}$$

$$G = Vs^2\rho$$

$$\mu = \frac{E}{2G} - 1$$

式中：E—杨氏模量，Pa；

G—剪切模量，Pa；

μ—泊松比；

V_T—纵波速度，m/s；

V_s—横波速度，m/s；

ρ—玻璃密度，g/cm^3。

5.2 Knoop 硬度 H_K

Knoop 硬度按 GB/T 7962.18-2010 规定的测试方法测量。该方法采用对称棱角为 172°30’和 130°的四角锥金刚石压头，给其施加一定负荷垂直压在试样上，保持一定时间后，撤去负荷，用显微镜观察并测量试样上压痕对角线的长度，按下列公式计算 Knoop 硬度：

$$H_k = 1.4229\frac{F}{d^2}$$

式中： F—负荷，N；

d—压痕长对角线的长度，mm；

H_K—Knoop 硬度，10^7Pa。

5.3 磨耗度 F_A

磨耗度是指在完全相同的条件下，试样的磨损量与标准试样（K9 玻璃）的磨损量（体积）的比值乘以 100 后所得的数值，用公式表示如下：

$$F_A = \frac{V}{V_0} \times 100 = \frac{w/\rho}{w_0/\rho_0} \times 100$$

式中：V—被测样品体积磨耗量；

V_0—标准样品体积磨耗量；

W—被测样品质量磨耗量；

W_o—标准样品质量磨耗量；

ρ—被测样品密度；

ρ_0—标准样品密度。

5.4 密度 ρ

光学玻璃的密度是指温度为 20℃时单位体积的质量。光学玻璃的密度按 GB/T 7962.20-2010 规定的方法进行测量，单位以 g/cm^3 表示。

6 玻璃质量指标

6.1 折射率 n_d 和阿贝数 ν_d 与标准值的允许偏差

折射率 n_d 和阿贝数 ν_d 的一般允许公差为：

折射率 n_d：$\pm 30\times 10^{-5}$

阿贝数 ν_d：±0.5%

客户有需求时，n_d 和 ν_d 的允许公差可控制为$\pm 20\times 10^{-5}$ 和±0.3%；H-K9L、H-K9LGT、H-BaK7、H-BaK7GT 等精退火产品，n_d 和 ν_d 的允许公差可控制为$\pm 10\times 10^{-5}$ 和±0.2%。客户有特殊要求时，请与销售人员联系。

折射率和阿贝数按 GB/T 7962.1–2010 规定的测试方法进行测量，折射率测量精度为$\pm 3\times 10^{-5}$，中部色散测量精度为$\pm 2\times 10^{-5}$。

6.2 光学均匀性

光学均匀性以同一块玻璃各部位间的折射率微差最大值 Δn_{max} 表示，按 GB/T7962.2-2010 规定的测试方法进行测量，分为 6 类，见表 9。

表 9

类别	折射率最大微差 Δn_{max}
H_{00}	0.5×10^{-6}
H_0	1×10^{-6}
H_1	2×10^{-6}
H_2	5×10^{-6}
H_3	10×10^{-6}
H_4	20×10^{-6}

6.3 应力双折射

6.3.1 中部应力

玻璃毛坯应力双折射以最长边中部单位长度上的光程差 δ 表示，按 GB/T 7962.5-2010 规定的方法进行测量，分为 4 类，见表 10。

表 10

类别	玻璃中部光程差 δ（nm/cm）
1	2
1a	4
2	6
3	10

6.3.2 边缘应力

玻璃毛坯应力双折射以其距边缘 5%直径或边长处单位厚度上的最大光程差 δ_{max} 表示，按 GB/T 7962.5-2010 规定的测试方法进行测量，分为 4 类，见表 11。

表 11

类别	玻璃边缘光程差 δ_{max}（nm/cm）
S_1	2
S_2	5
S_3	10
S_4	20

6.3.3 粗退火玻璃应力双折射要求

厚度小于或等于20mm的粗退火玻璃，边缘应力双折射小于等于100nm/cm，厚度大于 20mm 的粗退火玻璃，边缘应力双折射小于等于 80nm/cm。

6.4 条纹度

条纹用点光源和透镜组成的条纹仪，从最容易看见条纹的方向上，与标准试样作比较检查，分为 4 级，见表 12。

表 12

级别	条纹程度
A	在规定检测条件下无肉眼可见的条纹
B	在规定检测条件下有细而分散的条纹
C	在规定检测条件下有轻微的平行条纹
D	在规定检测条件下有粗略的平行条纹

6.5 夹杂物

光学玻璃夹杂物质量按 GB/T 7962.8-2010 规定的测试方法进行测量，玻璃中允许夹杂物含量等级是由 100cm^3 玻璃中所含夹杂物（直径 φ≥0.03mm）的总截面积来确定，分为 5 级，见表 13。扁夹杂物取最长轴和最短轴的算术平均值为直径计算截面积。

表 13

级别	每 100cm^3 玻璃中所含直径 φ≥0.03mm 夹杂物的总截面积 S（mm^2/100cm^3）
A_{00}	S≤0.03
A_0	0.03<S≤0.10
A	0.10<S≤0.25
B	0.25<S≤0.50
C	0.50<S≤1.0

6.6 光吸收系数

光吸收系数用球形光度计按 GB/T 7962.9-2010 规定的测试方法进行测量。光吸收系数等于白光通过玻璃中每厘米路程的内透过率的自然对数的负值。分为 8

类，见表 14。

表 14

类别	光吸收系数最大值		类别	光吸收系数最大值
00	0.001		3	0.008
0	0.002		4	0.010
1	0.004		5	0.015
2	0.006		6	0.030

7 耐 X 射线玻璃及耐 X 射线性能

耐 X 射线光学玻璃的耐 X 射线性能，序号为 500~599 用总剂量为 2.58×10^{1}C/kg（或 1×10^{5}R）的 X 射线辐照玻璃后，每厘米厚度上的光密度增量用 ΔD_1 来表示，应符合表 15 的规定。

表 15

牌号	光密度增量 ΔD_1	牌号	光密度增量 ΔD_1	牌号	光密度增量 ΔD_1
K502	≤0.035	ZK507	≤0.025	BaF503	≤0.045
K505	≤0.030	ZK508	≤0.020	BaF504	≤0.045
K507	≤0.035	ZK509	≤0.035	BaF506	≤0.065
K509	≤0.030	ZK510	≤0.025	BaF508	≤0.055
K510	≤0.060	ZK511	≤0.065	ZBaF501	≤0.055
BaK501	≤0.025	KF501	≤0.065	ZBaF502	≤0.090
BaK502	≤0.020	KF502	≤0.110	ZBaF503	≤0.055
BaK503	≤0.025	QF502	≤0.110	ZBaF504	≤0.200
BaK506	≤0.025	QF503	≤0.110	ZBaF505	≤0.200
BaK507	≤0.040	F502	≤0.080	ZF501	≤0.080
BaK508	≤0.020	F503	≤0.065	ZF502	≤0.060
ZK501	≤0.030	F504	≤0.060	ZF503	≤0.080
ZK503	≤0.025	F505	≤0.050	ZF504	≤0.120
ZK505	≤0.025	F506	≤0.050	ZF505	≤0.120
ZK506	≤0.020	BaF502	≤0.060	ZF506	≤0.080

8 玻璃供货形式

8.1 光学玻璃块料

两大面细磨，其余四面粗磨，边、角稍倒棱，经精退火。

8.2 光学玻璃条料

两个端面为炸切面，其余四面为自然成型面，经粗退火或精退火。

8.3 光学玻璃压型坯料

8.3.1 光学玻璃一次压型坯料

一次压型坯料是通过熔炼直接滴料压制成型的坯料，经精退火。

8.3.2 光学玻璃二次压型坯料

二次压型坯料是再次加工热压成型，经精退火，规格尺寸公差见表 16。

表 16

型料的外径 φ（mm）	DP 产品		RP 产品	
	外径公差（mm）	厚度公差（mm）	外径公差（mm）	厚度公差（mm）
φ＜15	±0.10	±0.20	±0.10	±0.50
15≤φ＜29	±0.10	±0.20	±0.15	±0.35
29≤φ＜40	±0.15	±0.20	±0.20	±0.30
40≤φ＜60	±0.20	±0.20	±0.30	±0.30
60≤φ＜90	±0.30	±0.40	±0.35	±0.35
90≤φ＜150	±0.40	±0.40	±0.40	±0.40
φ≥150	±0.50	±0.50	±0.50	±0.50

8.4 光学玻璃果形料（或称 Gobs 料）

果形料（或称 Gobs 料）是一种截面积几乎为圆形的毛坯，重量或体积按客户需要确定，未经精退火。

8.5 其他

不同熔炼工艺对光学玻璃红外透过率影响较大，如果对红外透过率有特殊要求，请预先与销售人员联系。

客户提出的特殊要求或大规格玻璃，也请预先与销售人员联系。

更多数据请登录公司网站 www.cdgmgd.com 或微信公众号查询。

9 相互检索目录

光学玻璃相互检索表中的对应牌号仅指玻璃代码相同或相近，而玻璃组分 CDGM、HOYA、OHARA 和 SCHOTT 等均是不同的。

Optical Glass

1 Classification and Designation of Optical Glass Types

1.1 Classification of Optical Glass Types

Optical glass can be classified into 18 groups according to its different refractive index (n_d) and dispersion coefficient (υ_d) positions in the n_d-υ_d diagram and their chemical composition (Table 1).

Table 1

Group	CDGM	Group	CDGM
Fluorine Crown	FK	Light Flint	QF
Light Crown	QK	Flint	F
Crown	K	Barium Flint	BaF
Phosphate Crown	PK	Dense Barium Flint	ZBaF
Dense Phosphate Crown	ZPK	Dense Flint	ZF
Barium Crown	BaK	Lanthanum Flint	LaF
Dense Crown	ZK	Dense Lanthanum Flint	ZLaF
Lanthanum Crown	LaK	Titanium Flint	TiF
Crown Flint	KF	Special Flint	TF

1.2 Designation of Optical Glass Types

Each optical glass type within a group is designated by an abbreviated group symbol and a number. In addition to our glass type designation, a six-digital code is listed in this catalogue. The first three digitals indicate the three numbers after the decimal point of the glass refractive index and the last three digitals indicate the Abbe-number, for example H-K9L n_d =1.51680, υ_d =64.20, its code comes to be "517642".

1.3 Designation of the Optical Glass without Lead, Arsenic and Cadmium

The optical glass without lead, arsenic and cadmium and other radioactive elements is expressed by a prefix "H-" indicating its environment-friendly characteristics, for example: H-K9L.

1.4 Designation of Low Softening Point Glass Types

Low softening point glass type without lead, arsenic and cadmium and other radioactive elements is prefixed by “D-”, for example, D-K9.

1.5 Designation of High Transmittance Glass Types

High transmittance and ultra-high transmittance glass are prefixed with “GT” and “TT” respectively, which refer to the first letter in Pinyin “Gao Tou” and “Te Tou”. For example, H-ZF52GT、H-ZF52TT.

1.6 Other Designation

L: used after digit as suffix means the refractive index difference $\leq \pm 100 \times 10^{-5}$, as compared with the standard refractive index of the same type in GB/T 903, for example H-K9L ; L before digit means the same refractive index as the same type in GB/T 903, but with different dispersion and basically the same physical-chemical properties, for example H-LaFL5.

A、B、C、D、E：letters after digit indicate the composition improvement times, with basically the same optical property and changes for physical-chemical properties.

N: processing improvement for rare chemical material reduction and better glass property, results in changes of both optical and physical-chemical properties, for example H-ZLaF68N.

2 Optical Properties

2.1 Refractive Index

The 5-decimal refractive indices are given according to the following 20 spectral lines in Table 2. The precise measurement methods of those spectral lines are specified in GB/T 7962.11-2010.

Table 2

Spectral lines	Elements	Wavelength (nm)	Spectral lines	Elements	Wavelength (nm)
Ultraviolet mercury line	Hg	302.15	Helium-neon gas laser	He-Ne	632.80
Ultraviolet mercury line	Hg	313.18	Red cadmium line C’	Cd	643.85
Ultraviolet mercury line i	Hg	365.01	Red hydrogen line C	H	656.27
Violet mercury line h	Hg	404.66	Red helium line r	He	706.52
Blue mercury line g	Hg	435.83	Infrared cesium line s	Cs	852.11
Blue cadmium line F’	Cd	479.99	Infrared mercury line t	Hg	1013.98
Blue hydrogen line F	H	486.13	Infrared mercury line	Hg	1060.0
Green mercury line e	Hg	546.07	Infrared mercury line	Hg	1529.58
Yellow helium line d	He	587.56	Infrared mercury line	Hg	1970.09
Yellow sodium line D	Na	589.29	Infrared mercury line	Hg	2325.42

2.2 Dispersion and Abbe Number

The central dispersion is expressed by n_F-n_C or $n_{F'}$-$n_{C'}$, while the dispersion coefficient (also “Abbe number”) is defined:

$$\upsilon_d=(n_d -1)/(n_F-n_C)$$

$$\text{or } \upsilon_e=(n_e -1)/(n_{F'}-n_{C'})$$

2.3 Dispersion Formula

In the spectral range of 302.15nm～2325.42nm, the refractive index at other wavelength can be calculated according to Sellmeier 1 formula:

$$n_\lambda^2 - 1 = \frac{K_1\lambda^2}{\lambda^2 - L_1} + \frac{K_2\lambda^2}{\lambda^2 - L_2} + \frac{K_3\lambda^2}{\lambda^2 - L_3}$$

Where: K_1、L_1、K_2、L_2、K_3、L_3—calculating constants (change with different glass types, and are listed in the data sheets);

λ—wave length，μm;

n—the calculated refractive index.

For glass with unexpanded refractive index, within spectrum range 365.01nm~1013.98nm, its refractive index at other wavelength can be calculated according to Schott formula:

$$n^2 = A_0 + A_1\lambda^2 + A_2\lambda^{-2} + A_3\lambda^{-4} + A_4\lambda^{-6} + A_5\lambda^{-8}$$

Where: A_0~A_5—calculating constants (change with different glass types, and are listed in the data sheets);

λ—wave length，μm;

n—the calculated refractive index.

2.4 Relative Partial Dispersion

At the wavelength of x and y, the relative partial dispersion $P_{x,y}$ can be expressed by the following formula:

$$P_{x,y} = (n_x - n_y)/(n_F - n_C)$$

$$P'_{x,y} = (n_x - n_y)/(n_{F'} - n_{C'})$$

The value of $P_{s,t}$, $P_{C,s}$, $P_{d,C}$, $P_{e,d}$, $P_{g,F}$, $P'_{s,t}$, $P'_{C',s}$, $P'_{d,C'}$, $P'_{e,d}$, $P'_{g,F'}$ for each glass type are listed in the data sheets.

According to the Abbe's formula, the following linear relationship is correct for most "normal glass":

$$P_{x,y} = m_{x,y} \cdot \upsilon_d + b_{x,y}$$

The linear correspondence can be plotted along a straight line, in which $P_{x,y}$ is the y-axis ,υ_d is the x-axis, $m_{x,y}$ is the slope and $b_{x,y}$ is the intercept distance. It is all known that the rectification of the secondary–spectrum, which means to eliminate the chromatic aberration for more than 2 wavelengths, it needs at least one type of glass which is not suitable for the Abbe's formula (that is to say , $P_{x,y}$ value deviates from the result of Abbe's formula). The deviated value is indicated as $\Delta P_{x,y}$ ---that is, each $P_{x,y}$-υ_d point moves from "normal lines" by $\Delta P_{x,y}$. So $\Delta P_{x,y}$ for each glass type can be calculated according to the following formula:

$$P_{x,y} = m_{x,y} \cdot \upsilon_d + b_{x,y} + \Delta P_{x,y}$$

Therefore, the $\Delta P_{x,y}$ can quantitatively express the deviation property of the special chromatic dispersion when compared with the "normal glass ".

For example, we choose H-K6 and F4 as the "normal glass", and its relative partial dispersion and Abbe -number is suitable for Abbe's formula.

$\Delta P_{C,t}$、$\Delta P_{C,s}$ 、$\Delta P_{F,e}$、$\Delta P_{g,F}$ are given in the data sheet , their calculating formula as follows:

$$\Delta P_{C,t} = P_{C,t} - 0.5462 - 0.004713 \cdot \upsilon_d$$

$$\Delta P_{C,s} = P_{C,s} - 0.4017 - 0.002365 \cdot \upsilon_d$$

$$\Delta P_{F,e} = P_{F,e} -0.4894 + 0.000541 \cdot \upsilon_d$$

$$\Delta P_{g,F} = P_{g,F} -0.6457 + 0.001703 \cdot \upsilon_d$$

2.5 Stress-Optical Coefficient B

The birefringence may result from the stress in optical glass. Stress-optical coefficient expresses the relationship between the effective stress and the optical path difference caused by stress birefringence:

$$\delta = B \cdot d \cdot F$$

Where: δ—the total optical path difference, nm;

B—stress-optical coefficient, / Pa;

d—the distance of light through the glass, cm;

F—stress, Pa.

2.6 Internal Transmittance τ

Internal transmittance is the transmittance exclusive of surface reflection losses at both sides. The measurement method is specified in GB/T 7962.12-2010. The data sheets show the average internal transmittances for 10mm and 5mm glass samples from different melting batches.

2.7 Color Code (λ_{80}/λ_5)

Performance of optical glass transmittance can also be indicated by color code (λ_{80}/λ_5). It is assumed that the glass sample is 10mm thickness, λ_{80} and λ_5 means respectively the relative wavelength when the glass transmittance reaches 80% and 5%. The values are rounded off to 5nm and denoted by eliminating the first digit. For example, if at the wavelength of 368 nm and 313nm, the transmittance is respectively 80% and 5%, then the color code λ_{80}/λ_5 is indicated as 370/315.See details in Figure 1.

When $n_e \geq 1.85$, because of large reflection loss in glass, its color code uses λ_{70} instead of λ_{80}.

The variance range of color code is usually within ±10nm.

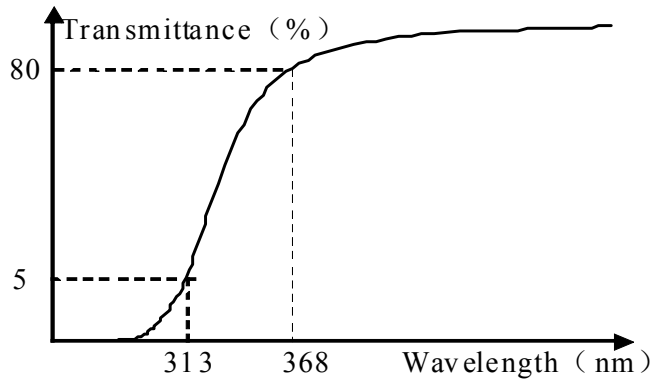

Fig 1

2.8 Temperature Coefficient of Refractive Index (dn/dT)

The refractive index of optical glass changes with temperature. Here TCRI refers to temperature coefficient of refractive index.

Absolute temperature coefficient of refractive index means TCRI in the vacuum; Relative temperature coefficient of refractive index means TCRI in air or other media.

The data sheet also lists the relative temperature coefficient of refractive index $(dn/dT)_{rel}$ for 6 different spectral lines such as t(1013.98nm)、 C' (643.85nm)、d(587.56nm)、e(546.07nm)、F'(479.99nm) and g(435.83nm).

Relative temperature coefficient of refractive index can be calculated according to the following equation:

$$\left(\frac{dn}{dT}\right)_{rel} = [(\frac{dn}{dT})_{abs} - n_{rel}(\frac{dn_{air}}{dT})]/n_{air}$$

Where: n_{rel}—relative refractive index of sample;

dn_{air}/dT— temperature coefficient of refractive index of air;

Absolute temperature coefficient of refractive index at wavelength 435.83~1013.98nm under temperature -60~140℃can be calculated according to the following equation:

$$(\frac{dn}{dT})_{abs} = \frac{n^2_{(\lambda,T_0)} - 1}{2n_{(\lambda,T_0)}}\left(D_0 + 2D_1 \cdot \Delta T + 3D_2 \cdot \Delta T^2 + \frac{E_0 + 2E_1 \cdot \Delta T}{\lambda^2 - \lambda^2_{TK}}\right)$$

Where: $(dn/dT)_{abs}$—absolute temperature coefficient of refractive index;

D_0、D_1、D_2、E_0、E_1、λ_{TK}—calculating constants with glass types;

λ—wavelength，μm;

T_0—basic temperature，20℃;

T—temperature，℃;

ΔT—difference between T_0;

$n_{(\lambda,T_0)}$—refractive index under wavelength λ and temperatureT_0.

Table 3 indicates the temperature coefficient of refractive index of air.

Table 3

Temperature range（℃）	dn_{air}/dT（10^{-6}/℃）					
	t	C'	d	e	F'	g
-60～-40	-1.59	-1.61	-1.61	-1.62	-1.63	-1.63
-40～-20	-1.34	-1.35	-1.36	-1.36	-1.37	-1.37
-20～0	-1.15	-1.16	-1.16	-1.16	-1.17	-1.17
0～20	-0.99	-1.00	-1.00	-1.00	-1.01	-1.01
20～40	-0.86	-0.87	-0.87	-0.87	-0.88	-0.88
40～60	-0.76	-0.77	-0.77	-0.77	-0.77	-0.78
60～80	-0.67	-0.68	-0.68	-0.68	-0.69	-0.69
80～100	-0.60	-0.61	-0.61	-0.61	-0.61	-0.62
100～120	-0.54	-0.54	-0.55	-0.55	-0.55	-0.55
120～140	-0.49	-0.49	-0.49	-0.49	-0.50	-0.50

3 Chemical Properties

The chemical stability is the ability of polished surface to resist erosive substance of sorts during the glass component being processed and afterwards being applied.

3.1 Resistance to Humidity RC(S) (Surface Method)

According to testing method of GB/T 7962.15-2010, the comparison of haze with H（BaK7）、H（ZK9）, the resistance of the polished glass surface to humidity, RC(S) is classified into 4 grades (Table 4):

Table 4

Grade（RC）	Haze Comparison	note
1	H≤H（BaK7）	At 50℃ and the relative humidity of 85%, the hydrolysis “spot” is not formed on the polished glass surface till 20 hours later
2	H≤H（BaK7）	At 50℃ and the relative humidity of 85%, the hydrolysis “spot” is formed on the polished glass surface till 20 hours later
3	H(ZK9)≥H > H(BaK7)	H(ZK9)≥H > H(BaK7), the resistance of the glass to humidity is classified into grade 3
4	H > H(ZK9)	H > H(ZK9), the resistance of the glass to humidity is classified into grade 4

3.2 Resistance to Acid RA(S) (Surface Method)

According to testing method of GB/T 7962.14-2010, resistance of the polished glass surface to acid, RA(S) is classified into 6 grades (Table5):

Table 5

Grade（RA）	Testing solution	Testing time t	note
1	PH=2.9 ethylic acid	t≥5h	No appearance of purplish blue interference color ， mixed color or layer of erosion
2	PH=2.9 ethylic acid	30min≤t＜5h	appearance of purplish blue interference color ， but no appearance of mixed color or layer of erosion
3	PH=4.6 acetate	t≥30min	appearance of purplish blue interference color or mixed color, but no layer of erosion
4	PH=4.6 acetate	5min≤t＜30min	appearance of purplish blue interference color or mixed color, but no layer of erosion
5	PH=6.0 distilled water	t＞3h	appearance of purplish blue interference color or mixed color, but no layer of erosion
6	PH=6.0 distilled water	t≤3h	appearance of purplish blue interference color ， mixed color or layer of erosion

3.3 Durability of Water D_W (Powder Method)

The water durability can be measured by the method specified in GB/T 17129. D_w is calculated by the following formula:

$$Dw = \frac{B-C}{B-A} \times 100\%$$

Where: D_w—soaking-out percentage, %;

B—mass of filter and sample, g;

C—mass of filter and soaked sample, g;

A—mass of filter, g.

According to the calculation results, D_w is classified into 6 grades (Table 6):

Table 6

Grade	1	2	3	4	5	6
Soaking-out percentage D_w	<0.04	0.04~0.10	0.10~0.25	0.25~0.60	0.60~1.10	>1.10

3.4 Durability of Acid D_A (Powder Method)

The acid durability can be measured by the method specified in GB/T 17129. D_A is calculated by the following formula:

$$D_A = \frac{B-C}{B-A} \times 100\%$$

Where: D_A—soaking-out percentage, %;

B— mass of filter and sample, g;

C—mass of filter and soaked sample, g;

A— mass of filter, g.

According to the calculation results, D_A is classified into 6 grades (Table7):

Table 7

Grade	1	2	3	4	5	6
Soaking-out percentage D_A	<0.20	0.20~0.35	0.35~0.65	0.65~1.20	1.20~2.20	>2.20

3.5 Climatic Resistance (CR)

Testing samples are exposed to water vapor saturated atmosphere with relative humidity 90%, the temperature of which alternates between 40℃～50℃ per hour. The periodic change lasts for 15 times.

The testing samples are removed from the climate chamber after 15 testing periods. The difference of haze before and after testing (ΔH) is used as a measure of

CR classification. Table 8 lists the climatic resistance grades.

Table 8

Grade	1	2	3	4		
				a	b	c
Increase in haze ΔH（%）	＜0.3	0.3~1.0	1.0~2.0	2.0~4.0	4.0~6.0	≥6.0

4 Thermal Properties

4.1 Coefficient of Thermal Expansion α

It refers to elongation of the unit length of glass when heated per 1℃ in a certain temperature range. The thermal expansion coefficient listed in the catalogue is the mean thermal expansion coefficient, measured by the method specified in GB/T 7962.16-2010, at a temperature ranges from -30℃ to +70℃and from +100℃ to +300℃.

4.2 Transformation Temperature T_g

When heating up glass to a certain temperature range, the optical glass will be transformed from its solid state into a plastic state. T_g represents the temperature at the intersecting point of the straight line extended from the curve of the sample's thermal expansion in the low temperature range and high temperature range when it heats up from room temperature to sag temperature (T_s), measured by the method specified in GB/T 7962.16-2010 (Fig 2).

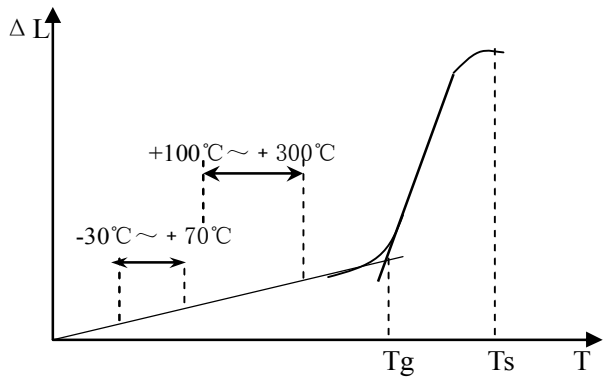

Fig 2

4.3 Sag Temperature T_s

Sag temperature is the temperature at which the sample stops expanding in the process of being heated up, measured by the method specified in GB/T 7962.16-2010

(Fig.2).

4.4 Strain Point $T_{10}^{14.5}$

Strain point is the temperature where viscosity of the glass corresponds to about $10^{14.5}$ dpa·s or $10^{13.5}$ pa·s. It is also called the lower limit temperature at which inner stresses in a glass are eliminated within a few hours.

4.5 Annealing Point T_{10}^{13}

Annealing point is the temperature where viscosity of the glass corresponds to about 10^{13} dpa·s or 10^{12} pa·s. It is also called the higher limit temperature at which inner stresses in a glass are eliminated within a few minutes.

4.6 Softening Point $T_{10}^{7.6}$

Softening point is the temperature where viscosity of the glass corresponds to about $10^{7.6}$ dpa·s or $10^{6.6}$pa·s. It indicates the temperature where the glass becomes softening obviously and deforms at its own weight.

4.7 Thermal Conductivity λ

Heat flow density divided by temperature grades is thermal conductivity, that is to say, it can be expressed by the unit of w/(m·k), and means the quantity of heat for unit area in unit time divided by temperature difference in unit distance.

Note: 1 w/（m· k）=8.6000×10^{-1}kcal/（h·m·℃）=2.38889×10^{-3}cal/（s·cm·℃）

5 Mechanical Properties

5.1 Young' s Modulus (E), Shear Modulus (G) and Poisson' s Ratio (μ)

The glass Young' s Modulus ,Shear Modulus G and Poisson' s Ratio μ are given by the following formulas:

$$E=(4G^2-3G\cdot V_T^2\cdot\rho)/(G-V_T^2\cdot\rho)$$

$$G=V_s^2\cdot\rho$$

$$\mu=E/2G-1$$

Where: E —Young's Modulus, Pa;

G — Shear Modulus, Pa;

μ— Poisson's ratio;

V_T —Velocity of longitudinal wave, m/s;

V_s—Velocity of transverse wave, m/s;

ρ—Glass density , g/cm^3.

5.2 Knoop Hardness H_k

Knoop hardness is measured by the method specified in GB/T 7962.18-2010. A pyramid-shaped diamond indenter with vertex angles of 172°30′and 130°and a rhombic base is loaded on a glass specimen surface for a certain time, and then the length of the longer diagonal of the indentation is observed with the microscope. H_k is calculated by the following formula:

$$H_K = 1.4229\frac{F}{d^2}$$

Where :F—load, N;

d—the length of the longer diagonal of the indentation, mm;

H_k—Knoop hardness, 10^7Pa.

5.3 Abrasion Hardness F_A

Abrasion hardness F_A means, under the same condition, the ratio of the volume losses of the tested sample and that of the standard sample (K9) multiplying 100. The abrasion hardness can be calculated by the following formula:

$$F_A = \frac{V}{V_0} \times 100 = \frac{w/\rho}{w_0/\rho_0} \times 100$$

Where: V—the volume loss of the tested sample;

V_0—the volume loss of the standard sample;

W—the mass loss of the tested sample;

W_0—the mass loss of the standard sample;

ρ—the density of tested sample;

ρ_0—the density of standard sample.

5.4 Density ρ

The density of glass is defined as the mass per unit volume at the temperature of 20℃, and is measured by the method specified in GB/T 7962.20-2010.

6 Quality Definition

6.1 Allowable Tolerance of Refractive Index (n_d)and Abbe-number（υ_d）

The allowable tolerance of n_d and ν_d is generally controlled within:

n_d：±30×10^{-5}　　ν_d：±0.5%

As requested, the tolerance of n_d and ν_d could be controlled in $\pm 20\times10^{-5}$and ±0.3%. For fine anneal glass types of H-K9L、H-K9LGT、H-BaK7、H-BaK7GT, the tolerance of n_d and ν_d could be controlled in $\pm 10\times10^{-5}$ and ±0.2%. Please contact us for other specifications.

n_d and υ_d are measured by the method specified in GB/T 7962.1-2010. The measurement accuracy for n_d and n_F-n_C will be $\pm 3\times10^{-5}$ and $\pm 2\times10^{-5}$ respectively.

6.2 Optical Homogeneity

The optical homogeneity is defined as the maximum variation of the refractive index Δn_{max} within a piece of glass. Δn_{max} is measured by the method specified in GB/T 7962.2-2010, and classified into 6 grades (Table 9):

Table 9

Grade	Δn_{max}
H_{00}	0.5×10^{-6}
H_0	1×10^{-6}
H_1	2×10^{-6}
H_2	5×10^{-6}
H_3	10×10^{-6}
H_4	20×10^{-6}

6.3 Stress Birefringence

6.3.1 Middle Stress

The middle stress existing in the glass blank is measured by the method specified in GB/T 7962.5-2010. Optical path difference δ in nm/cm is measured along the longest direction of glass blank, and the middle stress reflects optical path difference per unit in the middle section. It is classified into 4 grades (Table 10):

Table 10

Grade	The optical path difference at the center of glass δ(nm/cm)
1	2
1a	4
2	6
3	10

6.3.2 Edge Stress

It is measured by the method specified in GB/T 7962.5-2010, measuring the optical path difference at a distance of 5% of the diameter or from the longer side of glass blank. Edge stress (nm/cm) is defined by maximum optical path difference δ_{max} per unit thickness and classified into 4 grades (Table 11):

Table 11

Grade	The optical path difference at the edge of glass δ_{max}(nm/cm)
S_1	2
S_2	5
S_3	10
S_4	20

6.3.3 Stress Birefringence Requirements for Coarse Annealed Glass

For coarse annealed glass with the thickness smaller than or equal to 20mm, edge stress birefringence shall be smaller than or equal to 100nm/cm. For coarse annealed glass with the thickness greater than 20mm, the edge stress birefringence shall be smaller than or equal to 80nm/cm.

6.4 Striae

With the striae-scope, striae is viewed in the direction of maximum visibility. By comparing with a standard sample, the striae is classified into 4 grades. (Table 12):

Table 12

Grade	Striae feature
A	Invisible to the naked eye
B	Fine and scattering striae
C	Slight parallel striae
D	Obvious parallel striae

6.5 Inclusions

Weight of inclusions in optical glass is measured by the method in GB/T 7962.8-2010, the content of allowed inclusions in glass is decided by the total cross sectional area of inclusions (diameter $\varphi \geq 0.03$mm) in 100cm^3 glass and the inclusions are divided into 5 Grades, see Table 13. Cross section area of flat long inclusions is calculated by arithmetic mean value of the longest shaft and the shortest shaft as the

diameter.

Table 13

Grade	Total cross section area of inclusions with the diameter φ≥0.03mm in every 100cm^3 glass (mm^2/100cm^3)
A_{00}	S≤0.03
A_0	0.03<S≤0.10
A	0.10<S≤0.25
B	0.25<S≤0.50
C	0.50<S≤1.0

6.6 Coefficient of Optical Absorption

It is measured with spherical photometer by the method specified in GB/T 7962.9-2010. There is internal transmittance when the white light passes the path per cm, then the coefficient of optical absorption equals the negative value of the natural logarithm of such internal transmittance. According to the value, the quality is divided into 8 grades (Table 14):

Table 14

Grade	The Max. Coefficient of Optical Absorption		Grade	The Max. Coefficient of Optical Absorption
00	0.001		3	0.008
0	0.002		4	0.010
1	0.004		5	0.015
2	0.006		6	0.030

7 X-ray resistant Optical Glass and X-ray resistant Property

Radiated by x- ray of dosage 2.58×10^1C/kg（ or 1×10^5R）, increase of optical density per cm thickness is indicated by ΔD_1. X-ray resistant glass 500-599 shall meet the specifications in Table 15.

表 15

Type	Optical density increment ΔD_1	Type	Optical density increment ΔD_1	Type	Optical density increment ΔD_1
K502	≤0.035	ZK507	≤0.025	BaF503	≤0.045
K505	≤0.030	ZK508	≤0.020	BaF504	≤0.045
K507	≤0.035	ZK509	≤0.035	BaF506	≤0.065
K509	≤0.030	ZK510	≤0.025	BaF508	≤0.055
K510	≤0.060	ZK511	≤0.065	ZBaF501	≤0.055
BaK501	≤0.025	KF501	≤0.065	ZBaF502	≤0.090
BaK502	≤0.020	KF502	≤0.110	ZBaF503	≤0.055
BaK503	≤0.025	QF502	≤0.110	ZBaF504	≤0.200
BaK506	≤0.025	QF503	≤0.110	ZBaF505	≤0.200
BaK507	≤0.040	F502	≤0.080	ZF501	≤0.080
BaK508	≤0.020	F503	≤0.065	ZF502	≤0.060
ZK501	≤0.030	F504	≤0.060	ZF503	≤0.080
ZK503	≤0.025	F505	≤0.050	ZF504	≤0.120
ZK505	≤0.025	F506	≤0.050	ZF505	≤0.120
ZK506	≤0.020	BaF502	≤0.060	ZF506	≤0.080

8 Forms of Supply

8.1 Blocks

The two larger surfaces are fine ground while the other surfaces coarse ground. All the edges and angles are chamfered and the blocks are fine annealed.

8.2 Strips

A strip has two cut ends and four surfaces which are naturally formed. The glass is coarse or fine annealed.

8.3 Blank

8.3.1 Direct-press Blank

Direct –press blank is directly formed from melted glass, and is fine annealed.

8.3.2 Reheated -Press Blank

Reheated-press blank is formed by reheated–press process, and is fine annealed (Table 16).

Table 16

Outer diameter(φ) of pressed blanks(mm)	DP		RP	
	Tolerance of outer diameter(mm)	Thickness tolerance(mm)	Tolerance of outer diameter(mm)	Thickness tolerance(mm)
φ＜15	±0.10	±0.20	±0.10	±0.50
15≤φ＜29	±0.10	±0.20	±0.15	±0.35
29≤φ＜40	±0.15	±0.20	±0.20	±0.30
40≤φ＜60	±0.20	±0.20	±0.30	±0.30
60≤φ＜90	±0.30	±0.40	±0.35	±0.35
90≤φ＜150	±0.40	±0.40	±0.40	±0.40
φ≥150	±0.50	±0.50	±0.50	±0.50

8.4 Gobs

It refers to the blank whose cross section is nearly round, and not fine annealed .On request, we can supply Gobs with the required weight or volume.

8.5 Others

The optical glass infrared transmittance is of melting process dependence .If there is any particular requirement on the infrared transmittance, please contact CDGM sales department.

If any special specification on the large size of optical glass, please contact CDGM sales department.

For more information please refer to our website **www.cdgmgd.com.**

9 Index Catalog

In this mutual Index table, the equality of glass type refers to the similar code of glass, but the glass composition is different among that of CDGM, HOYA, OHARA and SCHOTT.

無色光学ガラス

1 光学ガラスの種類と表示

1.1 光学ガラスの種類

光学ガラスは屈折率 n_d、アッベ数 υ_d が n_d–υ_d 図にある位置とガラスの組成によって、表 1 の 18 グループに分類されています。

表 1

グループ名称	記号	グループ名称	記号
弗素化クラウンガラス	FK	軽フリントガラス	QF
軽クラウンガラス	QK	フリントガラス	F
クラウンガラス	K	バリウムフリントガラス	BaF
弗燐クラウンガラス	PK	重バリウムフリントガラス	ZBaF
重燐クラウンガラス	ZPK	重フリントガラス	ZF
バリウムクラウンガラス	BaK	ランタンフリントガラス	LaF
重クラウンガラス	ZK	重ランタンフリントガラス	ZLaF
ランタンクラウンガラス	LaK	チタンフリントガラス	TiF
クラウンフリントガラス	KF	特別フリントガラス	TF

1.2 光学ガラスの硝種の表示

光学ガラスの硝種はそれが属するガラスグループ名称の記号とコードによって表示されます。そのほか、又 6 桁の数字をコードとして初めの 3 桁が屈折率（n_d）を表示して、後の 3 桁がアッベ数（υ_d）を表示しています。例えば:H-K9L n_d=1.51680　υ_d=64.20 の場合、そのコードは 517642 と表示されます。

1.3 エコガラスの表示

鉛フリー、砒素フリー、カドミウムフリーガラス及びそのほかの放射性元素フリーのガラス硝種は名称記号の前に「H-」を付けて、エコガラスを表示しています, 例えば：H-K9L。

1.4 低融点ガラスの表示

非球面ガラスモールドレンズ専門の低融点エコガラスで名称記号の前に、

「D-」が付けて低融点エコガラスを表示しています。「D-」は「低」の発音からの頭文字です。例えば D-K9。

1.5 高透過率ガラスの表示

高透過率と特高透過率のガラスの硝種は、硝種の後に、アルファベット（GT、TT）をつけて命名します。 「GT」、即ち「高透」の中国語ピンインの首位アルファベットで高い透過率のガラスを示します； 「TT」、即ち「特」と「透」の中国語ピンインの首位アルファベットですごく高い透過率のガラスを示します。 例えば：H-ZF52GT、H-ZF52TT。

1.6 その他

L：硝種のコード番号の後に L をつけるのは、この硝種の光学特性と GB/T 903 の中の同一の硝種の屈折率の標準値偏差が$\leq\pm100\times10^{-5}$であると示して、例えば:H-K9L；コード番号の前に L をつけるのはこの硝種の光学特性と GB/T 903 の中の同一の硝種の屈折率は基本的に同様で、分散は違うと示して、例えば:H-LaFL5、その物理化学性能は基本的に不変です。

A、B、C、D、E：硝種のコード番号の後に英語アルファベットの順によってつけたアルファベットは組成が改善した順序の回数を示して、その主な光学特性は不変と基本的不変で、物理化学性能は変化があります。

N：技術性能を改善するために、高価な化学工業原料の使用を減らして、ガラス性能は優れていて、硝種のコード番号の後に N をつけて示して、その主な光学特性と物理化学性能は皆変化があって、例えば:H-ZLaF68N。

2 光学的性質

2.1 屈折率

各硝種の光学ガラスの屈折率は表 2 中の 20 スペクトル線に対して、小数点以下 5 桁の数値で表示しています。このスペクトル線の屈折率の精密測定は GB/T 7962.11-2010 の方法に基づいて，測定をしています。

表 2

スペクトル線	元素	波長(nm)	スペクトル線	元素	波長（nm）
紫外水銀	Hg	302.15	He-Ne レーザー線	He-Ne	632.8
紫外水銀	Hg	313.18	C'線（赤色カドミウム）	Cd	643.85
i 線（紫外水銀）	Hg	365.01	C 線（赤色水素）	H	656.27
h 線（紫色水銀）	Hg	404.66	r 線（赤色ヘリウム）	He	706.52
g 線（青色水銀）	Hg	435.83	s 線（赤色セシウム）	Cs	852.11
F'線（青色）	Cd	479.99	t 線（赤色水銀）	Hg	1013.98
F 線（青色水素）	H	486.13	ネオジムレーザー線		1060.0
e 線（緑色水銀）	Hg	546.07	赤色水銀	Hg	1529.58
d 線（黄色ヘリウム）	He	587.56	赤色水銀	Hg	1970.09
D 線（黄色ナトリウム）	Na	589.29	赤色水銀	Hg	2325.42

2.2 分散とアっべ数

主分散：n_F-n_C 或は $n_{F'}$-$n_{C'}$。

アッベ数 υ_d 及び υ_e はそれぞれ次式によって求めています。

$$\upsilon_d=(n_d -1)/(n_F-n_C)$$

$$\upsilon_e=(n_e -1)/(n_{F'}-n_{C'})$$

2.3 分散公式

302.15nm～2325.42nm の波長の範囲内では，Sellmeier 1 の公式で別の波長の屈折率を計算できます。

$$n_\lambda^2 - 1 = \frac{K_1\lambda^2}{\lambda^2 - L_1} + \frac{K_2\lambda^2}{\lambda^2 - L_2} + \frac{K_3\lambda^2}{\lambda^2 - L_3}$$

ここに：K_1、L_1、K_2、L_2、K_3、L_3—計算恒数（硝種によって違って、各硝種のデータ表に表示されます);

λ—波長，μm;

n_λ—求める屈折率。

ある硝種に対し、365.01nm~1013.98nm の波長の範囲内では，Schott の公式で別の波長の屈折率を計算できます。

$$n_\lambda^2=A_0+A_1\lambda^2+A_2\lambda^{-2}+A_3\lambda^{-4}+A_4\lambda^{-6}+A_5\lambda^{-8}$$

ここに：A_0～A_5—計算恒数（硝種によって違って、各硝種のデータ表に表示されます）;

λ—波長，μm;

n_λ—求める屈折率。

2.4 相対部分の分散

波長 x と y に対して相対部分の分散比 $P_{x,y}$は次式によって求めています。

$$P_{x,y}= (n_x- n_y)/ (n_F-n_C)$$

$$P'_{x,y}= (n_x- n_y)/ (n_{F'}-n_{C'})$$

データ表の中には硝種によって $P_{s,t}$、$P_{C,s}$、$P_{d,C}$、$P_{e,d}$、$P_{g,F}$ 、$P'_{s,t}$、$P'_{C',s}$、$P'_{d,C'}$、$P'_{e,d}$、$P'_{g,F'}$。

アッベ公式に基づいて，大多数の「正常ガラス」に対して，次式の公式は成立的です。

$$P_{x,y} = m_{x,y}\cdot\nu_d + b_{x,y}$$

この直線の関係は $P_{x,y}$を縦軸として υ_d を横軸として表示したのです。公式の中に $m_{x,y}$は勾配になって、$b_{x,y}$ は切断の距離になります。周知のように、二級スペクトル線の修正は即ち二つ以上の波長差に対して、一つだけ少なくでもアッベ公式に合わないガラスです。（即ち、その $b_{x,y}$値はアッベの経験の公式に反れる）。その偏差値は $\Delta P_{x,y}$で表示されて、$P_{x,y}$ −点ごとに、大体アッベ公式の「正常線」に符合しています。それは各硝種の $\Delta P_{x,y}$の数値が次式によって求めています。

$$P_{x,y} = m_{x,y}\cdot\upsilon_d + b_{x,y} + \Delta P_{x,y}$$

ですから、$\Delta P_{x,y}$は定量的に正常ガラスと相対する時の特殊な分散の逸脱特性を表示しました。私たちは選ぶ H-K6 と F4 を“正常ガラス”として H-K6 と F4 相対する部分分散とアっべ数はアッベ公式に符合しています。

データ表の中には硝種によって $\Delta P_{C,t}$、$\Delta P_{C,s}$ 、$\Delta P_{F,e}$、$\Delta P_{g,F}$を列挙しています。計算公式は次の通りです。

$$\Delta P_{C,t}= P_{C,t}-0.5462-0.004713\cdot\upsilon_d$$

$$\Delta P_{C,s}= P_{C,s} -0.4017-0.002365\cdot\upsilon_d$$

$$\Delta P_{F,e} = P_{F,e} -0.4894+0.000541\cdot\upsilon_d$$

$$\Delta P_{g,F} = P_{g,F} -0.6457+0.001703\cdot\upsilon_d$$

2.5 応力光学係数 B

ガラス内部の残留応力によって複屈折を生じます。応力光学係数は応力と応力複屈折の発生する光路差との関係を表します：

$$\delta = B \cdot d \cdot F$$

ここに：δ—総光路差，nm;

B—応力光学係数，/Pa;

d—光がガラスの中に通った行程，cm;

F—応力，Pa。

2.6 内部透過率 τ

内部透過率はサンプルの表面の反射損失を含めない透過率です。GB/T 7962.12-2010 規定の方法よって測定します。データ表の中に示した内部透過率はそれに相応する 10mm、5mm の試料の厚みのテストデータです、このデータが各ロットの平均値です。

2.7 着色度（λ_{80}/λ_5）

光学ガラスの分光透過特性は着色度（λ_{80}/λ_5）で表示します。試料の厚さは 10mm で、透過率 80%と 5%を示す波長をそれぞれ λ_{80}/λ_5 によって表示して、5nm を単位としています。例えば、透過率 80%を示す波長が 368nm になり、透過率 5%を示す波長が 313 nm になって、着色度 λ_{80}/λ_5 は 370/315 になります。図 1 を参考して下さい。

ne≥1.85 になると、ガラスの反射のロスが大きいことによって着色度用ガラスの透過比が 70%に達する時に、対応した波長 λ_{70} は λ_{80} を替えています。

着色度の変化範囲は一般的に±10nm 以内です。

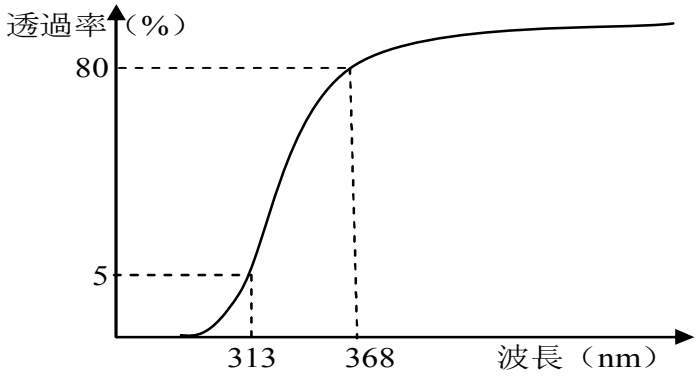

図 1

2.8 屈折率温度係数（dn/dT）

光学ガラスの屈折率は温度の変化によって変更します。真空での屈折率温度係数は絶対屈折率温度係数と言って、エア等での屈折率温度係数は相対屈折率温度係数と言います。カタログ中に表示されたスベクトル線: t（1013.98nm）、C’（643.85nm）、d（587.56nm）、e（546.07nm）、F’(479.99nm)及び g（435.83nm）という 6 本のスベクトル線の屈折率温度係数$(dn/dT)_{rel}$。

相対屈折率温度係数は次式によって計算できます。

$$\left(\frac{dn}{dT}\right)_{rel} = [(\frac{dn}{dT})_{abs} - n_{rel}(\frac{dn_{air}}{dT})]/n_{air}$$

ここに：n_{rel}—サンプルの相対屈折率で；

dn_{air}/dT—エアの屈折率温度係数。

エア屈折率温度係数は次の表 3 に載っています。

波長は 435.83~1013.98nm、温度は-60~+140℃の範囲で、次式によって温度と波長に対する絶対屈折率温度係数$(dn/dT)_{abs}$を計算できます。

$$(\frac{dn}{dT})_{abs} = \frac{n^2_{(\lambda,T_0)} - 1}{2n_{(\lambda,T_0)}}\left(D_0 + 2D_1 \cdot \Delta T + 3D_2 \cdot \Delta T^2 + \frac{E_0 + 2E_1 \cdot \Delta T}{\lambda^2 - \lambda^2_{TK}}\right)$$

ここに：$(dn/dT)_{abs}$—絶対屈折率温度係数；

D_0、D_1、D_2、E_0、E_1、λ_{TK}—硝種と関係ある常数；

λ—波長，μm；

T_0—基準温度，20℃；

T—温度，℃；

ΔT—T_0との温度差；

$n_{(\lambda,T_0)}$—波長は λ、温度は T_0である時の屈折率。

表 3

温度範囲（℃）	dn_{air}/dT（10^{-6}/℃）					
	t	C’	d	e	F’	g
-60～-40	-1.59	-1.61	-1.61	-1.62	-1.63	-1.63
-40～-20	-1.34	-1.35	-1.36	-1.36	-1.37	-1.37
-20～0	-1.15	-1.16	-1.16	-1.16	-1.17	-1.17
0～20	-0.99	-1.00	-1.00	-1.00	-1.01	-1.01
20～40	-0.86	-0.87	-0.87	-0.87	-0.88	-0.88
40～60	-0.76	-0.77	-0.77	-0.77	-0.77	-0.78
60～80	-0.67	-0.68	-0.68	-0.68	-0.69	-0.69
80～100	-0.60	-0.61	-0.61	-0.61	-0.61	-0.62
100～120	-0.54	-0.54	-0.55	-0.55	-0.55	-0.55
120～140	-0.49	-0.49	-0.49	-0.49	-0.50	-0.50

3 化学的性能

光学ガラスの素子は製造と使用の中で、その研磨された表面が各種の侵食を耐える能力を光学ガラスの化学耐久性と言われています。

3.1 湿気に対する耐久性 RC（S）（表面法）

GB/T 7962.15-2010 のテスト方法によって、標準サンプルの H（BaK7）と H（ZK9）の濁度値と比較して、湿気に対する耐久性を 4 類に分けて、詳しくは表 4 通りです。

3.2 耐酸性の作用の安定性 RA（S）(表面法）

GB/T 7962.14-2010 のテスト方法によって、酸溶液に対する安定性によって、6 類に分けて、詳しくは表 5 通りです。

表 4

類別（RC）	濁度値の比較	説　　明
1	H≤H（BaK7）	温度が 50℃で、相対湿度が 85%である条件で、恒温恒常湿度で 20h して、表面は水解の斑点が現れません
2	H≤H（BaK7）	温度が 50℃で、相対湿度が 85%である条件で、恒温恒常湿度で 20h して、表面は水解の斑点が現れます
3	H(ZK9)≥H > H(BaK7)	濁度値が H(ZK9)≥H > H(BaK7) であるガラスが、湿気に対する耐久性が 3 級です
4	H > H(ZK9)	濁度値が H（ZK9）以上のガラスは、湿気に対する耐久性が 4 級です

表 5

類別（RA）	測定の媒質	侵食時間 t	説　　明
1	PH=2.9 の酢酸	t≥5h	青紫の干渉色、雑色或いは落ちは現れていません
2	PH=2.9 の酢酸	30min≤t < 5h	青紫の干渉色が現れて、雑色或いは落ちは現れていません
3	PH=4.6 の酢酸塩	t≥30min	青紫の干渉色或いは雑色が現れて、落ちは現れていません
4	PH=4.6 の酢酸塩	5min≤t < 30min	青紫の干渉色或いは雑色が現れて、落ちは現れていません
5	PH=6.0 の蒸留水	t > 3h	青紫の干渉色或いは雑色が現れて、落ちは現れていません
6	PH=6.0 の蒸留水	t≤3h	青紫の干渉色或いは雑色或いは落ちが現れます

3.3 耐水性 D_W（粉末法）

GB/T 17129 の測定方法に基づいて次式によって求めています：

$$Dw = \frac{B - C}{B - A} \times 100\%$$

ここに：D_W—ガラスの浸出したパーセント，%;

B— フィルターと試料の質量，g;

C— フィルターと侵食した後の試料の質量，g;

A—フィルターの質量，g。

計算で得た侵食したパーセントによって、光学ガラスの耐水性 D_W を次表の 1~6 類に分類しています。

次の表 6 の通りです。

表 6

類別	1	2	3	4	5	6
浸出した%（D_w）	＜0.04	0.04～0.10	0.10～0.25	0.25～0.60	0.60～1.10	＞1.10

3.4 耐酸性 D_A（粉末法）

GB/T 17129 の測定方法に基づいて、次式によって求めています。

$$D_A = \frac{B - C}{B - A} \times 100\%$$

ここに：D_A—ガラスの浸出したパーセント，%;

B— フィルターと試料の質量，g;

C— フィルターと侵食した後の試料の質量，g;

A—フィルターの質量，g。

計算で得た侵食したパーセントによって、光学ガラスの耐酸性 D_A を次表の 1~6 類に分類しています。

表 7

類別	1	2	3	4	5	6
浸出した%（D_A）	＜0.20	0.20～0.35	0.35～0.65	0.65～1.20	1.20～2.20	＞2.20

3.5 耐候性（CR）

サンプルを相対湿度90％の飽和蒸気雰囲気というテスト箱に入れて、40℃～50℃で1hごとに交互に循環して、15周期を循環します。サンプルの濁度変化量によって耐候性の類別を区分します。表8は耐候性分類です。

表 8

類別	1	2	3	4		
				a	b	c
濁度の増加量 ΔH（%）	＜0.3	0.3~1.0	1.0~2.0	2.0~4.0	4.0~6.0	≥6.0

4 熱的特性

4.1 線膨脹係数 α

熱膨張係数：一定的な温度の範囲内に、ガラスの温度は 1℃ごとに上げる時、ガラスの単位長さの伸長量です。GB/T 7962.16-2010 の方法に基づいて測定をします。データ表の中には-30℃～＋70℃と＋100℃～＋300℃の平均熱膨張係数で表示しています。

4.2 転移点 T_g

光学ガラスにはある温度区域内にだんだん固体から生可塑性になります。転移点（T_g）は試料が室温から屈伏点 T_s まで温度を上げて、低温区域と高温区域の延長線の交点の温度で表示していりります。図 2 に示すように GB/T 7962.16-2010 の方法に基づいて測定をしています。

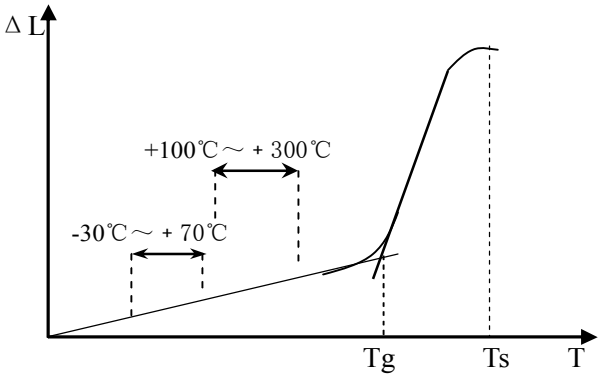

図 2

4.3 屈伏点 T_s

屈伏点の温度は図 2 に示すように、ガラス試料が升温中に膨張の停止する温度で表示しています。GB/T 7962.16-2010 の方法に基づいて測定をしています。

4.4 歪点 $T_{10}^{14.5}$

歪み点はガラスの粘性が $10^{14.5}$dpa·s（或いは $10^{13.5}$pa·s）になる時の温度です。即ち数時間の後、ガラス内の歪みの温度を消去できます。ガラスのアニールの下限温度とも言われています。

4.5 徐冷点 T_{10}^{13}

徐冷点はガラスの粘度が 10^{13} dpa·s（或いは 10^{12}pa·s）になる時の温度です。即ち数分の内、ガラス内の歪みの温度を消去できます。ガラスのアニールの上限温度とも言われています。

4.6 軟化点 $T_{10}^{7.6}$

軟化点はガラスの粘度が $T_{10}^{7.6}$dpa·s（或いは $10^{6.6}$pa·s）になる時、ガラスが自重で顕著に軟化変形しはじめる温度です。

4.7 熱伝導係数 λ

熱伝導係数は熱流密度を温度の傾斜度で割った商で、つまり単位時間に通る単位面積の熱量を単位距離の温度差で割って、w/（m·k）を単位として表示されます。

即ち：1 w/（m·k）=8.6000×10^{-1}kcal/（h·m·℃）=2.38889×10^{-3}cal/（s·cm·℃）

5 機械的性質

5.1 ヤング率 E、剛性率 G とボアソン比 μ

光学ガラスのヤング率模量、剛性率とボアソン比は次式によって計算します：

$$E = \frac{4G^2 - 3GV_T^2\rho}{G - V_T^2\rho}$$

$$G = Vs^2\rho$$

$$\mu = \frac{E}{2G} - 1$$

ここに：E—ヤング率，Pa;

G—剛性率，Pa;

μ—ボアソン比;

V_T—縦波の速度，m/s;

V_s—横波の速度，m/s;

ρ—ガラスの密度，g/cm^3。

5.2 ヌープ（Knoop）硬さ H_K

ヌープ硬さは GB/T 7962.18-2010 の測定方法に基づいて、測定をしています。その方法は平面摩耗されたガラス面に、対稜角が 172°30’と 130°のダイヤモンド四角錐圧子に一定の荷重をかけて一定の時間を保持して荷重を取ってから、顕微鏡でくぼみの長い方の対角線の長さを観察し、測定します。次式によってヌープ硬さを求めています。

$$H_k = 1.4229\frac{F}{d^2}$$

ここに：F—荷重，N;

d—くぼみの長い方の対角線の長さ，mm;

H_K—ヌープ硬さ, 10^7Pa。

5.3 摩耗度 F_A

摩耗度は同じ条件で、試料の摩耗量と標準試料（K9 ガラス）の摩耗量（体積）の比に 100 をかけて得る数値で、次式によって摩耗度を求めています。

$$F_A = \frac{V}{V_0} \times 100 = \frac{w/\rho}{w_0/\rho_0} \times 100$$

ここに：V—試料の体積摩耗量;

V_0—標準試料の体積摩耗量;

W—試料の質量摩耗量;

W_o—標準試料の質量摩耗量;

ρ—試料の密度;

ρ_0—標準試料の密度。

5.4 密度 ρ

光学ガラスの密度は 20℃の時、光学ガラスの単位体積の質量だと言われています。光学ガラスの密度は GB/T 7962.20-2010 の方法に基づいて測定しま

す。単位は g/cm^3 で表示しています。

6 ガラスの品質

6.1 屈折率 n_d とアッベ数 ν_d と標準値の許容差

屈折率 n_d とアッベ数 ν_d の普通許可偏差は：

n_d：±30×10^{-5}　　ν_d：±0.5%

取引先が需要ある場合に、n_d と ν_d の許可公差は±20×10^{-5} と±0.3%まで制御できます；H-K9L、H-K9LGT、H-BaK7、H-BaK7GT など精密アニール製品の場合に、n_d と ν_d の許可公差は±10×10^{-5} と±0.2%まで制御できます。取引先が特殊要求ある時、販売メンバーと連絡してください。

屈折率とアッベ数は GB/T7962.1–2010 によって測定します、屈折率の測定精度が±3×10^{-5} で、主分散の測定精度が±2×10^{-5} です。

6.2 光学的均質度

光学的均質度は GB/T 7962.2–2010 の測定方法に基づいて、測定をしています。ガラスの中で各部分の屈折率の偏差の最大値 Δn_{max} によって、表示しています。6 類に分類しています。次の表 9 の通りです。

表 9

類別	Δn_{max}
H_{00}	0.5×10^{-6}
H_0	1×10^{-6}
H_1	2×10^{-6}
H_2	5×10^{-6}
H_3	10×10^{-6}
H_4	20×10^{-6}

6.3 歪み

6.3.1 中部の歪み

ガラスブロックの中央部の歪みの複屈折は GB/T 7962.5-2010 の測定方法に基づいて、測定をしています。最長方向の光路差を測定をしてい、中央部の単

位長さ 1cm あたりに発生する光路差δによって、4 類に分類しています。次の表 10 の通りです。

表 10

類別	ガラス内部光路差 δ（nm/cm）
1	2
1a	4
2	6
3	10

6.3.2 辺部歪み

ガラスブロックの歪みの複屈折は縁から直径の 5%離れるあるいは縁の単位厚さの最大光路差 δ_{max} によって表示して、GB/T 7962.5-2010 の測定方法に基づいて測定をして、次表の 4 類に分類しています。次の表 11 の通りです。

表 11

類別	ガラスの縁の光路差 δ_{max}（nm/cm）
S_1	2
S_2	5
S_3	10
S_4	20

6.3.3 ラフアニール硝子の歪み複屈折

厚さが 20㎜ 以下のラフアニール硝子は、辺部歪み複屈折が 100nm/cm 以下である。厚さが 20㎜ を超えるラフアニール硝子は、辺部歪み複屈折が 80nm/cm 以下である。

6.4 脈理

脈理は点光源とレンズ系からなる脈理検査装置を用いて、脈理の見やすい方向で標準試料と比較検査をして、次表の 4 級に分類しています。次の表 12 の通りです。

表 12

級別	脈理の程度
A	目で認められないもの
B	薄くて分散した脈理で見える限界のもの
C	平行な脈理がわずかにあるもの
D	大ざっぱ平行な脈理がある

6.5 泡

光学ガラス中の泡の品質は GB/T 7962.8-2010 の測定方法に基づいて、測定をしています。泡の程度は、100cm^3 のガラス中に含まれている泡（直径 φ≥0.03mm）の断面積の総和を計算して、確認する。丸くない泡は直径の最大値と最小の平均値で直径として、断面積を計算しています。

表 13

級別	直径 φ≥0.03mm の泡の断面積の総和（mm^2/100cm^3）
A_{00}	S≤0.03
A_0	0.03<S≤0.10
A	0.10<S≤0.25
B	0.25<S≤0.50
C	0.50<S≤1.0

6.6 光吸収係数

ガラスの光吸収係数は白光がガラスの中に 1cm ごとに光路を通る内透過率の自然対数の負値で表示しています。GB/T 7962.9-2010 の測定方法に基づいて、測定と計算をしています。8 類に分類して、詳しくは表 14 通りです。

表 14

類別	光吸収係数≤		類別	光吸収係数≤
00	0.001		3	0.008
0	0.002		4	0.010
1	0.004		5	0.015
2	0.006		6	0.030

7 耐輻射ガラス及び耐輻射性能

耐輻射ガラスの耐輻射性能は 2.58×10^{1}C/kg（或いは 1×10^{5}R）の x 射線によって輻射した後、厚み 1cm ごとにの光密度増量 ΔD_1 によって表示しています。各耐輻射ガラスの耐輻射性能は表 15 で表示されています。

表 15

硝種	ΔD_1		硝種	ΔD_1		硝種	ΔD_1
K502	≤0.035		ZK507	≤0.025		BaF503	≤0.045
K505	≤0.030		ZK508	≤0.020		BaF504	≤0.045
K507	≤0.035		ZK509	≤0.035		BaF506	≤0.065
K509	≤0.030		ZK510	≤0.025		BaF508	≤0.055
K510	≤0.060		ZK511	≤0.065		ZBaF501	≤0.055
BaK501	≤0.025		KF501	≤0.065		ZBaF502	≤0.090
BaK502	≤0.020		KF502	≤0.110		ZBaF503	≤0.055
BaK503	≤0.025		QF502	≤0.110		ZBaF504	≤0.200
BaK506	≤0.025		QF503	≤0.110		ZBaF505	≤0.200
BaK507	≤0.040		F502	≤0.080		ZF501	≤0.080
BaK508	≤0.020		F503	≤0.065		ZF502	≤0.060
ZK501	≤0.030		F504	≤0.060		ZF503	≤0.080
ZK503	≤0.025		F505	≤0.050		ZF504	≤0.120
ZK505	≤0.025		F506	≤0.050		ZF505	≤0.120
ZK506	≤0.020		BaF502	≤0.060		ZF506	≤0.080

8 製品のサイズ、形状

8.1 ブロック品

材料の大きい両面を砂かけして、ほかの四面に粗摺りしたものです。簡単な面取りをしています。精密アニールをしています。

8.2 E-バー材

切断面は自然の透明面で、他の 4 面は、そのままの成型面になります。ラフアニール或いは精密アニールをしています。

8.3 プレス品

8.3.1 DP 品

DP 品は溶解炉から流れるガラスを直接に金型に入れて，成型した製品です。精密アニールをしています。

8.3.2 RP 品

RP 品は、ガラスをもう一度加熱、プレスする製品です。精密アニールをしています。

DP 品、RP 品の外径及び厚さの公差は次表 16 の通りです。

表 16

プレス品の外径 φ（mm）	DP 製品		RP 製品	
	外径公差（mm）	肉厚公差（mm）	外径公差（mm）	肉厚公差（mm）
φ＜15	±0.10	±0.20	±0.10	±0.50
15≤φ＜29	±0.10	±0.20	±0.15	±0.35
29≤φ＜40	±0.15	±0.20	±0.20	±0.30
40≤φ＜60	±0.20	±0.20	±0.30	±0.30
60≤φ＜90	±0.30	±0.40	±0.35	±0.35
90≤φ＜150	±0.40	±0.40	±0.40	±0.40
φ≥150	±0.50	±0.50	±0.50	±0.50

8.4 ゴブ料（**GOB**）

ゴブ料は（GOB と言われる）円筒状のもので、重量或いは体積はユーザの注文の要望にも基づいて供給できます。それは通常にアニールをしないものです。

8.5 そのほか

熔解技術によって光学ガラスの赤外透過率に対する影響は比較的に大きくて、もし赤外透過率に特別なご要求があれば、あらかじめ成都光明の営業員

にご連絡ください。

特別、サイズが大きいガラス製品及び規格を必要とする場合にはあらかじめ成都光明の営業員にご連絡ください。

詳しいデータについて、**www.cdgmgd.com** というホームページ或いはウィーチャットの ID 番号でお調べください。

9 互い検索目次

本カタログの光学ガラスの互い検索表の中に硝種が同じだということは、ガラスのコードが同じだということを指しますが、ガラスの組成で CDGM、HOYA、OHARA と SCHOTT は違います。

CDGM		HOYA		OHARA		SCHOTT	
Code	**Type**	**Code**	**Type**	**Code**	**Type**	**Code**	**Type**
497816	H-FK61	497-816	FCD1	497816	S-FPL51	497816	N-PK52A
497816	H-FK61B	497-816	FCD1B	497816	S-FPL51	497816	N-PK52A
457903	H-FK71	457-903	FCD10				
438945	H-FK95N	(437-951)	(FCD100)	(439950)	(S-FPL53)		
470669	H-QK1						
487704	H-QK3L	487-704	FC5	487702	S-FSL5	487704	N-FK5
500621	H-K1						
500660	H-K2	500-660	BSC4	500660	BSL4	500658	BK4
505647	H-K3					505650	BK5
508611	K4A						
510634	H-K5	510-634	BSC1	510636	BSL1	510635	BK1
511605	H-K6	511605	C7	511605	NSL7	511604	K7
515606	H-K7						
516568	H-K8						
517642	H-K9L	517-642	BSC7	516641	S-BSL7	517642	N-BK7
517642	H-K9LGT					517642	N-BK7HT
517642	H-K9L*	517-642	BSC7	516641	S-BSL7	517642	N-BK7
517642	H-K9LA	517-642	BSC7	516641	S-BSL7	517642	N-BK7
518590	H-K10	518-590	E-C3	518590	S-NSL3		
526602	H-K11	526-601	BACL1	526600	NSL21	526600	BALK1
534555	H-K12	534-554	ZNC5	534555	ZSL5	534553	ZK5
522595	H-K50	522-595	C5	522598	S-NSL5	522595	N-K5
523586	H-K51	523586	C12	523585	NSL51		
618634	H-ZPK1A	618-634	PCD4	618634	S-PHM52	618634	N-PSK53A
603655	H-ZPK2A			603655	S-PHM53		
593673	H-ZPK3	593-670	PCD51				
593683	H-ZPK5	593-686	FCD515				
569713	H-ZPK7						
530605	H-BaK1						
540597	H-BaK2	540-597	BAC2	540595	S-BAL12	540597	N-BAK2
547628	H-BaK3			548628	BAL21		

CDGM		HOYA		OHARA		SCHOTT	
Code	**Type**	**Code**	**Type**	**Code**	**Type**	**Code**	**Type**
552634	H-BaK4	552-634	PCD3	552638	BAL23	552635	N-PSK3
561583	H-BaK5						
564608	H-BaK6	564-608	BACD11	564607	S-BAL41	564608	N-SK11
569560	H-BaK7	569-560	BAC4	569563	S-BAL14	569560	N-BAK4
569560	H-BaK7GT					569560	N-BAK4HT
569561	H-BaK7A	569-560	BAC4	569563	S-BAL14	569560	N-BAK4
573575	H-BaK8	573-575	BAC1	573578	S-BAL11	573576	N-BAK1
569630	H-ZK1	569-631	PCD2	569631	BAL22	569631	PSK2
583595	H-ZK2	583-595	BACD12	583594	S-BAL42	583595	SK12
589613	H-ZK3	589-613	BACD5	589612	S-BAL35	589613	N-SK5
589613	H-ZK3A	589-613	BACD5	589612	S-BAL35	589613	N-SK5
609589	H-ZK4	609-589	BACD3	609590	BSM3	609589	SK3
611558	H-ZK5	611-558	BACD8	611559	BSM8	611559	SK8
613586	H-ZK6	613-586	BACD4	613587	S-BSM4	613586	N-SK4
613604	H-ZK7A						
613606	H-ZK7						
614551	H-ZK8	614-551	BACD9	614550	S-BSM9	614552	SK9
620603	H-ZK9B	620-603	BACD16	620603	S-BSM16	620603	N-SK16
620603	H-ZK9A	620-603	BACD16	620603	S-BSM16	620603	N-SK16
622567	H-ZK10						
623569	H-ZK10L	623-569	E-BACD10	623570	S-BSM10	623570	N-SK10
639555	H-ZK11	639-555	BACD18	639554	S-BSM18	639554	N-SK18
603606	H-ZK14	603-607	BACD14	603607	S-BSM14	603606	N-SK14
617539	H-ZK20	617-539	BACED1	617540	BSM21	617539	SSK1
623581	H-ZK21	623-581	BACD15	623582	S-BSM15	623580	N-SK15
607567	H-ZK50	607-567	BACD2	607568	S-BSM2	607567	N-SK2
607567	H-ZK50GT					607567	N-SK2HT
660574	H-LaK1	660-573	LAC11			660573	LAK11
692545	H-LaK2A						
747510	H-LaK3						
640602	H-LaK4L	640-602	LACL60	640601	S-BSM81	640601	N-LAK21

CDGM		HOYA		OHARA		SCHOTT	
Code	**Type**	**Code**	**Type**	**Code**	**Type**	**Code**	**Type**
678555	H-LaK5A	678-555	LAC12	678553	S-LAL12	678552	N-LAK12
694534	H-LaK6A	694-533	LAC13	694532	S-LAL13	694533	N-LAK13
713538	H-LaK7A	713-539	LAC8	713539	S-LAL8	713538	N-LAK8
720503	H-LaK8A	720-503	LAC10	720502	S-LAL10	720506	N-LAK10
720503	H-LaK8B	720-503	LAC10	720502	S-LAL10	720506	N-LAK10
651559	H-LaK10	650-557	LACL12	651562	S-LAL54	651559	N-LAK22
665546	H-LaK11						
697562	H-LaK12			697565	LAL64	697562	LAK24
652584	H-LaK50A	652-584	LAC7	652585	S-LAL7	652585	N-LAK7
697555	H-LaK51A	697-555	LAC14	697555	S-LAL14	697554	N-LAK14
729547	H-LaK52	729-547	TAC8	729547	S-LAL18	729545	N-LAK34
755523	H-LaK53B	755-523	TAC6	755523	S-YGH51	755523	N-LAK33B
755523	H-LaK53A						
734515	H-LaK54	734-511	TAC4	734515	S-LAL59		
691548	H-LaK59A	691-547	LAC9	691548	S-LAL9	691547	N-LAK9
741526	H-LaK61	741-526	TAC2	741527	S-LAL61		
670517	H-LaK67			670516	LAL53		
517522	H-KF6	517-522	E-CF6	517524	S-NSL36		
548458	H-QF1	548-458	E-FEL1	548458	S-TIL1		
548459	QF1						
575415	H-QF3			575415	S-TIL27		
575413	QF3						
582420	QF5	582-420	FL3	582421	PBL23	582421	LF3
532488	H-QF6A	532-488	E-FEL6	532489	S-TIL6	532489	N-LLF6
532488	QF6						
541472	H-QF8	541-472	E-FEL2	541472	S-TIL2		
541472	QF8						
596392	H-QF14	596-392	E-F8	596392	S-TIM8		
581409	H-QF50	581-409	E-FL5	581407	S-TIL25		
581408	H-QF50A	581-409	E-FL5	581407	S-TIL25		
581409	QF50						

CDGM		HOYA		OHARA		SCHOTT	
Code	**Type**	**Code**	**Type**	**Code**	**Type**	**Code**	**Type**
567428	H-QF56	567-428	E-FL6	567428	S-TIL26		
603380	H-F1	603-380	E-F5	603380	S-TIM5		
603380	F1	603-380	F5	603380	PBM5	603380	F5
613370	H-F2	613-370	E-F3	613370	S-TIM3		
613370	F2	613-370	F3	613370	PBM3	613370	F3
617367	H-F3						
617366	F3	617-366	F4	617366	PBM4	617366	F4
620364	H-F4	620-363	E-F2	620363	S-TIM2	620364	N-F2
620364	F4	620-363	F2	620363	PBM2	620364	F2
624359	H-F5						
624359	F5			621359	PBM11		
625356	F6	625-356	F7			625356	F7
636354	F7	636-353	F6	636354	PBM6	636353	F6
626357	H-F13	626-357	E-F1	626357	S-TIM1		
626357	F13	626-357	F1	626357	PBM1	626357	F1
640345	H-F51	640-346	E-FD7	640345	S-TIM27		
570495	H-BaF2						
580537	H-BaF3					580539	N-BALF4
583466	H-BaF4						
583465	BaF4						
606439	H-BaF5			606437	S-BAM4	606437	N-BAF4
608462	H-BaF6					(609466)	(N-BAF52)
614400	H-BaF7						
614400	BaF7						
626391	H-BaF8	626-391	BAFD1	626392	BAM21	626390	BASF1
622532	H-ZBaF1			622532	S-BSM22	622533	N-SSK2
640483	ZBaF2						
657511	H-ZBaF3						
664355	H-ZBaF4					664360	N-BASF2
671473	H-ZBaF5						
667484	H-ZBaF16	667-483	BAF11	667483	S-BAH11	667484	BAFN11

CDGM		HOYA		OHARA		SCHOTT	
Code	**Type**	**Code**	**Type**	**Code**	**Type**	**Code**	**Type**
668419	ZBaF17	668-419	BAFD6	668419	BAH26	668419	BASF6
702412	H-ZBaF20	702-412	BAFD7	702412	S-BAH27	702410	N-BASF52
723380	H-ZBaF21	723-380	BAFD8	723380	S-BAH28		
658509	H-ZBaF50	658-509	BACED5	658509	S-BSM25	658509	N-SSK5
683445	ZBaF51	683-447	BAF22	683447	BAH51	683445	BAF50
670472	H-ZBaF52	670-472	BAF10	670473	S-BAH10	670471	N-BAF10
648338	H-ZF1	648-338	E-FD2	648338	S-TIM22	648338	N-SF2
648339	H-ZF1A	648-338	E-FD2	648338	S-TIM22	648338	N-SF2
648338	ZF1	648-338	FD2	648338	PBM22	648339	SF2
673322	H-ZF2	673-322	E-FD5	673321	S-TIM25	673323	N-SF5
673322	ZF2	673-322	FD5	673321	PBM25	673322	SF5
717295	H-ZF3	717-295	E-FD1	717295	S-TIH1	717296	N-SF1
717295	ZF3	717-295	FD1	717295	PBH1	717295	SF1
728283	H-ZF4A	728-283	E-FD10	728285	S-TIH10	728285	N-SF10
728283	H-ZF4AGT						
728283	ZF4	728-283	FD10	728285	PBH10	728284	SF10
740283	H-ZF5			740283	S-TIH3		
740282	ZF5	740-282	FD3	740283	PBH3	740282	SF3
755275	H-ZF6	755-275	E-FD4	755275	S-TIH4	755274	N-SF4
755275	ZF6	755-275	FD4	755275	PBH4	755276	SF4
805255	H-ZF7LA	805-255	FD60	805254	S-TIH6	805254	N-SF6
805255	H-ZF7LAGT	805-255	FD60-W			805254	N-SF6HT ultra
806254	ZF7						
805255	ZF7L	805-255	FD6	805254	PBH6	805254	SF6
805255	ZF7LGT						
654337	ZF8	654-337	FD9	654336	PBM29	654337	SF9
689312	H-ZF10	689-312	E-FD8	689311	S-TIM28	689313	N-SF8
689312	ZF10	689-312	FD8	689311	PBM28	689313	SF8
699301	H-ZF11	699-301	E-FD15	699301	S-TIM35	699302	N-SF15
699301	ZF11	699-301	FD15	699301	PBM35	699302	SF15
762266	H-ZF12	762-266	FD140	762265	S-TIH14	762265	N-SF14

CDGM		HOYA		OHARA		SCHOTT	
Code	**Type**	**Code**	**Type**	**Code**	**Type**	**Code**	**Type**
762266	ZF12	762-266	FD14	762265	PBH14	762265	SF14
785257	H-ZF13	785-257	FD110	785257	S-TIH11	785257	N-SF11
785257	H-ZF13GT						
785258	ZF13	785-257	FD110	785257	PBH11	785258	SF11
667331	H-ZF39			667330	S-TIM39		
741278	H-ZF50	741-278	E-FD13	741278	S-TIH13		
741278	ZF50	741-278	FD13	741278	PBH13	741276	SF13
785261	ZF51	785-261	FDS3	785262	PBH23	785261	SF56A
847238	H-ZF52	847-238	FDS90	847238	S-TIH53	847238	N-SF57
847238	H-ZF52GT	847-238	FDS90-SG	847238	S-TIH53W	847238	N-SF57HT ultra
847238	H-ZF52TT						
847238	H-ZF52A	847-238	FDS90	847238	S-TIH53	847238	N-SF57
847238	ZF52	847-238	FDS9	847239	PBH53	847238	SF57
923209	H-ZF62	923-209	E-FDS1			923209	N-SF66
923209	H-ZF62GT	923-209	E-FDS1-W			923209	N-SF66
808227	H-ZF71	808-228	FD225	808228	S-NPH1		
808227	H-ZF71GT	808-228	FD225	808228	S-NPH1W		
923189	H-ZF72A			923189	S-NPH2		
923189	H-ZF72AGT						
959175	H-ZF73			959175	S-NPH3		
959175	H-ZF73GT						
946179	H-ZF88	946-180	FDS18				
946179	H-ZF88GT	946-180	FDS18-W				
694492	H-LaF1			(694508)	(S-LAL58)		
717479	H-LaF2	717-480	LAF3	717479	S-LAM3	717480	N-LAF3
744449	H-LaF3B	744-449	LAF2	744448	S-LAM2	744449	N-LAF2
750350	H-LaF4	750-350	E-LAF7	750353	S-LAM7	750348	N-LAF7
750350	H-LaF4GT						
754375	H-LaFL5						
757477	H-LaF6LA	757-477	NBF2	757478	S-LAM54	757478	LAFN24
782371	H-LaF7					782372	LAF22A

CDGM		HOYA		OHARA		SCHOTT	
Code	**Type**	**Code**	**Type**	**Code**	**Type**	**Code**	**Type**
788475	H-LaF10LA	788-475	TAF4	788474	S-LAH64	788475	N-LAF21
773496	H-LaF50B	773-496	TAF1	773496	S-LAH66	773496	N-LAF34
700481	H-LaF51			700481	S-LAM51		
786442	H-LaF52	786-439	NBFD11	786442	S-LAH51	786441	N-LAF33
743492	H-LaF53	743-492	NBF1	743493	S-LAM60	743494	N-LAF35
800422	H-LaF54	800-423	NBFD12	800422	S-LAH52	800424	N-LAF36
762401	H-LaF55			762401	S-LAM55		
720437	H-LaF62			720437	S-LAM52		
802443	H-ZLaF1	802-443	NBFD14			802443	LASF11
803468	H-ZLaF2A			803467	LAH62	803468	LASF1
855366	H-ZLaF3	855-366	TAFD13			855366	LASF13
911353	H-ZLaF4LA	911-353	TAFD35				
911353	H-ZLaF4LB	911-353	TAFD35				
804466	H-ZLaF50E	804-465	TAF3D	804466	S-LAH65VS	804465	N-LASF44
804466	H-ZLaF50D	804-465	TAF3	804466	S-LAH65VS	804465	N-LASF44
805396	H-ZLaF51	805-396	NBFD3	(804396)	(S-LAH63)		
806410	H-ZLaF52A	806-407	NBFD13	806409	S-LAH53V	806406	N-LASF43
806410	H-ZLaF52	806-407	NBFD13	806409	S-LAH53V	806406	N-LASF43
834372	H-ZLaF53B	834-373	NBFD10	834372	S-LAH60	834373	N-LASF40
834372	H-ZLaF53BGT						
835427	H-ZLaF55D	835-427	TAFD5G	835427	S-LAH55VS	835431	N-LASF41
835427	H-ZLaF55C	835-427	TAFD5F	835427	S-LAH55VS	835431	N-LASF41
806333	H-ZLaF56B	806-333	NBFD15				
801350	H-ZLaF66			801350	S-LAM66	801350	N-LASF45
801350	H-ZLaF66GT					801350	N-LASF45HT
883409	H-ZLaF68C	883-408	TAFD30	883408	S-LAH58	883408	N-LASF31A
883392	H-ZLaF68N						
883408	H-ZLaF68B	883-408	TAFD30	883408	S-LAH58	883408	N-LASF31A
816465	H-ZLaF69	816-466	TAF5	816466	S-LAH59		
816466	H-ZLaF69A	816-466	TAF5	816466	S-LAH59		
850323	H-ZLaF71			850323	S-LAH71		

CDGM		HOYA		OHARA		SCHOTT	
Code	**Type**	**Code**	**Type**	**Code**	**Type**	**Code**	**Type**
850322	H-ZLaF71AGT					850322	N-LASF9
881402	H-ZLaF73	881401	TAFD33				
904313	H-ZLaF75A	904-313	TAFD25	904313	S-LAH95	904313	N-LASF46A
904314	H-ZLaF75B	904-313	TAFD25	904313	S-LAH95	904313	N-LASF46B
850301	H-ZLaF76			850300	S-NBH57		
850300	H-ZLaF76A			850300	S-NBH57		
901371	H-ZLaF78B	(900-374)	(TAFD37A)				
954323	H-ZLaF89L	954-323	TAFD45	954323	S-LAH98		
001254	H-ZLaF90	001-255	TAFD40				
003283	H-ZLaF92			003283	S-LAH79		
613441	H-TF3L	613-444	E-ADF10	613443	S-NBM51	613445	N-KZFS4
612441	TF3						
654395	H-TF5	654-396	E-ADF50	654397	S-NBH5	654397	N-KZFS5
497815	D-FK61	497-816	M-FCD1				
497816	D-FK61A	497-816	M-FCD1				
437944	D-FK95						
487704	D-QK3L					487704	N-FK5
516640	D-K9			516641	L-BSL7	516641	P-BK7
516640	D-K9GT						
517634	D-K59						
524703	D-PK3						
620638	D-ZPK1A	(619-639)	(M-PCD4)				
593672	D-ZPK3	(592-670)	(M-PCD51)				
592683	D-ZPK5	593-686	FCD515				
569712	D-ZPK7						
582593	D-ZK2	583-595	M-BACD12	583594	L-BAL42		
586595	D-ZK2L						
588613	D-ZK3	589-613	M-BACD5N	589612	L-BAL35	589612	P-SK58A
591606	D-ZK3L						
608578	D-ZK79					(610579)	(P-SK60)
677548	D-LaK5			678549	L-LAL12		

CDGM		HOYA		OHARA		SCHOTT	
Code	**Type**	**Code**	**Type**	**Code**	**Type**	**Code**	**Type**
693531	D-LaK6	694-532	M-LAC130	694532	L-LAL13	694532	P-LAK35
729539	D-LaK52	729-540	M-TAC80				
668553	D-LaK70						
687312	D-ZF10	689-312	M-FD80	689310	L-TIM28	689313	P-SF8
000207	D-ZF93	(002-193)	(M-FDS2)				
773495	D-LaF50	(773-495)	(M-TAF1)				
767492	D-LaF050	768-492	M-TAF101				
742493	D-LaF53	743-493	M-NBF1	743-493	L-LAM60		
730405	D-LaF79	731-405	M-LAF81	731405	L-LAM69		
802455	D-ZLaF50	(801-455)	(M-TAF31)				
809410	D-ZLaF52LA					810409	P-LASF51
821427	D-ZLaF61	(821-427)	(M-TAFD51)				
883372	D-ZLaF67	(882-372)	(M-TAFD307)				
808410	D-ZLaF81	(808-409)	(MC-NBFD135)			809405	P-LASF50
851401	D-ZLaF85A	(851-401)	(M-TAFD305)	(854404)	(L-LAH85V)		
853405	D-ZLaF85L	(851-401)	(M-TAFD305)	854404	L-LAH85V		
853406	D-ZLaF85LS	(851-401)	(M-TAFD305)	854404	L-LAH85V		
487704	H-QK3LGTi			487703	S-FSL5Y	487705	FK5HTi
581409	QF50GTi			581408	PBL25Y	581409	LF5HTi
519633	H-K90GTi			（516643）	(BSL7Y)	(517642)	(N-BK7HTi)

（）代表代码差异较大

H-FK61	497816	n_d = 1.497000	υ_d = 81.61	$n_F - n_C$ = 0.006090
		n_e = 1.498454	υ_e = 81.21	$n_{F'} - n_{C'}$ = 0.006138

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	1.479611
$n_{1970.09}$	1970.09	1.482755
$n_{1529.58}$	1529.58	1.486141
$n_{1060.0}$	1060.0	1.489709
n_t	1013.98	1.490121
n_s	852.11	1.491841
n_r	706.52	1.494079
n_C	656.27	1.495140
$n_{C'}$	643.85	1.495436
n_{He-Ne}	632.8	1.495713
n_D	589.29	1.496946
n_d	587.56	1.497000
n_e	546.07	1.498454
n_F	486.13	1.501230
$n_{F'}$	479.99	1.501574
n_g	435.83	1.504506
n_h	404.66	1.507205
n_i	365.01	1.511760
$n_{313.18}$	313.18	1.520843
$n_{302.15}$	302.15	1.523488

色散公式常数 Constants of Dispersion Formula	
K_1	5.02504076E-01
L_1	1.32743798E-03
K_2	7.15240076E-01
L_2	1.08378966E-02
K_3	8.36628986E-01
L_3	1.55933755E+02

折射率温度系数常数 Constants of dn/dt	
D_0	-2.07E-05
D_1	-3.70E-10
D_2	-2.32E-11
E_0	3.49E-07
E_1	2.63E-10
λ_{TK}(μm)	0.180

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2824	$P'_{s,t}$	0.2802
$P_{C,s}$	0.5417	$P'_{C',s}$	0.5857
$P_{d,C}$	0.3054	$P'_{d,C'}$	0.2548
$P_{e,d}$	0.2388	$P'_{e,d}$	0.2369
$P_{g,F}$	0.5379	$P'_{g,F'}$	0.4777
$P_{i,h}$	0.7479	$P'_{i,h}$	0.7421

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	-0.1067	$\Delta P_{C,s}$	-0.0530
$\Delta P_{F,e}$	0.0106	$\Delta P_{g,F}$	0.0312

着色度 Color Code	
λ_{80}/λ_5	325/-
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	461
T_s (℃)	486
$T_{10^{14.5}}$ (℃)	420
$T_{10^{13}}$ (℃)	452
$T_{10^{7.6}}$(℃)	533
$\alpha_{-30/70℃}$(10^{-7}/K)	131
$\alpha_{100/300℃}$(10^{-7}/K)	157
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	5
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.999	0.999
2200	0.999	0.999
2000	0.999	0.999
1800	0.999	0.999
1600	0.999	0.999
1400	0.999	0.999
1200	0.999	0.999
1060	0.999	0.999
1000	0.999	0.999
950	0.999	0.999
900	0.999	0.999
850	0.999	0.999
800	0.999	0.998
700	0.999	0.998
650	0.999	0.998
600	0.999	0.998
550	0.999	0.998
500	0.999	0.998
480	0.999	0.998
460	0.999	0.998
440	0.998	0.996
420	0.998	0.997
400	0.998	0.996
390	0.997	0.995
380	0.997	0.994
370	0.996	0.992
360	0.995	0.990
350	0.989	0.978
340	0.975	0.950
330	0.950	0.902
320	0.897	0.804
310	0.809	0.654
300	0.688	0.474
290	0.544	0.296
280	0.410	0.168

机械性质 Mechanical Properties	
H_K (10^7Pa)	372
F_A	343
E (10^7Pa)	7007
G (10^7Pa)	2694
μ	0.300
B (10^{-12}/Pa)	0.69

其他性质 Other Properties	
ρ (g/cm^3)	3.70

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	-6.0	-5.9	-5.8	-5.7	-5.5	-5.4
-40～-20	-6.4	-6.3	-6.3	-6.1	-5.9	-5.8
-20～0	-6.8	-6.6	-6.4	-6.4	-6.3	-6.2
0～20	-6.9	-6.7	-6.5	-6.6	-6.4	-6.3
20～40	-7.0	-6.9	-6.9	-6.7	-6.5	-6.4
40～60	-7.2	-7.1	-7.0	-6.9	-6.8	-6.5
60～80	-7.4	-7.3	-7.2	-7.1	-7.0	-6.8
80～100	-7.5	-7.4	-7.3	-7.3	-7.1	-6.8
100～120	-7.8	-7.5	-7.4	-7.4	-7.1	-7.0
120～140	-8.2	-7.9	-7.7	-7.7	-7.4	-7.3

CDGM

H-FK61B	497816	n_d = 1.497000	υ_d = 81.61	$n_F - n_C$ = 0.006090
		n_e = 1.498454	υ_e = 81.21	$n_{F'} - n_{C'}$ = 0.006138

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	1.479458
$n_{1970.09}$	1970.09	1.482653
$n_{1529.58}$	1529.58	1.486087
$n_{1060.0}$	1060.0	1.489691
n_t	1013.98	1.490106
n_s	852.11	1.491834
n_r	706.52	1.494077
n_C	656.27	1.495139
$n_{C'}$	643.85	1.495436
n_{He-Ne}	632.8	1.495713
n_D	589.29	1.496946
n_d	587.56	1.497000
n_e	546.07	1.498454
n_F	486.13	1.501229
$n_{F'}$	479.99	1.501574
n_g	435.83	1.504504
n_h	404.66	1.507202
n_i	365.01	1.511753
$n_{313.18}$	313.18	1.520829
$n_{302.15}$	302.15	1.523472

色散公式常数 Constants of Dispersion Formula	
K_1	7.14812161E-01
L_1	1.08370689E-02
K_2	5.02984998E-01
L_2	1.32155859E-03
K_3	8.36119846E-01
L_3	1.53360674E+02

折射率温度系数常数 Constants of dn/dt	
D_0	-1.94E-05
D_1	2.54E-09
D_2	-2.83E-11
E_0	3.05E-07
E_1	-9.31E-11
λ_{TK}(μm)	0.242

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2837	$P'_{s,t}$	0.2815
$P_{C,s}$	0.5427	$P'_{C',s}$	0.5868
$P_{d,C}$	0.3056	$P'_{d,C'}$	0.2548
$P_{e,d}$	0.2388	$P'_{e,d}$	0.2369
$P_{g,F}$	0.5378	$P'_{g,F'}$	0.4774
$P_{i,h}$	0.7473	$P'_{i,h}$	0.7414

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	-0.1044	$\Delta P_{C,s}$	-0.0520
$\Delta P_{F,e}$	0.0104	$\Delta P_{g,F}$	0.0310

着色度 Color Code	
λ_{80}/λ_5	325/-
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	469
T_s (℃)	497
$T_{10^{14.5}}$ (℃)	432
$T_{10^{13}}$ (℃)	460
$T_{10^{7.6}}$(℃)	542
$\alpha_{-30/70℃}$(10^{-7}/K)	127
$\alpha_{100/300℃}$(10^{-7}/K)	156
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	3
CR	1
RC(S)	1
RA(S)	2

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.998	0.997
2200	0.999	0.998
2000	0.999	0.999
1800	0.999	0.999
1600	0.999	0.999
1400	0.999	0.999
1200	0.999	0.999
1060	0.999	0.999
1000	0.999	0.999
950	0.999	0.999
900	0.999	0.999
850	0.999	0.999
800	0.999	0.998
700	0.999	0.998
650	0.999	0.998
600	0.999	0.998
550	0.999	0.998
500	0.999	0.998
480	0.999	0.998
460	0.999	0.998
440	0.998	0.996
420	0.998	0.997
400	0.998	0.996
390	0.997	0.996
380	0.997	0.996
370	0.994	0.989
360	0.988	0.977
350	0.976	0.953
340	0.948	0.899
330	0.897	0.804
320	0.800	0.640
310	0.657	0.431
300	0.483	0.233
290	0.315	0.099
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	357
F_A	311
E (10^7Pa)	7367
G (10^7Pa)	2840
μ	0.297
B (10^{-12}/Pa)	0.71

其他性质 Other Properties	
ρ (g/cm^3)	3.68

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	-5.7	-5.6	-5.4	-5.2	-5.2	-5.0
-40～-20	-5.9	-5.7	-5.7	-5.6	-5.5	-5.2
-20～0	-6.2	-6.1	-6.1	-6.0	-5.7	-5.4
0～20	-6.5	-6.3	-6.1	-6.2	-5.9	-5.7
20～40	-6.6	-6.5	-6.2	-6.2	-6.1	-5.9
40～60	-6.6	-6.5	-6.3	-6.3	-6.2	-6.0
60～80	-6.7	-6.6	-6.6	-6.5	-6.3	-6.1
80～100	-6.9	-6.8	-6.8	-6.7	-6.5	-6.3
100～120	-7.2	-7.1	-7.1	-6.9	-6.6	-6.5
120～140	-7.4	-7.2	-7.2	-7.0	-6.8	-6.6

H-FK71	457903	n_d = 1.456500	υ_d = 90.27	$n_F - n_C$ = 0.005057
		n_e = 1.457708	υ_e = 89.85	$n_{F'} - n_{C'}$ = 0.005094

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	1.441501
$n_{1970.09}$	1970.09	1.444281
$n_{1529.58}$	1529.58	1.447265
$n_{1060.0}$	1060.0	1.450365
n_t	1013.98	1.450718
n_s	852.11	1.452180
n_r	706.52	1.454063
n_C	656.27	1.454950
$n_{C'}$	643.85	1.455198
n_{He-Ne}	632.8	1.455429
n_D	589.29	1.456455
n_d	587.56	1.456500
n_e	546.07	1.457708
n_F	486.13	1.460007
$n_{F'}$	479.99	1.460292
n_g	435.83	1.462712
n_h	404.66	1.464935
n_i	365.01	1.468677
$n_{313.18}$	313.18	1.476108
$n_{302.15}$	302.15	1.478266

色散公式常数 Constants of Dispersion Formula

K_1	2.22266610E-01
L_1	1.40651220E-02
K_2	8.80444178E-01
L_2	4.20457400E-03
K_3	7.97848915E-01
L_3	1.71029818E+02

折射率温度系数常数 Constants of dn/dt

D_0	-2.16E-05
D_1	-5.35E-09
D_2	-8.74E-12
E_0	3.15E-07
E_1	2.57E-10
λ_{TK}(μm)	0.172

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2891	$P'_{s,t}$	0.2870
$P_{C,s}$	0.5478	$P'_{C',s}$	0.5925
$P_{d,C}$	0.3065	$P'_{d,C'}$	0.2556
$P_{e,d}$	0.2389	$P'_{e,d}$	0.2371
$P_{g,F}$	0.5349	$P'_{g,F'}$	0.4751
$P_{i,h}$	0.7400	$P'_{i,h}$	0.7346

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	-0.1348	$\Delta P_{C,s}$	-0.0674
$\Delta P_{F,e}$	0.0141	$\Delta P_{g,F}$	0.0429

着色度 Color Code

λ_{80}/λ_5	320/-
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	443
T_s (℃)	468
$T_{10^{14.5}}$ (℃)	409
$T_{10^{13}}$ (℃)	435
$T_{10^{7.6}}$(℃)	505
$\alpha_{-30/70℃}$(10^{-7}/K)	136
$\alpha_{100/300℃}$(10^{-7}/K)	167
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	2
CR	1
RC(S)	1
RA(S)	2

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.996	0.992
2200	0.996	0.992
2000	0.997	0.995
1800	0.998	0.997
1600	0.998	0.996
1400	0.998	0.997
1200	0.997	0.995
1060	0.996	0.993
1000	0.996	0.992
950	0.996	0.992
900	0.996	0.992
850	0.996	0.992
800	0.997	0.995
700	0.997	0.995
650	0.997	0.995
600	0.998	0.997
550	0.999	0.999
500	0.999	0.999
480	0.999	0.998
460	0.999	0.998
440	0.997	0.995
420	0.997	0.995
400	0.999	0.998
390	0.998	0.997
380	0.998	0.997
370	0.997	0.995
360	0.993	0.986
350	0.983	0.967
340	0.962	0.925
330	0.917	0.841
320	0.834	0.695
310	0.699	0.488
300	0.516	0.266
290	0.324	0.105
280	0.176	0.031

机械性质 Mechanical Properties

H_K (10^7Pa)	344
F_A	325
E (10^7Pa)	6960
G (10^7Pa)	2675
μ	0.301
B (10^{-12}/Pa)	0.61

其他性质 Other Properties

ρ (g/cm^3)	3.63

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	-5.8	-5.5	-5.5	-5.4	-5.4	-5.2
-40～-20	-5.9	-5.9	-5.8	-5.7	-5.6	-5.4
-20～0	-6.3	-6.1	-6.1	-6.1	-6.0	-5.8
0～20	-6.6	-6.4	-6.3	-6.3	-6.2	-6.1
20～40	-6.9	-6.8	-6.6	-6.5	-6.4	-6.4
40～60	-7.1	-7.0	-6.9	-6.9	-6.7	-6.6
60～80	-7.3	-7.2	-7.2	-7.1	-6.9	-6.8
80～100	-7.6	-7.5	-7.4	-7.3	-7.2	-7.1
100～120	-7.7	-7.5	-7.5	-7.4	-7.3	-7.1
120～140	-7.9	-7.7	-7.6	-7.5	-7.4	-7.3

CDGM

H-FK95N	438945	n_d = 1.437800	υ_d = 94.52	$n_F - n_C$ = 0.004632
		n_e = 1.438906	υ_e = 94.08	$n_{F'} - n_{C'}$ = 0.004665

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	1.423863
$n_{1970.09}$	1970.09	1.426473
$n_{1529.58}$	1529.58	1.429266
$n_{1060.0}$	1060.0	1.432152
n_t	1013.98	1.432480
n_s	852.11	1.433830
n_r	706.52	1.435563
n_C	656.27	1.436378
$n_{C'}$	643.85	1.436606
n_{He-Ne}	632.8	1.436818
n_D	589.29	1.437759
n_d	587.56	1.437800
n_e	546.07	1.438906
n_F	486.13	1.441010
$n_{F'}$	479.99	1.441271
n_g	435.83	1.443481
n_h	404.66	1.445509
n_i	365.01	1.448917
$n_{313.18}$	313.18	1.455670
$n_{302.15}$	302.15	1.457628

色散公式常数 Constants of Dispersion Formula	
K_1	9.73027043E-01
L_1	4.91945800E-03
K_2	7.73632160E-02
L_2	1.82009400E-02
K_3	6.87944956E-01
L_3	1.59446090E+02

折射率温度系数常数 Constants of dn/dt	
D_0	-2.24E-05
D_1	-5.60E-09
D_2	-9.96E-12
E_0	3.32E-07
E_1	4.01E-12
λ_{TK}(μm)	0.182

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2915	$P'_{s,t}$	0.2894
$P_{C,s}$	0.5501	$P'_{C',s}$	0.5951
$P_{d,C}$	0.3070	$P'_{d,C'}$	0.2559
$P_{e,d}$	0.2388	$P'_{e,d}$	0.2371
$P_{g,F}$	0.5335	$P'_{g,F'}$	0.4737
$P_{i,h}$	0.7358	$P'_{i,h}$	0.7305

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	-0.1501	$\Delta P_{C,s}$	-0.0751
$\Delta P_{F,e}$	0.0160	$\Delta P_{g,F}$	0.0487

着色度 Color Code	
λ_{80}/λ_5	310/-
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	411
T_s (℃)	448
$T_{10}^{14.5}$ (℃)	381
T_{10}^{13} (℃)	404
$T_{10}^{7.6}$(℃)	485
$\alpha_{-30/70℃}$(10^{-7}/K)	144
$\alpha_{100/300℃}$(10^{-7}/K)	170
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	2
CR	1
RC(S)	1
RA(S)	2

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.999	0.998
2200	0.999	0.999
2000	0.999	0.999
1800	0.999	0.999
1600	0.999	0.999
1400	0.999	0.999
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.999	0.998
650	0.999	0.998
600	0.999	0.998
550	0.999	0.998
500	0.999	0.998
480	0.998	0.997
460	0.998	0.997
440	0.998	0.996
420	0.998	0.996
400	0.998	0.996
390	0.998	0.996
380	0.997	0.995
370	0.997	0.994
360	0.994	0.988
350	0.991	0.983
340	0.980	0.961
330	0.962	0.926
320	0.925	0.856
310	0.855	0.731
300	0.752	0.566
290	0.620	0.384
280	0.488	0.238

机械性质 Mechanical Properties	
H_K (10^7Pa)	347
F_A	355
E (10^7Pa)	7195
G (10^7Pa)	2764
μ	0.302
B (10^{-12}/Pa)	

其他性质 Other Properties	
ρ (g/cm^3)	3.52

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	-5.5	-5.4	-5.4	-5.4	-5.2	-5.1
-40～-20	-6.0	-5.8	-5.7	-5.7	-5.5	-5.4
-20～0	-6.4	-6.1	-6.1	-6.0	-6.0	-5.9
0～20	-6.8	-6.6	-6.5	-6.4	-6.3	-6.1
20～40	-6.9	-6.7	-6.7	-6.5	-6.5	-6.4
40～60	-7.1	-7.0	-7.0	-6.9	-6.8	-6.6
60～80	-7.2	-7.3	-7.2	-7.1	-6.8	-6.8
80～100	-7.6	-7.5	-7.4	-7.3	-7.3	-7.2
100～120	-7.9	-7.8	-7.6	-7.6	-7.4	-7.3
120～140	-8.0	-7.8	-7.8	-7.7	-7.5	-7.3

H-QK1	470669	n_d = 1.47047	υ_d = 66.88	$n_F - n_C$ = 0.007035
		n_e = 1.47214	υ_e = 66.72	$n_{F'} - n_{C'}$ = 0.007077

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.46202
n_s	852.11	1.46427
n_r	706.52	1.46703
n_C	656.27	1.46829
$n_{C'}$	643.85	1.46864
n_{He-Ne}	632.8	1.46897
n_D	589.29	1.47040
n_d	587.56	1.47047
n_e	546.07	1.47214
n_F	486.13	1.47533
$n_{F'}$	479.99	1.47572
n_g	435.83	1.47907
n_h	404.66	1.48215
n_i	365.01	1.48736
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

A_0	2.1373281E+00
A_1	-8.9417677E-03
A_2	9.6701099E-03
A_3	-6.3109312E-05
A_4	2.6271358E-05
A_5	-1.2715226E-06

折射率温度系数常数 Constants of dn/dt

D_0	-4.33E-06
D_1	2.75E-08
D_2	-4.55E-11
E_0	2.96E-07
E_1	-7.40E-10
λ_{TK}(μm)	0.257

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.3198	$P'_{s,t}$	0.3179
$P_{C,s}$	0.5714	$P'_{C',s}$	0.6175
$P_{d,C}$	0.3099	$P'_{d,C'}$	0.2586
$P_{e,d}$	0.2374	$P'_{e,d}$	0.2360
$P_{g,F}$	0.5316	$P'_{g,F'}$	0.4734
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	0.0299	$\Delta P_{C,s}$	0.0116
$\Delta P_{F,e}$	0.0002	$\Delta P_{g,F}$	-0.0002

着色度 Color Code

λ_{80}/λ_5	315/280
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	399
T_s (℃)	497
$T_{10^{14.5}}$ (℃)	365
$T_{10^{13}}$ (℃)	411
$T_{10^{7.6}}$(℃)	653
$\alpha_{-30/70℃}$(10^{-7}/K)	73
$\alpha_{100/300℃}$(10^{-7}/K)	85
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	5
D_A	5
CR	3
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.849	0.722
2200	0.936	0.876
2000	0.983	0.966
1800	0.995	0.991
1600	0.997	0.993
1400	0.990	0.981
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.999	0.998
650	0.999	0.998
600	0.999	0.998
550	0.999	0.998
500	0.999	0.998
480	0.998	0.997
460	0.999	0.998
440	0.998	0.996
420	0.998	0.996
400	0.999	0.998
390	0.998	0.997
380	0.998	0.996
370	0.998	0.997
360	0.997	0.993
350	0.993	0.986
340	0.985	0.971
330	0.973	0.946
320	0.940	0.883
310	0.877	0.769
300	0.767	0.588
290	0.592	0.351
280	0.373	0.139

机械性质 Mechanical Properties

H_K (10^7Pa)	374
F_A	83
E (10^7Pa)	4828
G (10^7Pa)	1955
μ	0.235
B (10^{-12}/Pa)	3.76

其他性质 Other Properties

ρ (g/cm^3)	2.30

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	-0.6	-0.4	-0.4	-0.3	-0.3	0.3
-20～0	-0.4	-0.2	-0.2	-0.2	0.2	0.2
0～20	-0.4	-0.1	-0.1	0.2	0.2	0.8
20～40	-0.3	0.2	0.2	0.3	0.3	0.8
40～60	0.1	0.3	0.4	0.6	0.6	0.8
60～80	0.2	0.4	0.6	0.6	0.8	0.9
80～100						
100～120						
120～140						

CDGM

H-QK3L	487704	n_d = 1.487490	υ_d = 70.44	$n_F - n_C$ = 0.006921
		n_e = 1.489143	υ_e = 70.26	$n_{F'} - n_{C'}$ = 0.006962

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	1.461770
$n_{1970.09}$	1970.09	1.467372
$n_{1529.58}$	1529.58	1.473126
$n_{1060.0}$	1060.0	1.478559
n_t	1013.98	1.479127
n_s	852.11	1.481377
n_r	706.52	1.484102
n_C	656.27	1.485347
$n_{C'}$	643.85	1.485692
n_{He-Ne}	632.8	1.486012
n_D	589.29	1.487428
n_d	587.56	1.487490
n_e	546.07	1.489143
n_F	486.13	1.492268
$n_{F'}$	479.99	1.492654
n_g	435.83	1.495931
n_h	404.66	1.498939
n_i	365.01	1.504011
$n_{313.18}$	313.18	1.514137
$n_{302.15}$	302.15	1.517093

色散公式常数 Constants of Dispersion Formula	
K_1	6.01737491E-01
L_1	1.25749740E-02
K_2	8.58737004E-01
L_2	9.23325663E+01
K_3	5.86761501E-01
L_3	2.68750900E-03

折射率温度系数常数 Constants of dn/dt	
D_0	-9.26E-06
D_1	1.71E-08
D_2	-1.54E-11
E_0	3.26E-07
E_1	5.95E-10
λ_{TK}(μm)	0.187

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.3251	$P'_{s,t}$	0.3232
$P_{C,s}$	0.5736	$P'_{C',s}$	0.6198
$P_{d,C}$	0.3096	$P'_{d,C'}$	0.2583
$P_{e,d}$	0.2388	$P'_{e,d}$	0.2374
$P_{g,F}$	0.5293	$P'_{g,F'}$	0.4707
$P_{i,h}$	0.7328	$P'_{i,h}$	0.7285

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0205	$\Delta P_{C,s}$	0.0053
$\Delta P_{F,e}$	0.0002	$\Delta P_{g,F}$	0.0035

着色度 Color Code	
λ_{80}/λ_5	305/270
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	475
T_s (℃)	569
$T_{10^{14.5}}$ (℃)	432
$T_{10^{13}}$ (℃)	466
$T_{10^{7.6}}$(℃)	674
$\alpha_{-30/70℃}$(10^{-7}/K)	92
$\alpha_{100/300℃}$(10^{-7}/K)	102
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	2
D_A	4
CR	2
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.918	0.844
2200	0.938	0.879
2000	0.989	0.977
1800	0.994	0.989
1600	0.996	0.992
1400	0.990	0.980
1200	0.999	0.998
1060	0.999	0.999
1000	0.999	0.999
950	0.999	0.999
900	0.999	0.999
850	0.999	0.999
800	0.999	0.998
700	0.999	0.998
650	0.999	0.998
600	0.998	0.997
550	0.998	0.996
500	0.998	0.996
480	0.998	0.996
460	0.998	0.996
440	0.997	0.995
420	0.997	0.995
400	0.998	0.996
390	0.997	0.995
380	0.997	0.994
370	0.996	0.993
360	0.996	0.993
350	0.994	0.989
340	0.990	0.980
330	0.987	0.974
320	0.974	0.948
310	0.945	0.893
300	0.868	0.753
290	0.688	0.474
280	0.385	0.148

机械性质 Mechanical Properties	
H_K (10^7Pa)	520
F_A	93
E (10^7Pa)	6230
G (10^7Pa)	2540
μ	0.227
B (10^{-12}/Pa)	2.80

其他性质 Other Properties	
ρ (g/cm^3)	2.43

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	-2.6	-2.3	-2.2	-2.2	-2.0	-1.9
-40～-20	-2.5	-2.2	-2.1	-2.1	-2.0	-1.8
-20～0	-2.3	-2.1	-2.0	-2.0	-1.9	-1.7
0～20	-2.1	-2.0	-2.0	-1.9	-1.8	-1.6
20～40	-2.1	-1.9	-1.8	-1.8	-1.6	-1.5
40～60	-2.1	-1.9	-1.7	-1.7	-1.5	-1.4
60～80	-1.9	-1.9	-1.7	-1.6	-1.4	-1.1
80～100	-1.7	-1.6	-1.4	-1.3	-1.1	-0.8
100～120	-1.7	-1.3	-1.2	-1.2	-0.9	-0.7
120～140	-1.5	-1.1	-1.1	-1.1	-0.8	-0.6

CDGM

H-K1	500621	n_d = 1.49967	υ_d = 62.07	$n_F - n_C$ = 0.008050
		n_e = 1.50159	υ_e = 61.85	$n_{F'} - n_{C'}$ = 0.008110

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.49047
n_s	852.11	1.49282
n_r	706.52	1.49581
n_C	656.27	1.49722
$n_{C'}$	643.85	1.49761
n_{He-Ne}	632.8	1.49797
n_D	589.29	1.49960
n_d	587.56	1.49967
n_e	546.07	1.50159
n_F	486.13	1.50527
$n_{F'}$	479.99	1.50572
n_g	435.83	1.50961
n_h	404.66	1.51321
n_i	365.01	1.51935
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

A_0	2.2199551E+00
A_1	-8.5435235E-03
A_2	1.0369856E-02
A_3	2.7324096E-04
A_4	-1.5873606E-05
A_5	9.7323557E-07

折射率温度系数常数 Constants of dn/dt

D_0	-4.14E-06
D_1	1.96E-08
D_2	-3.87E-11
E_0	5.49E-07
E_1	-2.63E-10
λ_{TK}(μm)	0.161

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2919	$P'_{s,t}$	0.2898
$P_{C,s}$	0.5466	$P'_{C',s}$	0.5906
$P_{d,C}$	0.3043	$P'_{d,C'}$	0.2540
$P_{e,d}$	0.2385	$P'_{e,d}$	0.2367
$P_{g,F}$	0.5391	$P'_{g,F'}$	0.4797
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	-0.0002	$\Delta P_{C,s}$	-0.0019
$\Delta P_{F,e}$	0.0013	$\Delta P_{g,F}$	-0.0009

着色度 Color Code

λ_{80}/λ_5	320/290
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	465
T_s (℃)	549
$T_{10^{14.5}}$ (℃)	420
$T_{10^{13}}$ (℃)	463
$T_{10^{7.6}}$(℃)	668
$\alpha_{-30/70℃}$(10^{-7}/K)	87
$\alpha_{100/300℃}$(10^{-7}/K)	104
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	2
D_A	1
CR	3
RC(S)	2
RA(S)	1

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.879	0.772
2200	0.917	0.841
2000	0.959	0.919
1800	0.983	0.966
1600	0.996	0.992
1400	0.998	0.996
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.996
700	0.998	0.996
650	0.998	0.996
600	0.998	0.996
550	0.998	0.997
500	0.998	0.997
480	0.999	0.998
460	0.999	0.998
440	0.998	0.997
420	0.998	0.997
400	0.999	0.998
390	0.999	0.998
380	0.998	0.997
370	0.998	0.996
360	0.997	0.994
350	0.993	0.987
340	0.985	0.971
330	0.965	0.932
320	0.912	0.832
310	0.780	0.609
300	0.506	0.256
290	0.182	0.033
280		

机械性质 Mechanical Properties

H_K (10^7Pa)	440
F_A	91
E (10^7Pa)	6542
G (10^7Pa)	2682
μ	0.220
B (10^{-12}/Pa)	2.79

其他性质 Other Properties

ρ (g/cm^3)	2.47

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	-0.3	0.0	0.1	0.2	0.5	0.9
-20～0	-0.3	0.0	0.1	0.4	0.7	1.0
0～20	-0.1	0.1	0.4	0.4	0.7	1.0
20～40	0.0	0.2	0.5	0.6	0.9	1.0
40～60	0.0	0.6	0.7	0.8	1.0	1.2
60～80	0.0	0.7	0.7	0.8	1.0	1.4
80～100						
100～120						
120～140						

CDGM

H-K2	500660	n_d = 1.50047	υ_d = 66.02	$n_F - n_C$ = 0.007580
		n_e = 1.50228	υ_e = 65.85	$n_{F'} - n_{C'}$ = 0.007628

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.49143
n_s	852.11	1.49383
n_r	706.52	1.49678
n_C	656.27	1.49813
$n_{C'}$	643.85	1.49850
n_{He-Ne}	632.8	1.49885
n_D	589.29	1.50040
n_d	587.56	1.50047
n_e	546.07	1.50228
n_F	486.13	1.50571
$n_{F'}$	479.99	1.50613
n_g	435.83	1.50972
n_h	404.66	1.51302
n_i	365.01	1.51861
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	2.2252218E+00
A_1	-1.0126267E-02
A_2	9.5471953E-03
A_3	3.1014674E-04
A_4	-2.8435987E-05
A_5	1.6363217E-06

折射率温度系数常数 Constants of dn/dt	
D_0	3.11E-06
D_1	2.16E-08
D_2	-5.94E-11
E_0	2.96E-07
E_1	7.48E-10
λ_{TK}(μm)	0.256

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.3166	$P'_{s,t}$	0.3146
$P_{C,s}$	0.5673	$P'_{C',s}$	0.6122
$P_{d,C}$	0.3087	$P'_{d,C'}$	0.2583
$P_{e,d}$	0.2388	$P'_{e,d}$	0.2373
$P_{g,F}$	0.5290	$P'_{g,F'}$	0.4706
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0265	$\Delta P_{C,s}$	0.0094
$\Delta P_{F,e}$	-0.0012	$\Delta P_{g,F}$	-0.0042

着色度 Color Code	
λ_{80}/λ_5	310/280
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	556
T_s (℃)	648
$T_{10}^{14.5}$ (℃)	508
T_{10}^{13} (℃)	557
$T_{10}^{7.6}$(℃)	759
$\alpha_{-30/70℃}$(10^{-7}/K)	55
$\alpha_{100/300℃}$(10^{-7}/K)	65
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	2
D_A	1
CR	1
RC(S)	1
RA(S)	1

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.912	0.832
2200	0.936	0.875
2000	0.989	0.978
1800	0.996	0.992
1600	0.999	0.998
1400	0.990	0.979
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.999	0.997
650	0.998	0.996
600	0.998	0.996
550	0.998	0.997
500	0.998	0.996
480	0.998	0.995
460	0.997	0.995
440	0.997	0.994
420	0.997	0.995
400	0.998	0.996
390	0.997	0.995
380	0.995	0.990
370	0.996	0.992
360	0.995	0.991
350	0.993	0.986
340	0.988	0.976
330	0.978	0.957
320	0.957	0.916
310	0.906	0.820
300	0.790	0.620
290	0.560	0.310
280	0.260	0.070

机械性质 Mechanical Properties	
H_K (10^7Pa)	534
F_A	83
E (10^7Pa)	7249
G (10^7Pa)	3008
μ	0.204
B (10^{-12}/Pa)	3.12

其他性质 Other Properties	
ρ (g/cm^3)	2.42

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	1.8	2.0	2.5	2.5	2.6	3.2
-20～0	2.8	2.9	3.0	3.2	3.3	3.3
0～20	2.7	2.8	3.0	3.0	3.4	3.5
20～40	2.7	3.1	3.2	3.3	3.5	4.0
40～60	3.1	3.4	3.4	3.5	3.9	3.9
60～80	3.2	3.6	3.7	3.8	4.0	4.5
80～100						
100～120						
120～140						

CDGM

H-K3	505647	n_d = 1.50463	υ_d = 64.72	$n_F - n_C$ = 0.007797
		n_e = 1.50649	υ_e = 64.55	$n_{F'} - n_{C'}$ = 0.007846

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.49528
n_s	852.11	1.49778
n_r	706.52	1.50083
n_C	656.27	1.50222
$n_{C'}$	643.85	1.50261
n_{He-Ne}	632.8	1.50297
n_D	589.29	1.50456
n_d	587.56	1.50463
n_e	546.07	1.50649
n_F	486.13	1.51002
$n_{F'}$	479.99	1.51045
n_g	435.83	1.51416
n_h	404.66	1.51759
n_i	365.01	1.52340
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	2.2356892E+00
A_1	-1.0132278E-02
A_2	1.0921954E-02
A_3	-5.7727212E-05
A_4	2.6872011E-05
A_5	-1.1604147E-06

折射率温度系数常数 Constants of dn/dt	
D_0	2.53E-06
D_1	1.95E-08
D_2	-5.32E-11
E_0	4.02E-07
E_1	6.25E-10
λ_{TK}(μm)	0.120

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.3206	$P'_{s,t}$	0.3186
$P_{C,s}$	0.5694	$P'_{C',s}$	0.6156
$P_{d,C}$	0.3091	$P'_{d,C'}$	0.2575
$P_{e,d}$	0.2386	$P'_{e,d}$	0.2371
$P_{g,F}$	0.5310	$P'_{g,F'}$	0.4729
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0389	$\Delta P_{C,s}$	0.0147
$\Delta P_{F,e}$	-0.0016	$\Delta P_{g,F}$	-0.0045

着色度 Color Code	
λ_{80}/λ_5	330/300
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	537
T_s (℃)	609
$T_{10}^{14.5}$ (℃)	481
T_{10}^{13} (℃)	526
$T_{10}^{7.6}$(℃)	712
$\alpha_{-30/70℃}$(10^{-7}/K)	58
$\alpha_{100/300℃}$(10^{-7}/K)	70
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	3
D_A	4
CR	1
RC(S)	2
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.840	0.705
2200	0.908	0.825
2000	0.978	0.957
1800	0.991	0.982
1600	0.997	0.994
1400	0.984	0.968
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.996
700	0.998	0.996
650	0.998	0.996
600	0.998	0.996
550	0.998	0.996
500	0.998	0.996
480	0.998	0.995
460	0.997	0.995
440	0.997	0.995
420	0.997	0.995
400	0.998	0.995
390	0.997	0.994
380	0.994	0.989
370	0.994	0.989
360	0.991	0.983
350	0.984	0.967
340	0.964	0.930
330	0.913	0.834
320	0.781	0.611
310	0.497	0.247
300	0.148	0.022
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	548
F_A	81
E (10^7Pa)	6830
G (10^7Pa)	2806
μ	0.217
B (10^{-12}/Pa)	

其他性质 Other Properties	
ρ (g/cm^3)	2.40

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	1.9	2.4	2.5	2.5	2.8	3.0
-20～0	2.5	2.6	2.8	2.8	3.0	3.1
0～20	2.6	2.7	2.7	2.9	3.2	3.5
20～40	2.8	3.0	3.0	3.0	3.2	3.5
40～60	2.7	3.2	3.2	3.6	3.6	3.6
60～80	2.6	3.3	3.4	3.4	3.6	4.1
80～100						
100～120						
120～140						

K4A	508611	n_d = 1.50802	υ_d = 61.05	$n_F - n_C$ = 0.008321
		n_e = 1.51000	υ_e = 60.87	$n_{F'} - n_{C'}$ = 0.008378

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.49825
n_s	852.11	1.50079
n_r	706.52	1.50398
n_C	656.27	1.50546
$n_{C'}$	643.85	1.50587
n_{He-Ne}	632.8	1.50625
n_D	589.29	1.50795
n_d	587.56	1.50802
n_e	546.07	1.51000
n_F	486.13	1.51378
$n_{F'}$	479.99	1.51425
n_g	435.83	1.51825
n_h	404.66	1.52195
n_i	365.01	1.52827
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

A_0	2.2418749E+00
A_1	-8.9193215E-03
A_2	1.2625174E-02
A_3	-2.9859874E-04
A_4	5.9564884E-05
A_5	-2.5863323E-06

折射率温度系数常数 Constants of dn/dt

D_0	7.37E-06
D_1	2.20E-08
D_2	-6.81E-12
E_0	4.56E-07
E_1	4.32E-10
λ_{TK}(μm)	0.199

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.3053	$P'_{s,t}$	0.3032
$P_{C,s}$	0.5612	$P'_{C',s}$	0.6063
$P_{d,C}$	0.3077	$P'_{d,C'}$	0.2566
$P_{e,d}$	0.2380	$P'_{e,d}$	0.2363
$P_{g,F}$	0.5372	$P'_{g,F'}$	0.4774
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	0.0325	$\Delta P_{C,s}$	0.0151
$\Delta P_{F,e}$	-0.0021	$\Delta P_{g,F}$	-0.0045

着色度 Color Code

λ_{80}/λ_5	355/320
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	552
T_s (℃)	624
$T_{10}^{14.5}$ (℃)	497
T_{10}^{13} (℃)	541
$T_{10}^{7.6}$(℃)	733
$\alpha_{-30/70℃}$(10^{-7}/K)	47
$\alpha_{100/300℃}$(10^{-7}/K)	52
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	2
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.870	0.760
2200	0.934	0.872
2000	0.985	0.970
1800	0.997	0.994
1600	0.997	0.995
1400	0.989	0.978
1200	0.999	0.998
1060	0.998	0.997
1000	0.998	0.997
950	0.998	0.997
900	0.998	0.997
850	0.998	0.997
800	0.998	0.996
700	0.998	0.996
650	0.998	0.996
600	0.997	0.995
550	0.997	0.995
500	0.997	0.993
480	0.996	0.992
460	0.996	0.991
440	0.995	0.989
420	0.994	0.987
400	0.992	0.984
390	0.988	0.977
380	0.980	0.961
370	0.970	0.940
360	0.940	0.890
350	0.880	0.780
340	0.760	0.570
330	0.500	0.250
320	0.170	0.030
310		
300		
290		
280		

机械性质 Mechanical Properties

H_K (10^7Pa)	524
F_A	65
E (10^7Pa)	6927
G (10^7Pa)	2843
μ	0.218
B (10^{-12}/Pa)	3.55

其他性质 Other Properties

ρ (g/cm^3)	2.43

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	4.4	4.6	4.9	5.2	5.3	5.5
-20～0	4.4	4.7	4.9	5.2	5.3	5.5
0～20	4.6	4.7	4.9	5.2	5.5	5.8
20～40	4.8	5.1	5.3	5.5	5.7	6.1
40～60	4.9	5.3	5.6	5.7	5.9	6.3
60～80	5.0	5.5	5.6	5.9	6.2	6.4
80～100						
100～120						
120～140						

H-K5	510634	n_d = 1.51007	υ_d = 63.36	$n_F - n_C$ = 0.008050
		n_e = 1.51199	υ_e = 63.13	$n_{F'} - n_{C'}$ = 0.008110

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.50069
n_s	852.11	1.50312
n_r	706.52	1.50618
n_C	656.27	1.50760
$n_{C'}$	643.85	1.50800
n_{He-Ne}	632.8	1.50837
n_D	589.29	1.51000
n_d	587.56	1.51007
n_e	546.07	1.51199
n_F	486.13	1.51565
$n_{F'}$	479.99	1.51611
n_g	435.83	1.51999
n_h	404.66	1.52356
n_i	365.01	1.52962
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

A_0	2.2501836E+00
A_1	-8.9406616E-03
A_2	1.1431783E-02
A_3	-7.3339328E-05
A_4	3.4961670E-05
A_5	-1.8010078E-06

折射率温度系数常数 Constants of dn/dt

D_0	-2.53E-07
D_1	1.48E-08
D_2	-9.74E-12
E_0	4.45E-07
E_1	7.77E-10
λ_{TK}(μm)	0.202

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.3019	$P'_{s,t}$	0.2996
$P_{C,s}$	0.5565	$P'_{C',s}$	0.6017
$P_{d,C}$	0.3068	$P'_{d,C'}$	0.2552
$P_{e,d}$	0.2384	$P'_{e,d}$	0.2366
$P_{g,F}$	0.5390	$P'_{g,F'}$	0.4783
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	0.0136	$\Delta P_{C,s}$	0.0050
$\Delta P_{F,e}$	-0.0005	$\Delta P_{g,F}$	0.0012

着色度 Color Code

λ_{80}/λ_5	320/285
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	558
T_s (℃)	633
$T_{10}^{14.5}$ (℃)	497
T_{10}^{13} (℃)	548
$T_{10}^{7.6}$(℃)	733
$\alpha_{-30/70℃}$(10^{-7}/K)	75
$\alpha_{100/300℃}$(10^{-7}/K)	89
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	3
D_A	1
CR	1
RC(S)	3
RA(S)	1

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.890	0.790
2200	0.914	0.835
2000	0.964	0.929
1800	0.985	0.971
1600	0.997	0.995
1400	0.998	0.997
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.999	0.998
650	0.998	0.997
600	0.998	0.997
550	0.998	0.997
500	0.998	0.996
480	0.998	0.996
460	0.997	0.995
440	0.997	0.995
420	0.997	0.995
400	0.997	0.995
390	0.997	0.995
380	0.997	0.994
370	0.996	0.993
360	0.995	0.991
350	0.991	0.983
340	0.983	0.967
330	0.963	0.927
320	0.914	0.836
310	0.800	0.640
300	0.560	0.310
290	0.240	0.060
280		

机械性质 Mechanical Properties

H_K (10^7Pa)	487
F_A	84
E (10^7Pa)	7519
G (10^7Pa)	3128
μ	0.202
B (10^{-12}/Pa)	2.67

其他性质 Other Properties

ρ (g/cm^3)	2.47

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	1.5	1.7	2.0	2.2	2.3	2.4
-20～0	1.3	1.6	1.8	2.0	2.2	2.4
0～20	1.5	1.6	1.8	1.9	2.2	2.4
20～40	1.4	1.9	2.0	2.2	2.5	2.9
40～60	1.7	2.1	2.1	2.3	2.6	2.8
60～80	1.7	2.0	2.1	2.2	2.5	2.9
80～100						
100～120						
120～140						

CDGM

H-K6	511605	n_d = 1.51112	υ_d = 60.46	$n_F - n_C$ = 0.008454
		n_e = 1.51314	υ_e = 60.21	$n_{F'} - n_{C'}$ = 0.008523

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.50152
n_s	852.11	1.50394
n_r	706.52	1.50707
n_C	656.27	1.50855
$n_{C'}$	643.85	1.50896
n_{He-Ne}	632.8	1.50934
n_D	589.29	1.51105
n_d	587.56	1.51112
n_e	546.07	1.51314
n_F	486.13	1.51700
$n_{F'}$	479.99	1.51748
n_g	435.83	1.52159
n_h	404.66	1.52540
n_i	365.01	1.53188
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

A_0	2.2502452E+00
A_1	-7.5871482E-03
A_2	1.2630378E-02
A_3	-2.2900182E-04
A_4	5.8022594E-05
A_5	-2.8409460E-06

折射率温度系数常数 Constants of dn/dt

D_0	-2.84E-06
D_1	1.68E-08
D_2	-6.96E-11
E_0	4.72E-07
E_1	-6.38E-11
λ_{TK}(μm)	0.217

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2863	$P'_{s,t}$	0.2839
$P_{C,s}$	0.5453	$P'_{C',s}$	0.5890
$P_{d,C}$	0.3040	$P'_{d,C'}$	0.2534
$P_{e,d}$	0.2389	$P'_{e,d}$	0.2370
$P_{g,F}$	0.5427	$P'_{g,F'}$	0.4820
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	0.0004	$\Delta P_{C,s}$	0.0006
$\Delta P_{F,e}$	0.0000	$\Delta P_{g,F}$	0.0000

着色度 Color Code

λ_{80}/λ_5	320/290
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	530
T_s (℃)	619
$T_{10^{14.5}}$ (℃)	473
$T_{10^{13}}$ (℃)	522
$T_{10^{7.6}}$(℃)	723
$\alpha_{-30/70℃}$(10^{-7}/K)	85
$\alpha_{100/300℃}$(10^{-7}/K)	99
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	2
D_A	1
CR	2
RC(S)	3
RA(S)	1

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.861	0.741
2200	0.898	0.807
2000	0.951	0.904
1800	0.978	0.957
1600	0.995	0.990
1400	0.996	0.992
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.999	0.998
650	0.999	0.998
600	0.999	0.998
550	0.999	0.998
500	0.998	0.997
480	0.998	0.997
460	0.998	0.997
440	0.998	0.997
420	0.998	0.997
400	0.998	0.997
390	0.998	0.997
380	0.998	0.996
370	0.998	0.996
360	0.997	0.994
350	0.994	0.989
340	0.990	0.981
330	0.982	0.964
320	0.951	0.905
310	0.875	0.766
300	0.696	0.485
290	0.404	0.163
280		

机械性质 Mechanical Properties

H_K (10^7Pa)	464
F_A	88
E (10^7Pa)	6724
G (10^7Pa)	2758
μ	0.219
B (10^{-12}/Pa)	3.05

其他性质 Other Properties

ρ (g/cm^3)	2.53

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	0.1	0.5	0.7	0.8	1.0	1.3
-20～0	0.1	0.6	0.7	0.8	1.2	1.3
0～20	0.3	0.8	0.8	1.0	1.4	1.7
20～40	0.5	0.8	0.8	1.0	1.4	1.7
40～60	0.6	0.8	0.8	1.1	1.4	1.7
60～80	0.6	0.8	1.1	1.2	1.5	1.7
80～100						
100～120						
120～140						

CDGM

H-K7	515606	n_d = 1.51478	υ_d = 60.63	$n_F - n_C$ = 0.008490
		n_e = 1.51681	υ_e = 60.33	$n_{F'} - n_{C'}$ = 0.008566

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.50513
n_s	852.11	1.50754
n_r	706.52	1.51070
n_C	656.27	1.51218
$n_{C'}$	643.85	1.51259
n_{He-Ne}	632.8	1.51298
n_D	589.29	1.51470
n_d	587.56	1.51478
n_e	546.07	1.51681
n_F	486.13	1.52067
$n_{F'}$	479.99	1.52116
n_g	435.83	1.52528
n_h	404.66	1.52910
n_i	365.01	1.53561
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

A_0	2.2597882E+00
A_1	-6.9388593E-03
A_2	1.3448855E-02
A_3	-4.0590436E-04
A_4	7.6441112E-05
A_5	-3.5192814E-06

折射率温度系数常数 Constants of dn/dt

D_0	-3.47E-06
D_1	1.04E-08
D_2	-1.23E-11
E_0	5.23E-07
E_1	2.98E-10
λ_{TK}(μm)	0.190

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2839	$P'_{s,t}$	0.2813
$P_{C,s}$	0.5465	$P'_{C',s}$	0.5895
$P_{d,C}$	0.3062	$P'_{d,C'}$	0.2557
$P_{e,d}$	0.2391	$P'_{e,d}$	0.2370
$P_{g,F}$	0.5432	$P'_{g,F'}$	0.4812
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	-0.0016	$\Delta P_{C,s}$	0.0014
$\Delta P_{F,e}$	-0.0019	$\Delta P_{g,F}$	0.0008

着色度 Color Code

λ_{80}/λ_5	320/290
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	535
T_s (℃)	613
$T_{10^{14.5}}$ (℃)	476
$T_{10^{13}}$ (℃)	523
$T_{10^{7.6}}$(℃)	717
$\alpha_{-30/70℃}$(10^{-7}/K)	85
$\alpha_{100/300℃}$(10^{-7}/K)	100
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	1
CR	2
RC(S)	3
RA(S)	1

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.857	0.735
2200	0.896	0.803
2000	0.950	0.903
1800	0.978	0.957
1600	0.995	0.989
1400	0.995	0.991
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.999	0.998
650	0.999	0.998
600	0.998	0.996
550	0.998	0.997
500	0.998	0.996
480	0.998	0.996
460	0.998	0.996
440	0.998	0.996
420	0.998	0.996
400	0.998	0.997
390	0.998	0.996
380	0.996	0.993
370	0.996	0.993
360	0.995	0.990
350	0.992	0.984
340	0.985	0.970
330	0.973	0.947
320	0.938	0.879
310	0.849	0.721
300	0.655	0.429
290	0.358	0.128
280		

机械性质 Mechanical Properties

H_K (10^7Pa)	468
F_A	85
E (10^7Pa)	6794
G (10^7Pa)	2776
μ	0.224
B (10^{-12}/Pa)	2.90

其他性质 Other Properties

ρ (g/cm^3)	2.54

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	0.4	0.5	0.8	0.8	0.9	1.6
-20～0	0.1	0.8	0.9	1.0	1.3	1.3
0～20	0.1	0.5	0.6	0.8	1.1	1.4
20～40	0.2	0.3	0.6	0.8	1.1	1.5
40～60	0.2	0.7	0.7	0.9	1.1	1.4
60～80	0.2	0.6	0.7	1.0	1.1	1.6
80～100						
100～120						
120～140						

H-K8	516568	n_d = 1.51602	υ_d = 56.79	$n_F - n_C$ = 0.009086
		n_e = 1.51818	υ_e = 56.57	$n_{F'} - n_{C'}$ = 0.009160

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.50586
n_s	852.11	1.50839
n_r	706.52	1.51169
n_C	656.27	1.51326
$n_{C'}$	643.85	1.51370
n_{He-Ne}	632.8	1.51411
n_D	589.29	1.51594
n_d	587.56	1.51602
n_e	546.07	1.51818
n_F	486.13	1.52235
$n_{F'}$	479.99	1.52286
n_g	435.83	1.52731
n_h	404.66	1.53144
n_i	365.01	1.53853
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	2.2628916E+00
A_1	-7.7054489E-03
A_2	1.3003391E-02
A_3	-3.1039305E-05
A_4	3.1668687E-05
A_5	-1.2724215E-06

折射率温度系数常数 Constants of dn/dt	
D_0	8.99E-07
D_1	1.86E-08
D_2	2.68E-12
E_0	5.14E-07
E_1	2.06E-10
λ_{TK}(μm)	0.246

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2785	$P'_{s,t}$	0.2762
$P_{C,s}$	0.5360	$P'_{C',s}$	0.5797
$P_{d,C}$	0.3038	$P'_{d,C'}$	0.2533
$P_{e,d}$	0.2377	$P'_{e,d}$	0.2358
$P_{g,F}$	0.5459	$P'_{g,F'}$	0.4858
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0006	$\Delta P_{C,s}$	0.0000
$\Delta P_{F,e}$	0.0003	$\Delta P_{g,F}$	-0.0031

着色度 Color Code	
λ_{80}/λ_5	340/310
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	512
T_s (℃)	570
$T_{10}^{14.5}$ (℃)	467
T_{10}^{13} (℃)	499
$T_{10}^{7.6}$(℃)	684
$\alpha_{-30/70℃}$(10^{-7}/K)	87
$\alpha_{100/300℃}$(10^{-7}/K)	97
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	2
D_A	1
CR	2
RC(S)	3
RA(S)	1

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.908	0.824
2200	0.924	0.854
2000	0.966	0.933
1800	0.984	0.968
1600	0.996	0.991
1400	0.996	0.992
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.997
700	0.998	0.996
650	0.998	0.996
600	0.997	0.995
550	0.997	0.995
500	0.997	0.995
480	0.997	0.994
460	0.997	0.994
440	0.996	0.993
420	0.996	0.993
400	0.996	0.992
390	0.995	0.990
380	0.992	0.985
370	0.988	0.977
360	0.978	0.956
350	0.954	0.911
340	0.901	0.811
330	0.776	0.602
320	0.519	0.269
310	0.192	0.037
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	435
F_A	75
E (10^7Pa)	6779
G (10^7Pa)	2772
μ	0.223
B (10^{-12}/Pa)	3.01

其他性质 Other Properties	
ρ (g/cm^3)	2.58

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	2.0	2.1	2.5	2.5	2.8	3.4
-20～0	1.8	2.4	2.6	2.7	2.9	3.4
0～20	2.0	2.2	2.5	2.6	3.0	3.5
20～40	2.1	2.4	2.6	2.8	3.2	3.7
40～60	2.1	2.7	2.8	3.1	3.5	3.8
60～80	2.3	2.8	3.0	3.3	3.7	4.1
80～100						
100～120						
120～140						

H-K9L	517642	n_d = 1.516800	υ_d = 64.20	$n_F - n_C$ = 0.008050
		n_e = 1.518721	υ_e = 63.98	$n_{F'} - n_{C'}$ = 0.008107

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	1.489640
$n_{1970.09}$	1970.09	1.495235
$n_{1529.58}$	1529.58	1.501060
$n_{1060.0}$	1060.0	1.506743
n_t	1013.98	1.507356
n_s	852.11	1.509828
n_r	706.52	1.512901
n_C	656.27	1.514326
$n_{C'}$	643.85	1.514723
n_{He-Ne}	632.8	1.515092
n_D	589.29	1.516728
n_d	587.56	1.516800
n_e	546.07	1.518721
n_F	486.13	1.522376
$n_{F'}$	479.99	1.522830
n_g	435.83	1.526690
n_h	404.66	1.530251
n_i	365.01	1.536288
$n_{313.18}$	313.18	1.548455
$n_{302.15}$	302.15	1.552035

色散公式常数 Constants of Dispersion Formula

K_1	6.14555251E-01
L_1	1.45987884E-02
K_2	6.56775017E-01
L_2	2.87769588E-03
K_3	1.02699346E+00
L_3	1.07653051E+02

折射率温度系数常数 Constants of dn/dt

D_0	-1.04E-06
D_1	1.48E-08
D_2	-5.17E-11
E_0	3.85E-07
E_1	4.55E-10
λ_{TK}(μm)	0.211

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.3071	$P'_{s,t}$	0.3049
$P_{C,s}$	0.5588	$P'_{C',s}$	0.6038
$P_{d,C}$	0.3073	$P'_{d,C'}$	0.2562
$P_{e,d}$	0.2386	$P'_{e,d}$	0.2370
$P_{g,F}$	0.5359	$P'_{g,F'}$	0.4761
$P_{i,h}$	0.7499	$P'_{i,h}$	0.7447

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	0.0171	$\Delta P_{C,s}$	0.0052
$\Delta P_{F,e}$	-0.0006	$\Delta P_{g,F}$	-0.0005

着色度 Color Code

λ_{80}/λ_5	315/275
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	560
T_s (℃)	620
$T_{10^{14.5}}$ (℃)	511
$T_{10^{13}}$ (℃)	547
$T_{10^{7.6}}$(℃)	714
$\alpha_{-30/70℃}$(10^{-7}/K)	76
$\alpha_{100/300℃}$(10^{-7}/K)	95
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	3
D_A	1
CR	2
RC(S)	1
RA(S)	1

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.842	0.709
2200	0.882	0.778
2000	0.951	0.904
1800	0.978	0.957
1600	0.993	0.987
1400	0.988	0.975
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.998	0.997
650	0.998	0.997
600	0.998	0.997
550	0.998	0.997
500	0.998	0.997
480	0.998	0.997
460	0.998	0.997
440	0.998	0.997
420	0.998	0.997
400	0.998	0.997
390	0.998	0.996
380	0.997	0.995
370	0.997	0.995
360	0.996	0.992
350	0.991	0.982
340	0.987	0.974
330	0.975	0.951
320	0.946	0.894
310	0.881	0.776
300	0.746	0.557
290	0.524	0.275
280		

机械性质 Mechanical Properties

H_K (10^7Pa)	595
F_A	100
E (10^7Pa)	7920
G (10^7Pa)	3270
μ	0.211
B (10^{-12}/Pa)	2.70

其他性质 Other Properties

ρ (g/cm^3)	2.52

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	0.9	1.1	1.2	1.3	1.6	1.9
-40～-20	0.9	1.2	1.3	1.4	1.7	1.9
-20～0	1.0	1.3	1.4	1.4	1.8	1.9
0～20	1.0	1.4	1.5	1.5	1.8	2.0
20～40	1.2	1.5	1.6	1.7	1.9	2.2
40～60	1.3	1.6	1.6	1.8	2.1	2.3
60～80	1.3	1.6	1.7	1.8	2.1	2.3
80～100	1.1	1.4	1.5	1.7	2.1	2.3
100～120	1.1	1.4	1.5	1.7	2.1	2.4
120～140	1.1	1.6	1.8	1.9	2.2	2.7

CDGM

H-K9LGT	517642	n_d = 1.516800	υ_d = 64.20	$n_F - n_C$ = 0.008050
		n_e = 1.518721	υ_e = 63.98	$n_{F'} - n_{C'}$ = 0.008107

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	1.489640
$n_{1970.09}$	1970.09	1.495235
$n_{1529.58}$	1529.58	1.501060
$n_{1060.0}$	1060.0	1.506743
n_t	1013.98	1.507356
n_s	852.11	1.509828
n_r	706.52	1.512901
n_C	656.27	1.514326
$n_{C'}$	643.85	1.514723
n_{He-Ne}	632.8	1.515092
n_D	589.29	1.516728
n_d	587.56	1.516800
n_e	546.07	1.518721
n_F	486.13	1.522376
$n_{F'}$	479.99	1.522830
n_g	435.83	1.526690
n_h	404.66	1.530251
n_i	365.01	1.536288
$n_{313.18}$	313.18	1.548455
$n_{302.15}$	302.15	1.552035

色散公式常数 Constants of Dispersion Formula

K_1	6.14555251E-01
L_1	1.45987884E-02
K_2	6.56775017E-01
L_2	2.87769588E-03
K_3	1.02699346E+00
L_3	1.07653051E+02

折射率温度系数常数 Constants of dn/dt

D_0	-1.04E-06
D_1	1.48E-08
D_2	-5.17E-11
E_0	3.85E-07
E_1	4.55E-10
λ_{TK}(μm)	0.211

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.3071	$P'_{s,t}$	0.3049
$P_{C,s}$	0.5588	$P'_{C',s}$	0.6038
$P_{d,C}$	0.3073	$P'_{d,C'}$	0.2562
$P_{e,d}$	0.2386	$P'_{e,d}$	0.2370
$P_{g,F}$	0.5359	$P'_{g,F'}$	0.4761
$P_{i,h}$	0.7499	$P'_{i,h}$	0.7447

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	0.0171	$\Delta P_{C,s}$	0.0052
$\Delta P_{F,e}$	-0.0006	$\Delta P_{g,F}$	-0.0005

着色度 Color Code

λ_{80}/λ_5	310/275
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	560
T_s (℃)	620
$T_{10}^{14.5}$ (℃)	511
T_{10}^{13} (℃)	547
$T_{10}^{7.6}$(℃)	714
$\alpha_{-30/70℃}$(10^{-7}/K)	76
$\alpha_{100/300℃}$(10^{-7}/K)	95
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	3
D_A	1
CR	2
RC(S)	1
RA(S)	1

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.851	0.725
2200	0.888	0.788
2000	0.954	0.911
1800	0.980	0.960
1600	0.994	0.988
1400	0.989	0.978
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.999	0.998
650	0.999	0.998
600	0.999	0.998
550	0.999	0.998
500	0.999	0.998
480	0.999	0.998
460	0.999	0.998
440	0.999	0.998
420	0.999	0.998
400	0.999	0.998
390	0.999	0.998
380	0.999	0.998
370	0.999	0.998
360	0.999	0.998
350	0.997	0.994
340	0.994	0.988
330	0.987	0.975
320	0.972	0.944
310	0.932	0.869
300	0.840	0.706
290	0.664	0.441
280	0.411	0.169

机械性质 Mechanical Properties

H_K (10^7Pa)	595
F_A	100
E (10^7Pa)	7920
G (10^7Pa)	3270
μ	0.211
B (10^{-12}/Pa)	2.70

其他性质 Other Properties

ρ (g/cm^3)	2.52

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	0.9	1.1	1.2	1.3	1.6	1.9
-40～-20	0.9	1.2	1.3	1.4	1.7	1.9
-20～0	1.0	1.3	1.4	1.4	1.8	1.9
0～20	1.0	1.4	1.5	1.5	1.8	2.0
20～40	1.2	1.5	1.6	1.7	1.9	2.2
40～60	1.3	1.6	1.6	1.8	2.1	2.3
60～80	1.3	1.6	1.7	1.8	2.1	2.3
80～100	1.1	1.4	1.5	1.7	2.1	2.3
100～120	1.1	1.4	1.5	1.7	2.1	2.4
120～140	1.1	1.6	1.8	1.9	2.2	2.7

H-K9L*	517642	n_d = 1.516800	υ_d = 64.20	$n_F - n_C$ = 0.008050
		n_e = 1.518721	υ_e = 63.98	$n_{F'} - n_{C'}$ = 0.008107

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	1.489640
$n_{1970.09}$	1970.09	1.495235
$n_{1529.58}$	1529.58	1.501060
$n_{1060.0}$	1060.0	1.506743
n_t	1013.98	1.507356
n_s	852.11	1.509828
n_r	706.52	1.512901
n_C	656.27	1.514326
$n_{C'}$	643.85	1.514723
n_{He-Ne}	632.8	1.515092
n_D	589.29	1.516728
n_d	587.56	1.516800
n_e	546.07	1.518721
n_F	486.13	1.522376
$n_{F'}$	479.99	1.522830
n_g	435.83	1.526690
n_h	404.66	1.530251
n_i	365.01	1.536288
$n_{313.18}$	313.18	1.548455
$n_{302.15}$	302.15	1.552035

色散公式常数 Constants of Dispersion Formula

K_1	6.14555251E-01
L_1	1.45987884E-02
K_2	6.56775017E-01
L_2	2.87769588E-03
K_3	1.02699346E+00
L_3	1.07653051E+02

折射率温度系数常数 Constants of dn/dt

D_0	-1.04E-06
D_1	1.48E-08
D_2	-5.17E-11
E_0	3.85E-07
E_1	4.55E-10
λ_{TK}(μm)	0.211

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.3071	$P'_{s,t}$	0.3049
$P_{C,s}$	0.5588	$P'_{C',s}$	0.6038
$P_{d,C}$	0.3073	$P'_{d,C'}$	0.2562
$P_{e,d}$	0.2386	$P'_{e,d}$	0.2370
$P_{g,F}$	0.5359	$P'_{g,F'}$	0.4761
$P_{i,h}$	0.7499	$P'_{i,h}$	0.7447

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	0.0171	$\Delta P_{C,s}$	0.0052
$\Delta P_{F,e}$	-0.0006	$\Delta P_{g,F}$	-0.0005

着色度 Color Code

λ_{80}/λ_5	335/295
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	560
T_s (℃)	620
$T_{10}^{14.5}$ (℃)	511
T_{10}^{13} (℃)	547
$T_{10}^{7.6}$(℃)	714
$\alpha_{-30/70℃}$(10^{-7}/K)	76
$\alpha_{100/300℃}$(10^{-7}/K)	95
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	3
D_A	1
CR	2
RC(S)	1
RA(S)	1

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.893	0.797
2200	0.921	0.849
2000	0.968	0.937
1800	0.986	0.971
1600	0.995	0.990
1400	0.990	0.981
1200	0.998	0.996
1060	0.998	0.996
1000	0.998	0.996
950	0.998	0.996
900	0.998	0.996
850	0.998	0.997
800	0.998	0.997
700	0.998	0.997
650	0.998	0.997
600	0.998	0.997
550	0.998	0.997
500	0.998	0.997
480	0.998	0.997
460	0.998	0.997
440	0.998	0.997
420	0.998	0.997
400	0.998	0.996
390	0.996	0.993
380	0.993	0.987
370	0.992	0.985
360	0.987	0.974
350	0.975	0.950
340	0.948	0.898
330	0.898	0.807
320	0.798	0.637
310	0.614	0.377
300	0.351	0.123
290	0.161	0.026
280		

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	0.9	1.1	1.2	1.3	1.6	1.9
-40～-20	0.9	1.2	1.3	1.4	1.7	1.9
-20～0	1.0	1.3	1.4	1.4	1.8	1.9
0～20	1.0	1.4	1.5	1.5	1.8	2.0
20～40	1.2	1.5	1.6	1.7	1.9	2.2
40～60	1.3	1.6	1.6	1.8	2.1	2.3
60～80	1.3	1.6	1.7	1.8	2.1	2.3
80～100	1.1	1.4	1.5	1.7	2.1	2.3
100～120	1.1	1.4	1.5	1.7	2.1	2.4
120～140	1.1	1.6	1.8	1.9	2.2	2.7

机械性质 Mechanical Properties

H_K (10^7Pa)	595
F_A	100
E (10^7Pa)	7920
G (10^7Pa)	3270
μ	0.211
B (10^{-12}/Pa)	2.70

其他性质 Other Properties

ρ (g/cm^3)	2.52

备注 Remarks

此为成都光明二基地生产产品

CDGM

H-K9LA	517642	n_d = 1.516800	υ_d = 64.20	$n_F - n_C$ = 0.008050
		n_e = 1.518721	υ_e = 63.99	$n_{F'} - n_{C'}$ = 0.008106

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	1.489189
$n_{1970.09}$	1970.09	1.494918
$n_{1529.58}$	1529.58	1.500887
$n_{1060.0}$	1060.0	1.506684
n_t	1013.98	1.507306
n_s	852.11	1.509804
n_r	706.52	1.512894
n_C	656.27	1.514323
$n_{C'}$	643.85	1.514720
n_{He-Ne}	632.8	1.515090
n_D	589.29	1.516728
n_d	587.56	1.516800
n_e	546.07	1.518721
n_F	486.13	1.522373
$n_{F'}$	479.99	1.522826
n_g	435.83	1.526680
n_h	404.66	1.530234
n_i	365.01	1.536257
$n_{313.18}$	313.18	1.548393
$n_{302.15}$	302.15	1.551963

色散公式常数 Constants of Dispersion Formula

K_1	6.84743072E-01
L_1	3.13539741E-03
K_2	5.86772376E-01
L_2	1.48101330E-02
K_3	1.14804248E+00
L_3	1.16583792E+02

折射率温度系数常数 Constants of dn/dt

D_0	9.03E-07
D_1	1.85E-08
D_2	-2.98E-11
E_0	4.55E-07
E_1	1.00E-10
λ_{TK}(μm)	0.182

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.3103	$P'_{s,t}$	0.3082
$P_{C,s}$	0.5614	$P'_{C',s}$	0.6065
$P_{d,C}$	0.3077	$P'_{d,C'}$	0.2566
$P_{e,d}$	0.2386	$P'_{e,d}$	0.2370
$P_{g,F}$	0.5350	$P'_{g,F'}$	0.4755
$P_{i,h}$	0.7482	$P'_{i,h}$	0.7430

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	0.0229	$\Delta P_{C,s}$	0.0078
$\Delta P_{F,e}$	-0.0010	$\Delta P_{g,F}$	-0.0013

着色度 Color Code

λ_{80}/λ_5	330/290
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	585
T_s (℃)	632
$T_{10^{14.5}}$ (℃)	522
$T_{10^{13}}$ (℃)	565
$T_{10^{7.6}}$(℃)	733
$\alpha_{-30/70℃}$(10^{-7}/K)	72
$\alpha_{100/300℃}$(10^{-7}/K)	88
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	3
D_A	1
CR	1
RC(S)	3
RA(S)	1

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.916	0.839
2200	0.940	0.884
2000	0.979	0.959
1800	0.990	0.981
1600	0.996	0.993
1400	0.991	0.983
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.997
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.999	0.998
650	0.999	0.998
600	0.999	0.998
550	0.998	0.997
500	0.998	0.997
480	0.998	0.997
460	0.998	0.997
440	0.998	0.997
420	0.998	0.997
400	0.998	0.997
390	0.998	0.997
380	0.995	0.991
370	0.995	0.990
360	0.990	0.980
350	0.980	0.961
340	0.961	0.923
330	0.924	0.854
320	0.848	0.719
310	0.706	0.498
300	0.477	0.228
290	0.232	0.054
280		

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	1.9	2.1	2.4	2.4	2.6	2.7
-40～-20	1.7	2.1	2.2	2.3	2.5	2.8
-20～0	1.8	2.2	2.2	2.3	2.6	2.9
0～20	1.8	2.2	2.3	2.4	2.7	3.1
20～40	1.9	2.3	2.5	2.6	2.8	3.2
40～60	2.1	2.5	2.7	2.7	3.0	3.3
60～80	2.3	2.7	2.8	3.0	3.3	3.5
80～100	2.5	2.8	2.8	3.1	3.4	3.6
100～120	2.5	2.8	2.8	3.1	3.4	3.7
120～140	2.5	2.8	2.9	3.1	3.5	3.9

机械性质 Mechanical Properties

H_K (10^7Pa)	537
F_A	95
E (10^7Pa)	8145
G (10^7Pa)	3369
μ	0.209
B (10^{-12}/Pa)	

其他性质 Other Properties

ρ (g/cm^3)	2.51

备注 Remarks

CDGM

H-K10	518590	n_d = 1.518180	υ_d = 58.95	$n_F - n_C$ = 0.008790
		n_e = 1.520275	υ_e = 58.68	$n_{F'} - n_{C'}$ = 0.008867

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	1.492433
$n_{1970.09}$	1970.09	1.497269
$n_{1529.58}$	1529.58	1.502403
$n_{1060.0}$	1060.0	1.507686
n_t	1013.98	1.508286
n_s	852.11	1.510772
n_r	706.52	1.513986
n_C	656.27	1.515508
$n_{C'}$	643.85	1.515933
n_{He-Ne}	632.8	1.516331
n_D	589.29	1.518102
n_d	587.56	1.518180
n_e	546.07	1.520275
n_F	486.13	1.524298
$n_{F'}$	479.99	1.524800
n_g	435.83	1.529091
n_h	404.66	1.533080
n_i	365.01	1.539906
$n_{313.18}$	313.18	1.553925
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

K_1	2.31760668E-01
L_1	2.37840711E-02
K_2	1.03993508E+00
L_2	6.15271269E-03
K_3	9.66966878E-01
L_3	1.17740117E+02

折射率温度系数常数 Constants of dn/dt

D_0	-3.97E-06
D_1	2.28E-08
D_2	-5.39E-11
E_0	4.17E-07
E_1	-3.71E-10
λ_{TK}(μm)	0.254

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2828	$P'_{s,t}$	0.2804
$P_{C,s}$	0.5388	$P'_{C',s}$	0.5820
$P_{d,C}$	0.3040	$P'_{d,C'}$	0.2534
$P_{e,d}$	0.2383	$P'_{e,d}$	0.2363
$P_{g,F}$	0.5453	$P'_{g,F'}$	0.4839
$P_{i,h}$	0.7766	$P'_{i,h}$	0.7698

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	-0.0024	$\Delta P_{C,s}$	-0.0023
$\Delta P_{F,e}$	0.0002	$\Delta P_{g,F}$	0.0000

着色度 Color Code

λ_{80}/λ_5	345/310
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	511
T_s (℃)	587
$T_{10^{14.5}}$ (℃)	466
$T_{10^{13}}$ (℃)	509
$T_{10^{7.6}}$(℃)	675
$\alpha_{-30/70℃}$(10^{-7}/K)	90
$\alpha_{100/300℃}$(10^{-7}/K)	108
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	3
D_A	1
CR	3
RC(S)	3
RA(S)	1

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.870	0.760
2200	0.905	0.819
2000	0.953	0.909
1800	0.981	0.962
1600	0.996	0.993
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.997
700	0.998	0.997
650	0.998	0.996
600	0.998	0.996
550	0.998	0.996
500	0.997	0.995
480	0.997	0.995
460	0.997	0.994
440	0.997	0.994
420	0.996	0.993
400	0.995	0.990
390	0.992	0.985
380	0.987	0.975
370	0.978	0.957
360	0.958	0.917
350	0.914	0.835
340	0.820	0.680
330	0.640	0.410
320	0.350	0.120
310		
300		
290		
280		

机械性质 Mechanical Properties

H_K (10^7Pa)	456
F_A	78
E (10^7Pa)	6971
G (10^7Pa)	2858
μ	0.220
B (10^{-12}/Pa)	2.55

其他性质 Other Properties

ρ (g/cm^3)	2.50

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	-0.4	-0.4	0.0	0.2	0.3	0.9
-20～0	-0.4	-0.1	0.0	0.3	0.6	0.9
0～20	-0.2	0.0	0.2	0.4	0.7	1.1
20～40	0.0	0.3	0.5	0.5	0.9	1.3
40～60	0.1	0.5	0.7	0.7	1.1	1.3
60～80	0.2	0.7	0.7	0.7	1.0	1.4
80～100						
100～120						
120～140						

H-K11	526602	n_d = 1.52638	υ_d = 60.16	$n_F - n_C$ = 0.008750
		n_e = 1.52847	υ_e = 59.90	$n_{F'} - n_{C'}$ = 0.008823

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.51652
n_s	852.11	1.51898
n_r	706.52	1.52220
n_C	656.27	1.52371
$n_{C'}$	643.85	1.52414
n_{He-Ne}	632.8	1.52454
n_D	589.29	1.52630
n_d	587.56	1.52638
n_e	546.07	1.52847
n_F	486.13	1.53246
$n_{F'}$	479.99	1.53296
n_g	435.83	1.53721
n_h	404.66	1.54116
n_i	365.01	1.54790
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

A_0	2.2950052E+00
A_1	-7.5263418E-03
A_2	1.3021247E-02
A_3	-1.4311630E-04
A_4	4.3122798E-05
A_5	-1.8646905E-06

折射率温度系数常数 Constants of dn/dt

D_0	-5.26E-06
D_1	1.82E-08
D_2	-8.49E-11
E_0	5.16E-07
E_1	1.16E-09
λ_{TK}(μm)	0.136

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2811	$P'_{s,t}$	0.2788
$P_{C,s}$	0.5406	$P'_{C',s}$	0.5848
$P_{d,C}$	0.3051	$P'_{d,C'}$	0.2539
$P_{e,d}$	0.2389	$P'_{e,d}$	0.2369
$P_{g,F}$	0.5429	$P'_{g,F'}$	0.4817
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	-0.0080	$\Delta P_{C,s}$	-0.0034
$\Delta P_{F,e}$	-0.0009	$\Delta P_{g,F}$	-0.0004

着色度 Color Code

λ_{80}/λ_5	320/275
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	515
T_s (℃)	580
$T_{10}^{14.5}$ (℃)	455
T_{10}^{13} (℃)	499
$T_{10}^{7.6}$(℃)	682
$\alpha_{-30/70℃}$(10^{-7}/K)	94
$\alpha_{100/300℃}$(10^{-7}/K)	110
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	2
D_A	1
CR	3
RC(S)	3
RA(S)	1

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.857	0.734
2200	0.898	0.806
2000	0.949	0.901
1800	0.978	0.956
1600	0.995	0.989
1400	0.996	0.992
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.999	0.998
650	0.999	0.998
600	0.999	0.998
550	0.999	0.998
500	0.998	0.996
480	0.998	0.996
460	0.998	0.997
440	0.998	0.996
420	0.998	0.996
400	0.998	0.997
390	0.997	0.995
380	0.996	0.993
370	0.996	0.993
360	0.995	0.991
350	0.993	0.986
340	0.985	0.971
330	0.971	0.942
320	0.932	0.869
310	0.838	0.702
300	0.647	0.418
290	0.362	0.131
280		

机械性质 Mechanical Properties

H_K (10^7Pa)	510
F_A	90
E (10^7Pa)	6807
G (10^7Pa)	2761
μ	0.233
B (10^{-12}/Pa)	2.56

其他性质 Other Properties

ρ (g/cm^3)	2.69

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	-1.1	-0.8	-0.6	-0.4	-0.3	-0.1
-20～0	-0.9	-0.5	-0.5	-0.4	-0.2	0.0
0～20	-0.7	-0.5	-0.5	-0.4	-0.1	0.4
20～40	-0.5	-0.3	0.0	0.3	0.4	0.7
40～60	-0.5	-0.3	0.0	0.3	0.4	0.7
60～80	-0.5	-0.2	0.1	0.3	0.4	0.7
80～100						
100～120						
120～140						

CDGM

H-K12	534555	n_d = 1.53359	υ_d = 55.47	$n_F - n_C$ = 0.009619
		n_e = 1.53588	υ_e = 55.17	$n_{F'} - n_{C'}$ = 0.009713

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.52296
n_s	852.11	1.52558
n_r	706.52	1.52903
n_C	656.27	1.53068
$n_{C'}$	643.85	1.53114
n_{He-Ne}	632.8	1.53157
n_D	589.29	1.53350
n_d	587.56	1.53359
n_e	546.07	1.53588
n_F	486.13	1.54030
$n_{F'}$	479.99	1.54085
n_g	435.83	1.54558
n_h	404.66	1.54998
n_i	365.01	1.55756
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

A_0	2.3150643E+00
A_1	-8.2715617E-03
A_2	1.2953556E-02
A_3	2.6850520E-04
A_4	-5.4602827E-06
A_5	6.2432562E-07

折射率温度系数常数 Constants of dn/dt

D_0	-1.57E-06
D_1	1.35E-08
D_2	-5.16E-11
E_0	7.91E-07
E_1	9.19E-10
λ_{TK}(μm)	0.086

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2724	$P'_{s,t}$	0.2697
$P_{C,s}$	0.5302	$P'_{C',s}$	0.5724
$P_{d,C}$	0.3025	$P'_{d,C'}$	0.2522
$P_{e,d}$	0.2381	$P'_{e,d}$	0.2358
$P_{g,F}$	0.5489	$P'_{g,F'}$	0.4870
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	-0.0051	$\Delta P_{C,s}$	-0.0027
$\Delta P_{F,e}$	0.0001	$\Delta P_{g,F}$	-0.0023

着色度 Color Code

λ_{80}/λ_5	350/320
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	502
T_s (℃)	556
$T_{10}^{14.5}$ (℃)	456
T_{10}^{13} (℃)	494
$T_{10}^{7.6}$(℃)	668
$\alpha_{-30/70℃}$(10^{-7}/K)	92
$\alpha_{100/300℃}$(10^{-7}/K)	107
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	2
D_A	1
CR	
RC(S)	4
RA(S)	1

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.903	0.815
2200	0.924	0.854
2000	0.964	0.929
1800	0.983	0.966
1600	0.995	0.990
1400	0.997	0.993
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.997
700	0.998	0.997
650	0.998	0.997
600	0.998	0.997
550	0.998	0.997
500	0.998	0.997
480	0.998	0.997
460	0.998	0.996
440	0.998	0.996
420	0.998	0.996
400	0.997	0.995
390	0.995	0.990
380	0.990	0.980
370	0.982	0.965
360	0.965	0.931
350	0.923	0.852
340	0.829	0.687
330	0.626	0.392
320	0.288	0.083
310		
300		
290		
280		

机械性质 Mechanical Properties

H_K (10^7Pa)	462
F_A	85
E (10^7Pa)	7030
G (10^7Pa)	2849
μ	0.234
B (10^{-12}/Pa)	2.82

其他性质 Other Properties

ρ (g/cm^3)	2.72

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	1.0	1.4	1.6	1.7	1.9	2.3
-20～0	1.0	1.4	1.6	1.8	2.1	2.3
0～20	1.0	1.5	1.6	1.9	2.6	2.8
20～40	1.0	1.6	1.8	1.9	2.6	2.8
40～60	1.2	1.7	1.8	2.0	2.6	2.8
60～80	1.3	1.7	1.8	2.2	2.6	2.9
80～100						
100～120						
120～140						

H-K50	522595	n_d = 1.52249	υ_d = 59.48	$n_F - n_C$ = 0.008784
		n_e = 1.52458	υ_e = 59.22	$n_{F'} - n_{C'}$ = 0.008858

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.51254
n_s	852.11	1.51505
n_r	706.52	1.51829
n_C	656.27	1.51982
$n_{C'}$	643.85	1.52024
n_{He-Ne}	632.8	1.52064
n_D	589.29	1.52241
n_d	587.56	1.52249
n_e	546.07	1.52458
n_F	486.13	1.52860
$n_{F'}$	479.99	1.52910
n_g	435.83	1.53339
n_h	404.66	1.53739
n_i	365.01	1.54422
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	2.2834436E+00
A_1	-8.0037901E-03
A_2	1.3080112E-02
A_3	-2.2416659E-04
A_4	6.1554862E-05
A_5	-2.9434240E-06

折射率温度系数常数 Constants of dn/dt	
D_0	-1.18E-06
D_1	1.18E-08
D_2	-7.33E-11
E_0	5.47E-07
E_1	1.51E-09
λ_{TK}(μm)	0.174

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2857	$P'_{s,t}$	0.2834
$P_{C,s}$	0.5430	$P'_{C',s}$	0.5859
$P_{d,C}$	0.3040	$P'_{d,C'}$	0.2540
$P_{e,d}$	0.2379	$P'_{e,d}$	0.2359
$P_{g,F}$	0.5453	$P'_{g,F'}$	0.4843
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0022	$\Delta P_{C,s}$	0.0007
$\Delta P_{F,e}$	0.0004	$\Delta P_{g,F}$	0.0009

着色度 Color Code	
λ_{80}/λ_5	345/315
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	564
T_s (℃)	633
$T_{10}^{14.5}$ (℃)	507
T_{10}^{13} (℃)	522
$T_{10}^{7.6}$(℃)	736
$\alpha_{-30/70℃}$(10^{-7}/K)	79
$\alpha_{100/300℃}$(10^{-7}/K)	96
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	2
D_A	3
CR	
RC(S)	3
RA(S)	1

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.903	0.815
2200	0.925	0.856
2000	0.968	0.937
1800	0.987	0.974
1600	0.997	0.994
1400	0.998	0.996
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.996	0.992
700	0.996	0.992
650	0.996	0.992
600	0.996	0.993
550	0.996	0.992
500	0.995	0.991
480	0.995	0.990
460	0.994	0.989
440	0.994	0.989
420	0.994	0.988
400	0.993	0.987
390	0.991	0.983
380	0.987	0.974
370	0.982	0.964
360	0.966	0.933
350	0.931	0.866
340	0.850	0.720
330	0.660	0.440
320	0.330	0.110
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	537
F_A	81
E (10^7Pa)	7338
G (10^7Pa)	3004
μ	0.221
B (10^{-12}/Pa)	

其他性质 Other Properties	
ρ (g/cm^3)	2.52

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	0.9	1.2	1.3	1.7	1.9	2.1
-20～0	0.9	1.3	1.6	1.7	1.9	2.1
0～20	1.2	1.4	1.6	1.8	1.9	2.2
20～40	1.2	1.5	1.7	1.7	2.1	2.6
40～60	1.1	1.6	1.8	1.9	2.2	2.6
60～80	1.2	1.7	1.8	1.9	2.4	2.8
80～100						
100～120						
120～140						

H-K51	523586	n_d = 1.52307	υ_d = 58.64	$n_F - n_C$ = 0.008920
		n_e = 1.52520	υ_e = 58.36	$n_{F'} - n_{C'}$ = 0.009000

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.51305
n_s	852.11	1.51558
n_r	706.52	1.51883
n_C	656.27	1.52037
$n_{C'}$	643.85	1.52080
n_{He-Ne}	632.8	1.52120
n_D	589.29	1.52299
n_d	587.56	1.52307
n_e	546.07	1.52520
n_F	486.13	1.52929
$n_{F'}$	479.99	1.52980
n_g	435.83	1.53415
n_h	404.66	1.53820
n_i	365.01	1.54509
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

A_0	2.2870470E+00
A_1	-8.9694646E-03
A_2	1.1527852E-02
A_3	3.0799622E-04
A_4	-7.9358469E-06
A_5	2.9189812E-07

折射率温度系数常数 Constants of dn/dt

D_0	-7.23E-07
D_1	1.38E-08
D_2	-8.37E-11
E_0	5.74E-07
E_1	1.43E-09
λ_{TK}(μm)	0.169

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2836	$P'_{s,t}$	0.2811
$P_{C,s}$	0.5370	$P'_{C',s}$	0.5800
$P_{d,C}$	0.3027	$P'_{d,C'}$	0.2522
$P_{e,d}$	0.2388	$P'_{e,d}$	0.2367
$P_{g,F}$	0.5448	$P'_{g,F'}$	0.4833
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	-0.0019	$\Delta P_{C,s}$	-0.0034
$\Delta P_{F,e}$	0.0008	$\Delta P_{g,F}$	-0.0010

着色度 Color Code

λ_{80}/λ_5	345/310
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	558
T_s (℃)	610
$T_{10}^{14.5}$ (℃)	504
T_{10}^{13} (℃)	547
$T_{10}^{7.6}$(℃)	735
$\alpha_{-30/70℃}$(10^{-7}/K)	80
$\alpha_{100/300℃}$(10^{-7}/K)	99
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	2
D_A	1
CR	2
RC(S)	2
RA(S)	1

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.908	0.825
2200	0.924	0.853
2000	0.967	0.935
1800	0.985	0.971
1600	0.998	0.997
1400	0.998	0.997
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.998	0.997
800	0.998	0.996
700	0.998	0.996
650	0.997	0.995
600	0.997	0.996
550	0.997	0.996
500	0.997	0.996
480	0.997	0.995
460	0.997	0.995
440	0.997	0.994
420	0.997	0.994
400	0.997	0.994
390	0.994	0.989
380	0.990	0.981
370	0.986	0.972
360	0.973	0.947
350	0.946	0.895
340	0.880	0.780
330	0.750	0.560
320	0.470	0.220
310	0.140	0.020
300		
290		
280		

机械性质 Mechanical Properties

H_K (10^7Pa)	541
F_A	82
E (10^7Pa)	7411
G (10^7Pa)	3030
μ	0.223
B (10^{-12}/Pa)	2.60

其他性质 Other Properties

ρ (g/cm^3)	2.53

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	0.9	1.0	1.3	1.8	1.8	2.1
-20～0	1.2	1.8	1.9	1.9	2.2	2.6
0～20	1.4	1.5	1.7	1.8	1.9	2.4
20～40	1.3	1.9	2.0	2.1	2.4	2.7
40～60	1.2	1.9	2.0	2.0	2.8	3.0
60～80	1.3	1.7	1.9	2.3	2.7	2.9
80～100						
100～120						
120～140						

CDGM

H-ZPK1A	618634	n_d = 1.61800	υ_d = 63.39	$n_F - n_C$ = 0.009748
		n_e = 1.62032	υ_e = 63.11	$n_{F'} - n_{C'}$ = 0.009829

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.60715
n_s	852.11	1.60981
n_r	706.52	1.61334
n_C	656.27	1.61503
$n_{C'}$	643.85	1.61550
n_{He-Ne}	632.8	1.61594
n_D	589.29	1.61791
n_d	587.56	1.61800
n_e	546.07	1.62032
n_F	486.13	1.62478
$n_{F'}$	479.99	1.62533
n_g	435.83	1.63004
n_h	404.66	1.63439
n_i	365.01	1.64177
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	2.5761264E+00
A_1	-7.8040160E-03
A_2	1.5246501E-02
A_3	-2.0774016E-05
A_4	2.2854441E-05
A_5	-8.2333323E-07

折射率温度系数常数 Constants of dn/dt	
D_0	-1.07E-05
D_1	1.43E-08
D_2	-5.77E-11
E_0	3.87E-07
E_1	8.82E-11
λ_{TK}(μm)	0.189

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2729	$P'_{s,t}$	0.2706
$P_{C,s}$	0.5355	$P'_{C',s}$	0.5789
$P_{d,C}$	0.3047	$P'_{d,C'}$	0.2543
$P_{e,d}$	0.2380	$P'_{e,d}$	0.2360
$P_{g,F}$	0.5396	$P'_{g,F'}$	0.4792
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	-0.0366	$\Delta P_{C,s}$	-0.0161
$\Delta P_{F,e}$	0.0024	$\Delta P_{g,F}$	0.0019

着色度 Color Code	
λ_{80}/λ_5	350/290
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	618
T_s (℃)	650
$T_{10}^{14.5}$ (℃)	553
T_{10}^{13} (℃)	589
$T_{10}^{7.6}$(℃)	703
$\alpha_{-30/70℃}$(10^{-7}/K)	99
$\alpha_{100/300℃}$(10^{-7}/K)	114
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	4
CR	1
RC(S)	1
RA(S)	1

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.949	0.901
2200	0.965	0.932
2000	0.983	0.966
1800	0.991	0.982
1600	0.997	0.994
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.999	0.998
650	0.999	0.998
600	0.999	0.998
550	0.999	0.998
500	0.997	0.995
480	0.997	0.994
460	0.996	0.993
440	0.995	0.990
420	0.995	0.990
400	0.991	0.983
390	0.987	0.975
380	0.978	0.957
370	0.960	0.921
360	0.924	0.854
350	0.863	0.745
340	0.766	0.586
330	0.629	0.396
320	0.469	0.220
310	0.318	0.101
300	0.205	0.042
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	379
F_A	324
E (10^7Pa)	7162
G (10^7Pa)	2772
μ	0.292
B (10^{-12}/Pa)	1.11

其他性质 Other Properties	
ρ (g/cm^3)	3.61

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	-3.9	-3.6	-3.5	-3.4	-3.2	-3.1
-20～0	-3.7	-3.4	-3.3	-3.2	-3.1	-2.8
0～20	-3.7	-3.4	-3.3	-3.2	-2.9	-2.8
20～40	-3.6	-3.3	-3.2	-3.1	-2.9	-2.6
40～60	-3.5	-3.3	-3.2	-3.0	-2.8	-2.5
60～80	-3.5	-3.2	-3.1	-2.9	-2.7	-2.4
80～100						
100～120						
120～140						

CDGM

H-ZPK2A	603655	n_d = 1.60300	υ_d = 65.47	$n_F - n_C$ = 0.009210
		n_e = 1.60520	υ_e = 65.15	$n_{F'} - n_{C'}$ = 0.009290

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.59256
n_s	852.11	1.59517
n_r	706.52	1.59858
n_C	656.27	1.60019
$n_{C'}$	643.85	1.60063
n_{He-Ne}	632.8	1.60105
n_D	589.29	1.60292
n_d	587.56	1.60300
n_e	546.07	1.60520
n_F	486.13	1.60940
$n_{F'}$	479.99	1.60992
n_g	435.83	1.61438
n_h	404.66	1.61850
n_i	365.01	1.62550
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	2.5307319E+00
A_1	-8.3442991E-03
A_2	1.4655185E-02
A_3	-2.1664739E-04
A_4	5.3552539E-05
A_5	-2.4615826E-06

折射率温度系数常数 Constants of dn/dt	
D_0	-1.20E-05
D_1	1.48E-08
D_2	-5.44E-11
E_0	4.30E-07
E_1	-2.49E-10
λ_{TK}(μm)	0.158

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2834	$P'_{s,t}$	0.2809
$P_{C,s}$	0.5451	$P'_{C',s}$	0.5877
$P_{d,C}$	0.3051	$P'_{d,C'}$	0.2551
$P_{e,d}$	0.2389	$P'_{e,d}$	0.2368
$P_{g,F}$	0.5407	$P'_{g,F'}$	0.4801
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	-0.0263	$\Delta P_{C,s}$	-0.0115
$\Delta P_{F,e}$	0.0020	$\Delta P_{g,F}$	0.0065

着色度 Color Code	
λ_{80}/λ_5	355/305
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	619
T_s (℃)	648
$T_{10^{14.5}}$ (℃)	563
$T_{10^{13}}$ (℃)	595
$T_{10^{7.6}}$(℃)	699
$\alpha_{-30/70℃}$(10^{-7}/K)	93
$\alpha_{100/300℃}$(10^{-7}/K)	115
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	4
CR	1
RC(S)	3
RA(S)	1

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.922	0.850
2200	0.943	0.889
2000	0.971	0.943
1800	0.985	0.970
1600	0.995	0.990
1400	0.998	0.997
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.998	0.997
650	0.998	0.997
600	0.998	0.997
550	0.998	0.997
500	0.997	0.995
480	0.997	0.994
460	0.996	0.993
440	0.995	0.990
420	0.995	0.990
400	0.992	0.984
390	0.987	0.975
380	0.978	0.957
370	0.961	0.923
360	0.926	0.857
350	0.862	0.743
340	0.751	0.564
330	0.581	0.337
320	0.361	0.130
310	0.164	0.027
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	382
F_A	273
E (10^7Pa)	6814
G (10^7Pa)	2651
μ	0.285
B (10^{-12}/Pa)	1.10

其他性质 Other Properties	
ρ (g/cm^3)	3.50

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	-4.2	-4.1	-3.9	-3.7	-3.5	-3.4
-20～0	-4.2	-4.0	-3.9	-3.7	-3.5	-3.3
0～20	-4.2	-3.8	-3.7	-3.6	-3.4	-3.2
20～40	-4.1	-3.8	-3.7	-3.6	-3.4	-3.1
40～60	-3.9	-3.7	-3.6	-3.5	-3.4	-3.1
60～80	-3.9	-3.7	-3.6	-3.5	-3.4	-3.1
80～100						
100～120						
120～140						

CDGM

H-ZPK3	593673	n_d = 1.59349	υ_d = 67.29	$n_F - n_C$ = 0.008820
		n_e = 1.59559	υ_e = 67.07	$n_{F'} - n_{C'}$ = 0.008880

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.58328
n_s	852.11	1.58590
n_r	706.52	1.58923
n_C	656.27	1.59078
$n_{C'}$	643.85	1.59122
n_{He-Ne}	632.8	1.59162
n_D	589.29	1.59341
n_d	587.56	1.59349
n_e	546.07	1.59559
n_F	486.13	1.59960
$n_{F'}$	479.99	1.60010
n_g	435.83	1.60433
n_h	404.66	1.60823
n_i	365.01	1.61483
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	2.5035567E+00
A_1	-9.5601182E-03
A_2	1.3487028E-02
A_3	-1.0711965E-04
A_4	3.7465190E-05
A_5	-1.7800298E-06

折射率温度系数常数 Constants of dn/dt	
D_0	-8.49E-06
D_1	9.72E-09
D_2	-2.62E-11
E_0	3.31E-07
E_1	6.47E-10
λ_{TK}(μm)	0.223

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2971	$P'_{s,t}$	0.2950
$P_{C,s}$	0.5533	$P'_{C',s}$	0.5991
$P_{d,C}$	0.3073	$P'_{d,C'}$	0.2556
$P_{e,d}$	0.2381	$P'_{e,d}$	0.2365
$P_{g,F}$	0.5363	$P'_{g,F'}$	0.4764
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	-0.0130	$\Delta P_{C,s}$	-0.0076
$\Delta P_{F,e}$	0.0017	$\Delta P_{g,F}$	0.0052

着色度 Color Code	
λ_{80}/λ_5	355/310
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	512
T_s (℃)	543
$T_{10}^{14.5}$ (℃)	465
T_{10}^{13} (℃)	495
$T_{10}^{7.6}$(℃)	596
$\alpha_{-30/70℃}$(10^{-7}/K)	96
$\alpha_{100/300℃}$(10^{-7}/K)	115
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	4
CR	3
RC(S)	4
RA(S)	1

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.907	0.823
2200	0.934	0.872
2000	0.968	0.938
1800	0.983	0.966
1600	0.994	0.988
1400	0.997	0.995
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.996
700	0.998	0.996
650	0.998	0.996
600	0.998	0.997
550	0.998	0.997
500	0.998	0.997
480	0.998	0.996
460	0.998	0.996
440	0.996	0.993
420	0.997	0.994
400	0.996	0.992
390	0.993	0.986
380	0.989	0.979
370	0.978	0.957
360	0.957	0.915
350	0.914	0.836
340	0.835	0.697
330	0.708	0.501
320	0.526	0.277
310	0.315	0.099
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	446
F_A	270
E (10^7Pa)	8128
G (10^7Pa)	3197
μ	0.271
B (10^{-12}/Pa)	1.34

其他性质 Other Properties	
ρ (g/cm^3)	3.36

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	-2.4	-2.2	-2.1	-2.0	-1.8	-1.6
-20～0	-2.4	-2.2	-2.1	-2.0	-1.8	-1.6
0～20	-2.4	-2.1	-2.0	-2.0	-1.8	-1.5
20～40	-2.4	-2.1	-2.0	-2.0	-1.8	-1.5
40～60	-2.4	-2.1	-2.0	-2.0	-1.6	-1.3
60～80	-2.4	-2.1	-2.0	-1.8	-1.6	-1.2
80～100						
100～120						
120～140						

CDGM

H-ZPK5	593683	n_d = 1.592800	υ_d = 68.34	$n_F - n_C$ = 0.008674
		n_e = 1.594869	υ_e = 67.96	$n_{F'} - n_{C'}$ = 0.008753

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	1.570758
$n_{1970.09}$	1970.09	1.574388
$n_{1529.58}$	1529.58	1.578355
$n_{1060.0}$	1060.0	1.582772
n_t	1013.98	1.583308
n_s	852.11	1.585601
n_r	706.52	1.588685
n_C	656.27	1.590171
$n_{C'}$	643.85	1.590588
n_{He-Ne}	632.8	1.590979
n_D	589.29	1.592723
n_d	587.56	1.592800
n_e	546.07	1.594869
n_F	486.13	1.598845
$n_{F'}$	479.99	1.599341
n_g	435.83	1.603570
n_h	404.66	1.607484
n_i	365.01	1.614130
$n_{313.18}$	313.18	1.627542
$n_{302.15}$	302.15	1.631490

色散公式常数 Constants of Dispersion Formula	
K_1	2.59562934E-01
L_1	1.96231869E-02
K_2	1.24131969E+00
L_2	6.19669959E-03
K_3	7.87237390E-01
L_3	1.23753444E+02

折射率温度系数常数 Constants of dn/dt	
D_0	-2.01E-05
D_1	4.05E-09
D_2	-1.52E-11
E_0	4.00E-07
E_1	1.43E-10
λ_{TK}(μm)	0.192

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2644	$P'_{s,t}$	0.2620
$P_{C,s}$	0.5269	$P'_{C',s}$	0.5697
$P_{d,C}$	0.3031	$P'_{d,C'}$	0.2527
$P_{e,d}$	0.2385	$P'_{e,d}$	0.2364
$P_{g,F}$	0.5447	$P'_{g,F'}$	0.4831
$P_{i,h}$	0.7662	$P'_{i,h}$	0.7593

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	-0.0771	$\Delta P_{C,s}$	-0.0365
$\Delta P_{F,e}$	0.0060	$\Delta P_{g,F}$	0.0154

着色度 Color Code	
λ_{80}/λ_5	350/285
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	567
T_s (℃)	588
$T_{10^{14.5}}$ (℃)	524
$T_{10^{13}}$ (℃)	547
$T_{10^{7.6}}$(℃)	633
$\alpha_{-30/70℃}$(10^{-7}/K)	124
$\alpha_{100/300℃}$(10^{-7}/K)	145
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	2
CR	1
RC(S)	1
RA(S)	1

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.992	0.983
2200	0.995	0.991
2000	0.997	0.995
1800	0.998	0.997
1600	0.999	0.998
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.997
700	0.998	0.997
650	0.998	0.997
600	0.998	0.997
550	0.998	0.997
500	0.998	0.996
480	0.997	0.995
460	0.997	0.994
440	0.996	0.993
420	0.996	0.993
400	0.995	0.991
390	0.994	0.989
380	0.991	0.982
370	0.983	0.966
360	0.964	0.930
350	0.932	0.868
340	0.872	0.761
330	0.780	0.609
320	0.656	0.430
310	0.504	0.254
300	0.387	0.150
290	0.285	0.081
280	0.207	0.043

机械性质 Mechanical Properties	
H_K (10^7Pa)	372
F_A	435
E (10^7Pa)	7385
G (10^7Pa)	2840
μ	0.300
B (10^{-12}/Pa)	0.34

其他性质 Other Properties	
ρ (g/cm^3)	4.29

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	-7.0	-6.9	-6.8	-6.6	-6.5	-6.2
-40～-20	-7.4	-7.2	-7.0	-7.0	-6.7	-6.6
-20～0	-7.8	-7.5	-7.5	-7.4	-7.2	-6.9
0～20	-7.8	-7.6	-7.6	-7.4	-7.3	-7.0
20～40	-8.0	-7.7	-7.7	-7.5	-7.3	-7.2
40～60	-8.0	-7.8	-7.7	-7.6	-7.3	-7.2
60～80	-8.1	-7.9	-7.7	-7.7	-7.4	-7.2
80～100	-8.2	-7.9	-7.8	-7.8	-7.5	-7.3
100～120	-8.3	-8.1	-8.0	-7.9	-7.7	-7.4
120～140	-8.5	-8.3	-8.1	-8.1	-7.8	-7.6

CDGM

H-ZPK7	569713	n_d = 1.569070	υ_d = 71.30	$n_F - n_C$ = 0.007981
		n_e = 1.570974	υ_e = 70.90	$n_{F'} - n_{C'}$ = 0.008053

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	1.548918
$n_{1970.09}$	1970.09	1.552206
$n_{1529.58}$	1529.58	1.555814
$n_{1060.0}$	1060.0	1.559851
n_t	1013.98	1.560343
n_s	852.11	1.562448
n_r	706.52	1.565284
n_C	656.27	1.566651
$n_{C'}$	643.85	1.567035
n_{He-Ne}	632.8	1.567394
n_D	589.29	1.568999
n_d	587.56	1.569070
n_e	546.07	1.570974
n_F	486.13	1.574632
$n_{F'}$	479.99	1.575088
n_g	435.83	1.578976
n_h	404.66	1.582571
n_i	365.01	1.588667
$n_{313.18}$	313.18	1.600922
$n_{302.15}$	302.15	1.604515

色散公式常数 Constants of Dispersion Formula

K_1	7.25400532E-01
L_1	2.96983783E-03
K_2	7.03767661E-01
L_2	1.34342640E-02
K_3	7.72283140E-01
L_3	1.35211711E+02

折射率温度系数常数 Constants of dn/dt

D_0	-2.47E-05
D_1	-2.21E-09
D_2	5.20E-12
E_0	4.58E-07
E_1	5.69E-10
λ_{TK}(μm)	0.082

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2638	$P'_{s,t}$	0.2614
$P_{C,s}$	0.5266	$P'_{C',s}$	0.5696
$P_{d,C}$	0.3031	$P'_{d,C'}$	0.2527
$P_{e,d}$	0.2386	$P'_{e,d}$	0.2364
$P_{g,F}$	0.5443	$P'_{g,F'}$	0.4828
$P_{i,h}$	0.7638	$P'_{i,h}$	0.7570

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	-0.0919	$\Delta P_{C,s}$	-0.0437
$\Delta P_{F,e}$	0.0075	$\Delta P_{g,F}$	0.0200

着色度 Color Code

λ_{80}/λ_5	340/270
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	499
T_s (℃)	523
$T_{10^{14.5}}$ (℃)	461
$T_{10^{13}}$ (℃)	485
$T_{10^{7.6}}$(℃)	566
$\alpha_{-30/70℃}$(10^{-7}/K)	134
$\alpha_{100/300℃}$(10^{-7}/K)	159
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	1
CR	1
RC(S)	1
RA(S)	1

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.998	0.995
2200	0.998	0.997
2000	0.999	0.998
1800	0.999	0.998
1600	0.999	0.998
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.998	0.997
950	0.998	0.996
900	0.998	0.996
850	0.998	0.996
800	0.998	0.996
700	0.998	0.996
650	0.998	0.996
600	0.998	0.996
550	0.998	0.996
500	0.998	0.996
480	0.998	0.996
460	0.998	0.996
440	0.998	0.996
420	0.998	0.996
400	0.998	0.996
390	0.998	0.996
380	0.997	0.994
370	0.994	0.987
360	0.988	0.977
350	0.977	0.954
340	0.955	0.913
330	0.913	0.834
320	0.843	0.711
310	0.722	0.522
300	0.607	0.369
290	0.463	0.214
280	0.370	0.137

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	-8.7	-8.6	-8.5	-8.4	-8.3	-7.9
-40～-20	-9.0	-8.9	-8.8	-8.7	-8.5	-8.3
-20～0	-9.3	-9.0	-8.9	-8.8	-8.8	-8.7
0～20	-9.7	-9.4	-9.3	-9.2	-9.0	-8.9
20～40	-10.0	-9.7	-9.5	-9.5	-9.3	-9.1
40～60	-10.0	-9.8	-9.6	-9.5	-9.5	-9.2
60～80	-10.1	-9.9	-9.8	-9.7	-9.5	-9.3
80～100	-10.2	-10.0	-9.9	-9.8	-9.6	-9.4
100～120	-10.3	-10.1	-10.0	-9.9	-9.7	-9.6
120～140	-10.4	-10.2	-10.1	-10.0	-9.8	-9.7

机械性质 Mechanical Properties

H_K (10^7Pa)	338
F_A	402
E (10^7Pa)	6638
G (10^7Pa)	2541
μ	0.306
B (10^{-12}/Pa)	0.18

其他性质 Other Properties

ρ (g/cm^3)	4.36

备注 Remarks

CDGM

H-BaK1	530605	n_d = 1.53028	υ_d = 60.47	$n_F - n_C$ = 0.008770
		n_e = 1.53237	υ_e = 60.17	$n_{F'} - n_{C'}$ = 0.008847

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.52035
n_s	852.11	1.52286
n_r	706.52	1.52608
n_C	656.27	1.52761
$n_{C'}$	643.85	1.52803
n_{He-Ne}	632.8	1.52843
n_D	589.29	1.53020
n_d	587.56	1.53028
n_e	546.07	1.53237
n_F	486.13	1.53638
$n_{F'}$	479.99	1.53688
n_g	435.83	1.54114
n_h	404.66	1.54509
n_i	365.01	1.55181
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	2.3086570E+00
A_1	-8.7290400E-03
A_2	1.1953397E-02
A_3	1.5970091E-04
A_4	6.9980591E-06
A_5	-3.3371754E-07

折射率温度系数常数 Constants of dn/dt	
D_0	-6.33E-07
D_1	1.53E-08
D_2	-1.21E-10
E_0	4.68E-07
E_1	1.43E-09
λ_{TK}(μm)	0.210

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2862	$P'_{s,t}$	0.2837
$P_{C,s}$	0.5416	$P'_{C',s}$	0.5844
$P_{d,C}$	0.3046	$P'_{d,C'}$	0.2542
$P_{e,d}$	0.2381	$P'_{e,d}$	0.2360
$P_{g,F}$	0.5429	$P'_{g,F'}$	0.4816
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	-0.0034	$\Delta P_{C,s}$	-0.0031
$\Delta P_{F,e}$	0.0006	$\Delta P_{g,F}$	0.0002

着色度 Color Code	
λ_{80}/λ_5	320/285
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	564
T_s (℃)	645
$T_{10}^{14.5}$ (℃)	506
T_{10}^{13} (℃)	553
$T_{10}^{7.6}$(℃)	744
$\alpha_{-30/70℃}$(10^{-7}/K)	73
$\alpha_{100/300℃}$(10^{-7}/K)	90
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	1
CR	1
RC(S)	1
RA(S)	1

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.893	0.798
2200	0.917	0.840
2000	0.964	0.928
1800	0.983	0.965
1600	0.995	0.990
1400	0.994	0.987
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.997
700	0.998	0.997
650	0.998	0.997
600	0.998	0.997
550	0.998	0.997
500	0.998	0.996
480	0.998	0.996
460	0.997	0.994
440	0.996	0.993
420	0.996	0.993
400	0.996	0.993
390	0.996	0.992
380	0.995	0.991
370	0.995	0.990
360	0.995	0.991
350	0.993	0.986
340	0.984	0.968
330	0.971	0.942
320	0.928	0.862
310	0.834	0.696
300	0.649	0.421
290	0.375	0.141
280	0.167	0.028

机械性质 Mechanical Properties	
H_K (10^7Pa)	486
F_A	85
E (10^7Pa)	7095
G (10^7Pa)	2900
μ	0.223
B (10^{-12}/Pa)	2.76

其他性质 Other Properties	
ρ (g/cm^3)	2.74

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	0.4	1.0	1.2	1.2	1.4	1.9
-20～0	1.2	1.6	1.6	1.7	1.7	2.2
0～20	1.4	1.6	1.7	1.8	2.3	2.3
20～40	1.3	1.7	1.9	2.1	2.4	2.7
40～60	1.3	1.7	2.0	2.0	2.5	2.9
60～80	1.5	1.8	1.9	2.1	2.6	3.1
80～100						
100～120						
120～140						

CDGM

H-BaK2	540597	n_d = 1.53996	υ_d = 59.72	$n_F - n_C$ = 0.009041
		n_e = 1.54212	υ_e = 59.45	$n_{F'} - n_{C'}$ = 0.009120

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.52978
n_s	852.11	1.53232
n_r	706.52	1.53564
n_C	656.27	1.53721
$n_{C'}$	643.85	1.53765
n_{He-Ne}	632.8	1.53806
n_D	589.29	1.53988
n_d	587.56	1.53996
n_e	546.07	1.54212
n_F	486.13	1.54625
$n_{F'}$	479.99	1.54677
n_g	435.83	1.55117
n_h	404.66	1.55526
n_i	365.01	1.56224
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

A_0	2.3352799E+00
A_1	-7.8806451E-03
A_2	1.3514507E-02
A_3	-1.4228177E-04
A_4	4.6186558E-05
A_5	-2.0768969E-06

折射率温度系数常数 Constants of dn/dt

D_0	-1.36E-06
D_1	2.63E-08
D_2	-8.17E-11
E_0	4.48E-07
E_1	-8.32E-10
λ_{TK}(μm)	0.226

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2809	$P'_{s,t}$	0.2785
$P_{C,s}$	0.5409	$P'_{C',s}$	0.5844
$P_{d,C}$	0.3042	$P'_{d,C'}$	0.2533
$P_{e,d}$	0.2389	$P'_{e,d}$	0.2368
$P_{g,F}$	0.5442	$P'_{g,F'}$	0.4825
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	-0.0059	$\Delta P_{C,s}$	-0.0021
$\Delta P_{F,e}$	-0.0003	$\Delta P_{g,F}$	0.0002

着色度 Color Code

λ_{80}/λ_5	320/280
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	555
T_s (℃)	627
$T_{10^{14.5}}$ (℃)	
$T_{10^{13}}$ (℃)	
$T_{10^{7.6}}$(℃)	742
$\alpha_{-30/70℃}$(10^{-7}/K)	80
$\alpha_{100/300℃}$(10^{-7}/K)	94
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	1
CR	
RC(S)	1
RA(S)	2

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.929	0.862
2200	0.948	0.899
2000	0.977	0.955
1800	0.989	0.978
1600	0.997	0.994
1400	0.996	0.992
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.997
700	0.998	0.997
650	0.998	0.997
600	0.998	0.997
550	0.998	0.997
500	0.998	0.997
480	0.998	0.997
460	0.998	0.997
440	0.997	0.994
420	0.997	0.994
400	0.996	0.993
390	0.996	0.992
380	0.996	0.993
370	0.996	0.992
360	0.994	0.989
350	0.991	0.983
340	0.985	0.970
330	0.971	0.942
320	0.933	0.870
310	0.851	0.725
300	0.691	0.478
290	0.449	0.202
280	0.212	0.045

机械性质 Mechanical Properties

H_K (10^7Pa)	540
F_A	87
E (10^7Pa)	6970
G (10^7Pa)	2820
μ	0.236
B (10^{-12}/Pa)	

其他性质 Other Properties

ρ (g/cm^3)	2.84

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	0.4	0.7	0.9	1.0	1.3	2.0
-20～0	0.7	0.9	1.0	1.3	1.4	1.8
0～20	0.7	1.2	1.4	1.6	1.9	2.4
20～40	1.3	1.4	1.6	1.8	2.3	2.4
40～60	1.3	1.5	1.8	1.9	2.2	2.3
60～80	1.4	1.6	1.8	2.1	2.3	2.7
80～100						
100～120						
120～140						

CDGM

H-BaK3	547628	n_d = 1.54678	υ_d = 62.78	$n_F - n_C$ = 0.008710
		n_e = 1.54886	υ_e = 62.44	$n_{F'} - n_{C'}$ = 0.008790

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.53666
n_s	852.11	1.53927
n_r	706.52	1.54257
n_C	656.27	1.54411
$n_{C'}$	643.85	1.54453
n_{He-Ne}	632.8	1.54493
n_D	589.29	1.54670
n_d	587.56	1.54678
n_e	546.07	1.54886
n_F	486.13	1.55282
$n_{F'}$	479.99	1.55332
n_g	435.83	1.55750
n_h	404.66	1.56137
n_i	365.01	1.56791
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

A_0	2.3587016E+00
A_1	-9.5060047E-03
A_2	1.2794840E-02
A_3	-8.2895124E-05
A_4	3.5627075E-05
A_5	-1.7414215E-06

折射率温度系数常数 Constants of dn/dt

D_0	1.95E-06
D_1	2.23E-08
D_2	-5.19E-12
E_0	5.17E-07
E_1	2.24E-10
λ_{TK}(μm)	0.142

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2997	$P'_{s,t}$	0.2969
$P_{C,s}$	0.5557	$P'_{C',s}$	0.5984
$P_{d,C}$	0.3065	$P'_{d,C'}$	0.2560
$P_{e,d}$	0.2388	$P'_{e,d}$	0.2366
$P_{g,F}$	0.5374	$P'_{g,F'}$	0.4757
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	0.0133	$\Delta P_{C,s}$	0.0055
$\Delta P_{F,e}$	-0.0008	$\Delta P_{g,F}$	-0.0014

着色度 Color Code

λ_{80}/λ_5	325/275
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	590
T_s (℃)	656
$T_{10}^{14.5}$ (℃)	531
T_{10}^{13} (℃)	572
$T_{10}^{7.6}$(℃)	731
$\alpha_{-30/70℃}$(10^{-7}/K)	62
$\alpha_{100/300℃}$(10^{-7}/K)	80
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	2
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.899	0.809
2200	0.934	0.873
2000	0.980	0.961
1800	0.991	0.981
1600	0.996	0.992
1400	0.989	0.978
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.999	0.997
650	0.998	0.997
600	0.998	0.997
550	0.998	0.997
500	0.998	0.997
480	0.998	0.996
460	0.998	0.996
440	0.997	0.994
420	0.997	0.994
400	0.997	0.994
390	0.996	0.992
380	0.995	0.990
370	0.994	0.988
360	0.991	0.983
350	0.985	0.970
340	0.973	0.946
330	0.951	0.905
320	0.909	0.827
310	0.823	0.678
300	0.675	0.456
290	0.457	0.209
280		

机械性质 Mechanical Properties

H_K (10^7Pa)	530
F_A	109
E (10^7Pa)	7989
G (10^7Pa)	3249
μ	0.230
B (10^{-12}/Pa)	2.61

其他性质 Other Properties

ρ (g/cm^3)	2.84

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	2.3	2.5	2.8	2.9	3.2	3.3
-20～0	2.4	2.5	3.0	3.1	3.3	3.5
0～20	2.3	2.4	2.8	2.9	3.2	3.6
20～40	2.6	3.0	3.2	3.5	3.7	3.9
40～60	3.0	3.3	3.4	3.6	3.9	4.1
60～80	3.0	3.2	3.4	3.6	4.1	4.4
80～100						
100～120						
120～140						

H-BaK4	552634	n_d = 1.55248	υ_d = 63.37	$n_F - n_C$ = 0.008719
		n_e = 1.55456	υ_e = 63.10	$n_{F'} - n_{C'}$ = 0.008788

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.54234
n_s	852.11	1.54498
n_r	706.52	1.54828
n_C	656.27	1.54981
$n_{C'}$	643.85	1.55023
n_{He-Ne}	632.8	1.55063
n_D	589.29	1.55240
n_d	587.56	1.55248
n_e	546.07	1.55456
n_F	486.13	1.55853
$n_{F'}$	479.99	1.55902
n_g	435.83	1.56320
n_h	404.66	1.56705
n_i	365.01	1.57358
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	2.3793440E+00
A_1	-1.1157329E-02
A_2	1.0770657E-02
A_3	5.3749401E-04
A_4	-4.8588526E-05
A_5	2.4311027E-06

折射率温度系数常数 Constants of dn/dt	
D_0	9.33E-07
D_1	2.01E-08
D_2	-2.04E-11
E_0	3.94E-07
E_1	2.14E-10
λ_{TK}(μm)	0.158

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.3028	$P'_{s,t}$	0.3004
$P_{C,s}$	0.5540	$P'_{C',s}$	0.5974
$P_{d,C}$	0.3062	$P'_{d,C'}$	0.2560
$P_{e,d}$	0.2386	$P'_{e,d}$	0.2367
$P_{g,F}$	0.5356	$P'_{g,F'}$	0.4756
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0119	$\Delta P_{C,s}$	0.0024
$\Delta P_{F,e}$	0.0002	$\Delta P_{g,F}$	-0.0022

着色度 Color Code	
λ_{80}/λ_5	330/280
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	611
T_s (℃)	667
$T_{10^{14.5}}$ (℃)	546
$T_{10^{13}}$ (℃)	588
$T_{10^{7.6}}$(℃)	753
$\alpha_{-30/70℃}$(10^{-7}/K)	61
$\alpha_{100/300℃}$(10^{-7}/K)	76
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	3
D_A	3
CR	2
RC(S)	1
RA(S)	2

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.898	0.806
2200	0.932	0.869
2000	0.981	0.962
1800	0.990	0.981
1600	0.996	0.992
1400	0.989	0.978
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.997
700	0.998	0.997
650	0.998	0.997
600	0.998	0.997
550	0.998	0.997
500	0.998	0.996
480	0.998	0.996
460	0.998	0.996
440	0.996	0.992
420	0.996	0.992
400	0.995	0.991
390	0.994	0.989
380	0.993	0.987
370	0.992	0.984
360	0.988	0.977
350	0.981	0.962
340	0.964	0.930
330	0.939	0.882
320	0.888	0.789
310	0.796	0.633
300	0.645	0.416
290	0.438	0.192
280	0.212	0.045

机械性质 Mechanical Properties	
H_K (10^7Pa)	550
F_A	108
E (10^7Pa)	8277
G (10^7Pa)	3370
μ	0.228
B (10^{-12}/Pa)	2.44

其他性质 Other Properties	
ρ (g/cm^3)	2.90

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	1.8	2.1	2.1	2.1	2.5	2.6
-20～0	1.8	2.0	2.3	2.3	2.5	2.6
0～20	1.9	2.0	2.3	2.7	2.7	3.0
20～40	2.1	2.3	2.7	2.7	2.8	3.3
40～60	2.3	2.8	2.8	2.9	3.0	3.2
60～80	2.4	2.8	2.8	2.9	3.4	3.6
80～100						
100～120						
120～140						

CDGM

H-BaK5	561583	n_d = 1.56069	υ_d = 58.34	$n_F - n_C$ = 0.009610
		n_e = 1.56298	υ_e = 58.07	$n_{F'} - n_{C'}$ = 0.009694

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.54997
n_s	852.11	1.55262
n_r	706.52	1.55611
n_C	656.27	1.55777
$n_{C'}$	643.85	1.55823
n_{He-Ne}	632.8	1.55867
n_D	589.29	1.56060
n_d	587.56	1.56069
n_e	546.07	1.56298
n_F	486.13	1.56738
$n_{F'}$	479.99	1.56793
n_g	435.83	1.57262
n_h	404.66	1.57697
n_i	365.01	1.58440
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

A_0	2.3969877E+00
A_1	-8.1409391E-03
A_2	1.4163553E-02
A_3	-1.3182657E-05
A_4	3.0937851E-05
A_5	-1.3335975E-06

折射率温度系数常数 Constants of dn/dt

D_0	1.61E-07
D_1	2.00E-08
D_2	-4.99E-11
E_0	5.12E-07
E_1	4.45E-10
λ_{TK}(μm)	0.210

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2758	$P'_{s,t}$	0.2734
$P_{C,s}$	0.5359	$P'_{C',s}$	0.5787
$P_{d,C}$	0.3039	$P'_{d,C'}$	0.2538
$P_{e,d}$	0.2383	$P'_{e,d}$	0.2362
$P_{g,F}$	0.5453	$P'_{g,F'}$	0.4838
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	-0.0095	$\Delta P_{C,s}$	-0.0038
$\Delta P_{F,e}$	0.0000	$\Delta P_{g,F}$	-0.0011

着色度 Color Code

λ_{80}/λ_5	340/300
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	586
T_s (℃)	657
$T_{10^{14.5}}$ (℃)	542
$T_{10^{13}}$ (℃)	586
$T_{10^{7.6}}$(℃)	754
$\alpha_{-30/70℃}$(10^{-7}/K)	76
$\alpha_{100/300℃}$(10^{-7}/K)	88
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	2
CR	1
RC(S)	1
RA(S)	1

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.936	0.877
2200	0.955	0.912
2000	0.983	0.966
1800	0.992	0.984
1600	0.999	0.998
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.997
700	0.997	0.995
650	0.997	0.994
600	0.997	0.994
550	0.997	0.994
500	0.996	0.992
480	0.994	0.989
460	0.994	0.988
440	0.994	0.988
420	0.994	0.988
400	0.994	0.988
390	0.992	0.985
380	0.989	0.978
370	0.987	0.974
360	0.978	0.957
350	0.960	0.921
340	0.921	0.848
330	0.840	0.710
320	0.690	0.480
310	0.450	0.200
300	0.170	0.030
290		
280		

机械性质 Mechanical Properties

H_K (10^7Pa)	542
F_A	106
E (10^7Pa)	7539
G (10^7Pa)	3033
μ	0.243
B (10^{-12}/Pa)	2.62

其他性质 Other Properties

ρ (g/cm^3)	3.01

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	1.1	1.6	1.8	2.0	2.4	2.9
-20～0	1.6	1.8	2.0	2.1	2.4	2.8
0～20	1.7	2.1	2.2	2.4	2.8	3.0
20～40	1.8	2.2	2.5	2.6	3.0	3.3
40～60	2.0	2.5	2.7	2.8	3.2	3.5
60～80	2.0	2.6	2.7	2.9	3.2	3.8
80～100						
100～120						
120～140						

CDGM

H-BaK6	564608	n_d = 1.563880	υ_d = 60.76	$n_F - n_C$ = 0.009280
		n_e = 1.566093	υ_e = 60.51	$n_{F'} - n_{C'}$ = 0.009355

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	1.535864
$n_{1970.09}$	1970.09	1.541241
$n_{1529.58}$	1529.58	1.546915
$n_{1060.0}$	1060.0	1.552683
n_t	1013.98	1.553331
n_s	852.11	1.556004
n_r	706.52	1.559433
n_C	656.27	1.561049
$n_{C'}$	643.85	1.561501
n_{He-Ne}	632.8	1.561922
n_D	589.29	1.563797
n_d	587.56	1.563880
n_e	546.07	1.566093
n_F	486.13	1.570329
$n_{F'}$	479.99	1.570856
n_g	435.83	1.575355
n_h	404.66	1.579519
n_i	365.01	1.586606
$n_{313.18}$	313.18	1.600976
$n_{302.15}$	302.15	1.605225

色散公式常数 Constants of Dispersion Formula	
K_1	8.13984879E-01
L_1	3.92398403E-03
K_2	5.95734077E-01
L_2	1.64900015E-02
K_3	1.00704301E+00
L_3	1.07665801E+02

折射率温度系数常数 Constants of dn/dt	
D_0	1.25E-06
D_1	1.83E-08
D_2	-1.09E-12
E_0	3.41E-07
E_1	-6.09E-10
λ_{TK}(μm)	0.246

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2880	$P'_{s,t}$	0.2857
$P_{C,s}$	0.5436	$P'_{C',s}$	0.5876
$P_{d,C}$	0.3051	$P'_{d,C'}$	0.2543
$P_{e,d}$	0.2385	$P'_{e,d}$	0.2366
$P_{g,F}$	0.5416	$P'_{g,F'}$	0.4809
$P_{i,h}$	0.7637	$P'_{i,h}$	0.7576

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	-0.0009	$\Delta P_{C,s}$	-0.0018
$\Delta P_{F,e}$	-0.0001	$\Delta P_{g,F}$	-0.0006

着色度 Color Code	
λ_{80}/λ_5	340/300
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	616
T_s (℃)	671
$T_{10^{14.5}}$ (℃)	557
$T_{10^{13}}$ (℃)	589
$T_{10^{7.6}}$(℃)	755
$\alpha_{-30/70℃}$(10^{-7}/K)	60
$\alpha_{100/300℃}$(10^{-7}/K)	77
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	2
CR	
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.902	0.814
2200	0.933	0.870
2000	0.979	0.958
1800	0.989	0.978
1600	0.995	0.991
1400	0.989	0.979
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.997
700	0.997	0.995
650	0.997	0.995
600	0.997	0.994
550	0.997	0.994
500	0.996	0.993
480	0.996	0.993
460	0.997	0.994
440	0.995	0.991
420	0.996	0.993
400	0.995	0.991
390	0.994	0.989
380	0.993	0.987
370	0.990	0.980
360	0.982	0.965
350	0.964	0.929
340	0.926	0.857
330	0.846	0.716
320	0.679	0.461
310	0.392	0.154
300	0.141	0.020
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	506
F_A	107
E (10^7Pa)	8063
G (10^7Pa)	3252
μ	0.240
B (10^{-12}/Pa)	

其他性质 Other Properties	
ρ (g/cm^3)	3.05

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	1.8	2.0	2.4	2.8	3.3	3.3
-20～0	2.3	2.2	2.5	2.9	3.1	3.4
0～20	2.1	2.4	2.5	2.6	2.7	3.3
20～40	2.1	2.5	2.7	2.9	3.2	3.3
40～60	2.4	2.7	2.8	2.9	3.2	3.3
60～80	2.5	2.9	3.0	3.0	3.1	3.6
80～100						
100～120						
120～140						

CDGM

H-BaK7	569560	n_d = 1.568830	υ_d = 56.04	$n_F - n_C$ = 0.010150
		n_e = 1.571248	υ_e = 55.76	$n_{F'} - n_{C'}$ = 0.010245

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	1.540196
$n_{1970.09}$	1970.09	1.545438
$n_{1529.58}$	1529.58	1.551039
$n_{1060.0}$	1060.0	1.556883
n_t	1013.98	1.557555
n_s	852.11	1.560357
n_r	706.52	1.564015
n_C	656.27	1.565758
$n_{C'}$	643.85	1.566246
n_{He-Ne}	632.8	1.566702
n_D	589.29	1.568740
n_d	587.56	1.568830
n_e	546.07	1.571248
n_F	486.13	1.575908
$n_{F'}$	479.99	1.576491
n_g	435.83	1.581486
n_h	404.66	1.586147
n_i	365.01	1.594153
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

K_1	6.59469741E-01
L_1	7.66009635E-04
K_2	7.62196700E-01
L_2	1.77403402E-02
K_3	1.19935835E+00
L_3	1.29975103E+02

折射率温度系数常数 Constants of dn/dt

D_0	6.07E-07
D_1	1.74E-08
D_2	-3.75E-11
E_0	5.69E-07
E_1	2.67E-10
λ_{TK}(μm)	0.188

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2761	$P'_{s,t}$	0.2735
$P_{C,s}$	0.5321	$P'_{C',s}$	0.5748
$P_{d,C}$	0.3027	$P'_{d,C'}$	0.2522
$P_{e,d}$	0.2382	$P'_{e,d}$	0.2360
$P_{g,F}$	0.5496	$P'_{g,F'}$	0.4876
$P_{i,h}$	0.7888	$P'_{i,h}$	0.7815

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	-0.0022	$\Delta P_{C,s}$	-0.0021
$\Delta P_{F,e}$	0.0000	$\Delta P_{g,F}$	-0.0007

着色度 Color Code

λ_{80}/λ_5	360/330
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	581
T_s (℃)	642
$T_{10^{14.5}}$ (℃)	541
$T_{10^{13}}$ (℃)	580
$T_{10^{7.6}}$(℃)	733
$\alpha_{-30/70℃}$(10^{-7}/K)	72
$\alpha_{100/300℃}$(10^{-7}/K)	90
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	1
CR	2
RC(S)	1
RA(S)	1

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.914	0.835
2200	0.940	0.884
2000	0.979	0.958
1800	0.988	0.977
1600	0.996	0.992
1400	0.992	0.985
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.997
700	0.997	0.995
650	0.997	0.994
600	0.996	0.993
550	0.996	0.993
500	0.996	0.992
480	0.995	0.991
460	0.994	0.989
440	0.994	0.988
420	0.994	0.988
400	0.994	0.989
390	0.991	0.983
380	0.989	0.978
370	0.980	0.960
360	0.956	0.914
350	0.893	0.798
340	0.727	0.529
330	0.386	0.149
320		
310		
300		
290		
280		

机械性质 Mechanical Properties

H_K (10^7Pa)	578
F_A	117
E (10^7Pa)	8241
G (10^7Pa)	3315
μ	0.243
B (10^{-12}/Pa)	2.53

其他性质 Other Properties

ρ (g/cm^3)	2.83

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	1.7	2.1	2.3	2.3	2.7	3.1
-40～-20	1.7	2.2	2.3	2.5	2.9	3.1
-20～0	1.7	2.2	2.4	2.5	2.9	3.3
0～20	1.9	2.2	2.6	2.9	3.1	3.4
20～40	2.1	2.6	2.8	3.0	3.4	3.7
40～60	2.1	2.7	2.8	3.0	3.4	3.7
60～80	2.3	2.7	2.8	3.0	3.4	3.8
80～100	2.3	2.7	2.9	3.0	3.4	4.0
100～120	2.5	3.0	3.0	3.4	3.7	4.3
120～140	2.5	3.0	3.2	3.4	3.9	4.3

CDGM

H-BaK7GT	569560	n_d = 1.568830	υ_d = 56.04	$n_F - n_C$ = 0.010150
		n_e = 1.571248	υ_e = 55.76	$n_{F'} - n_{C'}$ = 0.010245

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	1.540196
$n_{1970.09}$	1970.09	1.545438
$n_{1529.58}$	1529.58	1.551039
$n_{1060.0}$	1060.0	1.556883
n_t	1013.98	1.557555
n_s	852.11	1.560357
n_r	706.52	1.564015
n_C	656.27	1.565758
$n_{C'}$	643.85	1.566246
n_{He-Ne}	632.8	1.566702
n_D	589.29	1.568740
n_d	587.56	1.568830
n_e	546.07	1.571248
n_F	486.13	1.575908
$n_{F'}$	479.99	1.576491
n_g	435.83	1.581486
n_h	404.66	1.586147
n_i	365.01	1.594153
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
K_1	6.59469741E-01
L_1	7.66009635E-04
K_2	7.62196700E-01
L_2	1.77403402E-02
K_3	1.19935835E+00
L_3	1.29975103E+02

折射率温度系数常数 Constants of dn/dt	
D_0	6.07E-07
D_1	1.74E-08
D_2	-3.75E-11
E_0	5.69E-07
E_1	2.67E-10
λ_{TK}(μm)	0.188

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2761	$P'_{s,t}$	0.2735
$P_{C,s}$	0.5321	$P'_{C',s}$	0.5748
$P_{d,C}$	0.3027	$P'_{d,C'}$	0.2522
$P_{e,d}$	0.2382	$P'_{e,d}$	0.2360
$P_{g,F}$	0.5496	$P'_{g,F'}$	0.4876
$P_{i,h}$	0.7888	$P'_{i,h}$	0.7815

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	-0.0022	$\Delta P_{C,s}$	-0.0021
$\Delta P_{F,e}$	0.0000	$\Delta P_{g,F}$	-0.0007

着色度 Color Code	
λ_{80}/λ_5	355/325
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	581
T_s (℃)	642
$T_{10^{14.5}}$ (℃)	541
$T_{10^{13}}$ (℃)	580
$T_{10^{7.6}}$(℃)	733
$\alpha_{-30/70℃}$(10^{-7}/K)	72
$\alpha_{100/300℃}$(10^{-7}/K)	90
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	1
CR	2
RC(S)	1
RA(S)	1

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.921	0.848
2200	0.946	0.895
2000	0.981	0.963
1800	0.990	0.981
1600	0.997	0.994
1400	0.994	0.988
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.998	0.997
650	0.998	0.997
600	0.998	0.997
550	0.998	0.997
500	0.998	0.997
480	0.998	0.997
460	0.998	0.997
440	0.997	0.995
420	0.997	0.995
400	0.996	0.993
390	0.995	0.990
380	0.992	0.985
370	0.986	0.972
360	0.966	0.934
350	0.911	0.830
340	0.756	0.572
330	0.415	0.172
320	0.161	0.026
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	578
F_A	117
E (10^7Pa)	8241
G (10^7Pa)	3315
μ	0.243
B (10^{-12}/Pa)	2.53

其他性质 Other Properties	
ρ (g/cm^3)	2.83

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	1.7	2.1	2.3	2.3	2.7	3.1
-40～-20	1.7	2.2	2.3	2.5	2.9	3.1
-20～0	1.7	2.2	2.4	2.5	2.9	3.3
0～20	1.9	2.2	2.6	2.9	3.1	3.4
20～40	2.1	2.6	2.8	3.0	3.4	3.7
40～60	2.1	2.7	2.8	3.0	3.4	3.7
60～80	2.3	2.7	2.8	3.0	3.4	3.8
80～100	2.3	2.7	2.9	3.0	3.4	4.0
100～120	2.5	3.0	3.0	3.4	3.7	4.3
120～140	2.5	3.0	3.2	3.4	3.9	4.3

H-BaK7A	569561	n_d = 1.56883	υ_d = 56.12	$n_F - n_C$ = 0.010136
		n_e = 1.57124	υ_e = 55.83	$n_{F'} - n_{C'}$ = 0.010231

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.55750
n_s	852.11	1.56032
n_r	706.52	1.56401
n_C	656.27	1.56575
$n_{C'}$	643.85	1.56624
n_{He-Ne}	632.8	1.56669
n_D	589.29	1.56874
n_d	587.56	1.56883
n_e	546.07	1.57124
n_F	486.13	1.57589
$n_{F'}$	479.99	1.57647
n_g	435.83	1.58144
n_h	404.66	1.58608
n_i	365.01	1.59404
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	2.4206744E+00
A_1	-9.0706260E-03
A_2	1.4847987E-02
A_3	-1.6355473E-05
A_4	3.7651588E-05
A_5	-1.5603396E-06

折射率温度系数常数 Constants of dn/dt	
D_0	5.77E-06
D_1	1.48E-08
D_2	2.37E-11
E_0	6.10E-07
E_1	7.99E-10
λ_{TK}(μm)	0.144

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2782	$P'_{s,t}$	0.2756
$P_{C,s}$	0.5357	$P'_{C',s}$	0.5786
$P_{d,C}$	0.3039	$P'_{d,C'}$	0.2532
$P_{e,d}$	0.2378	$P'_{e,d}$	0.2356
$P_{g,F}$	0.5476	$P'_{g,F'}$	0.4858
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0032	$\Delta P_{C,s}$	0.0013
$\Delta P_{F,e}$	-0.0003	$\Delta P_{g,F}$	-0.0026

着色度 Color Code	
λ_{80}/λ_5	355/325
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	587
T_s (℃)	647
$T_{10}^{14.5}$ (℃)	541
T_{10}^{13} (℃)	572
$T_{10}^{7.6}$(℃)	731
$\alpha_{-30/70℃}$(10^{-7}/K)	60
$\alpha_{100/300℃}$(10^{-7}/K)	74
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	1
CR	1
RC(S)	1
RA(S)	1

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.938	0.880
2200	0.958	0.918
2000	0.989	0.977
1800	0.994	0.988
1600	0.998	0.996
1400	0.995	0.990
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.997
700	0.998	0.996
650	0.998	0.996
600	0.997	0.995
550	0.997	0.995
500	0.997	0.995
480	0.997	0.995
460	0.996	0.993
440	0.994	0.989
420	0.994	0.989
400	0.995	0.990
390	0.994	0.988
380	0.990	0.980
370	0.983	0.967
360	0.964	0.930
350	0.917	0.841
340	0.793	0.629
330	0.512	0.262
320	0.164	0.027
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	541
F_A	102
E (10^7Pa)	8469
G (10^7Pa)	3406
μ	0.243
B (10^{-12}/Pa)	2.76

其他性质 Other Properties	
ρ (g/cm^3)	2.84

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	4.4	4.6	4.8	5.0	5.5	5.8
-20～0	4.4	4.6	4.9	5.0	5.5	5.8
0～20	4.4	4.6	5.1	5.2	5.6	5.8
20～40	4.4	5.0	5.2	5.4	5.6	6.0
40～60	4.5	5.0	5.2	5.5	5.8	6.2
60～80	4.7	5.4	5.5	5.8	6.0	6.7
80～100						
100～120						
120～140						

CDGM

H-BaK8	573575	n_d = 1.57250	υ_d = 57.49	$n_F - n_C$ = 0.009959
		n_e = 1.57487	υ_e = 57.20	$n_{F'} - n_{C'}$ = 0.010051

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.56148
n_s	852.11	1.56420
n_r	706.52	1.56778
n_C	656.27	1.56948
$n_{C'}$	643.85	1.56996
n_{He-Ne}	632.8	1.57041
n_D	589.29	1.57241
n_d	587.56	1.57250
n_e	546.07	1.57487
n_F	486.13	1.57944
$n_{F'}$	479.99	1.58001
n_g	435.83	1.58488
n_h	404.66	1.58941
n_i	365.01	1.59715
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	2.4334375E+00
A_1	-8.7272550E-03
A_2	1.3911104E-02
A_3	2.3851609E-04
A_4	1.0278140E-06
A_5	1.0193884E-07

折射率温度系数常数 Constants of dn/dt	
D_0	6.29E-08
D_1	1.64E-08
D_2	-1.82E-11
E_0	4.71E-07
E_1	4.87E-10
λ_{TK}(μm)	0.223

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2731	$P'_{s,t}$	0.2706
$P_{C,s}$	0.5302	$P'_{C',s}$	0.5731
$P_{d,C}$	0.3028	$P'_{d,C'}$	0.2524
$P_{e,d}$	0.2382	$P'_{e,d}$	0.2360
$P_{g,F}$	0.5462	$P'_{g,F'}$	0.4845
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	-0.0138	$\Delta P_{C,s}$	-0.0075
$\Delta P_{F,e}$	0.0007	$\Delta P_{g,F}$	-0.0016

着色度 Color Code	
λ_{80}/λ_5	330/280
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	593
T_s (℃)	662
$T_{10^{14.5}}$ (℃)	546
$T_{10^{13}}$ (℃)	589
$T_{10^{7.6}}$(℃)	754
$\alpha_{-30/70℃}$(10^{-7}/K)	74
$\alpha_{100/300℃}$(10^{-7}/K)	89
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	2
CR	2
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.919	0.845
2200	0.945	0.893
2000	0.978	0.956
1800	0.988	0.976
1600	0.996	0.992
1400	0.994	0.988
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.998	0.997
650	0.998	0.997
600	0.998	0.997
550	0.998	0.997
500	0.997	0.995
480	0.997	0.995
460	0.997	0.995
440	0.997	0.995
420	0.997	0.995
400	0.997	0.995
390	0.996	0.993
380	0.997	0.995
370	0.996	0.992
360	0.993	0.987
350	0.987	0.974
340	0.974	0.949
330	0.949	0.901
320	0.901	0.811
310	0.810	0.656
300	0.660	0.436
290	0.455	0.207
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	530
F_A	112
E (10^7Pa)	7378
G (10^7Pa)	2972
μ	0.241
B (10^{-12}/Pa)	2.67

其他性质 Other Properties	
ρ (g/cm^3)	3.18

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	1.5	1.8	1.9	2.1	2.6	2.9
-20～0	1.6	1.7	1.9	2.1	2.6	3.0
0～20	1.8	2.1	2.3	2.4	2.7	3.0
20～40	1.8	2.3	2.4	2.6	3.0	3.0
40～60	1.8	2.3	2.4	2.6	3.0	3.2
60～80	1.8	2.4	2.7	2.9	3.3	3.8
80～100						
100～120						
120～140						

CDGM

H-ZK1	569630	n_d = 1.56888	υ_d = 62.96	$n_F - n_C$ = 0.009036
		n_e = 1.57104	υ_e = 62.74	$n_{F'} - n_{C'}$ = 0.009102

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.55835
n_s	852.11	1.56109
n_r	706.52	1.56452
n_C	656.27	1.56611
$n_{C'}$	643.85	1.56655
n_{He-Ne}	632.8	1.56697
n_D	589.29	1.56880
n_d	587.56	1.56888
n_e	546.07	1.57104
n_F	486.13	1.57515
$n_{F'}$	479.99	1.57566
n_g	435.83	1.58000
n_h	404.66	1.58402
n_i	365.01	1.59084
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	2.4269588E+00
A_1	-1.0750851E-02
A_2	1.2802243E-02
A_3	9.2544007E-05
A_4	1.3356813E-05
A_5	-5.3889229E-07

折射率温度系数常数 Constants of dn/dt	
D_0	
D_1	
D_2	
E_0	
E_1	
λ_{TK}(μm)	

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.3032	$P'_{s,t}$	0.3010
$P_{C,s}$	0.5556	$P'_{C',s}$	0.5999
$P_{d,C}$	0.3066	$P'_{d,C'}$	0.2560
$P_{e,d}$	0.2390	$P'_{e,d}$	0.2373
$P_{g,F}$	0.5367	$P'_{g,F'}$	0.4768
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0159	$\Delta P_{C,s}$	0.0050
$\Delta P_{F,e}$	-0.0007	$\Delta P_{g,F}$	-0.0017

着色度 Color Code	
λ_{80}/λ_5	345/305
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	620
T_s (℃)	670
$T_{10^{14.5}}$ (℃)	554
$T_{10^{13}}$ (℃)	594
$T_{10^{7.6}}$(℃)	734
$\alpha_{-30/70℃}$(10^{-7}/K)	61
$\alpha_{100/300℃}$(10^{-7}/K)	75
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	3
D_A	4
CR	
RC(S)	2
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.870	0.760
2200	0.925	0.856
2000	0.980	0.960
1800	0.992	0.984
1600	0.999	0.998
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.997
700	0.998	0.997
650	0.998	0.997
600	0.998	0.997
550	0.998	0.997
500	0.998	0.996
480	0.997	0.995
460	0.997	0.994
440	0.996	0.993
420	0.996	0.993
400	0.995	0.991
390	0.993	0.987
380	0.990	0.980
370	0.985	0.971
360	0.975	0.950
350	0.955	0.912
340	0.918	0.843
330	0.850	0.730
320	0.750	0.560
310	0.590	0.350
300	0.400	0.160
290	0.200	0.040
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	534
F_A	116
E (10^7Pa)	8582
G (10^7Pa)	3459
μ	0.241
B (10^{-12}/Pa)	2.29

其他性质 Other Properties	
ρ (g/cm^3)	3.06

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	1.3	1.8	1.9	2.1	2.4	2.5
-20～0	1.3	2.1	2.1	2.3	2.6	2.7
0～20	1.5	2.2	2.4	2.4	2.7	2.8
20～40	1.6	2.3	2.5	2.6	2.8	3.0
40～60	1.9	2.3	2.5	2.6	2.8	3.1
60～80	2.3	2.4	2.6	2.7	2.9	3.3
80～100						
100～120						
120～140						

H-ZK2	583595	n_d = 1.58313	υ_d = 59.46	$n_F - n_C$ = 0.009807
		n_e = 1.58547	υ_e = 59.19	$n_{F'} - n_{C'}$ = 0.009892

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.57206
n_s	852.11	1.57485
n_r	706.52	1.57845
n_C	656.27	1.58015
$n_{C'}$	643.85	1.58062
n_{He-Ne}	632.8	1.58107
n_D	589.29	1.58304
n_d	587.56	1.58313
n_e	546.07	1.58547
n_F	486.13	1.58996
$n_{F'}$	479.99	1.59052
n_g	435.83	1.59528
n_h	404.66	1.59970
n_i	365.01	1.60722
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	2.4685224E+00
A_1	-1.0187168E-02
A_2	1.3391675E-02
A_3	3.2906071E-04
A_4	-1.2198654E-05
A_5	6.5914240E-07

折射率温度系数常数 Constants of dn/dt	
D_0	2.23E-06
D_1	2.61E-08
D_2	-7.02E-11
E_0	4.76E-07
E_1	-6.76E-10
λ_{TK}(μm)	0.184

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2845	$P'_{s,t}$	0.2820
$P_{C,s}$	0.5404	$P'_{C',s}$	0.5833
$P_{d,C}$	0.3038	$P'_{d,C'}$	0.2537
$P_{e,d}$	0.2387	$P'_{e,d}$	0.2367
$P_{g,F}$	0.5426	$P'_{g,F'}$	0.4813
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	-0.0015	$\Delta P_{C,s}$	-0.0019
$\Delta P_{F,e}$	0.0006	$\Delta P_{g,F}$	-0.0019

着色度 Color Code	
λ_{80}/λ_5	340/285
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	609
T_s (℃)	668
$T_{10^{14.5}}$ (℃)	553
$T_{10^{13}}$ (℃)	590
$T_{10^{7.6}}$(℃)	744
$\alpha_{-30/70℃}$(10^{-7}/K)	61
$\alpha_{100/300℃}$(10^{-7}/K)	78
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	6
CR	2
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.912	0.832
2200	0.953	0.908
2000	0.986	0.973
1800	0.994	0.988
1600	0.999	0.998
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.997
700	0.998	0.997
650	0.998	0.996
600	0.998	0.996
550	0.997	0.995
500	0.997	0.995
480	0.996	0.993
460	0.996	0.993
440	0.995	0.991
420	0.995	0.991
400	0.994	0.989
390	0.992	0.985
380	0.989	0.979
370	0.984	0.969
360	0.972	0.945
350	0.950	0.903
340	0.908	0.825
330	0.837	0.700
320	0.710	0.510
310	0.540	0.300
300	0.340	0.120
290	0.160	0.030
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	559
F_A	114
E (10^7Pa)	8077
G (10^7Pa)	3219
μ	0.255
B (10^{-12}/Pa)	2.39

其他性质 Other Properties	
ρ (g/cm^3)	3.24

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	1.8	2.0	2.3	2.7	2.9	3.4
-20～0	2.5	2.8	3.0	3.1	3.3	3.9
0～20	2.6	2.8	3.2	3.4	3.7	3.9
20～40	2.9	3.3	3.4	3.6	3.8	4.0
40～60	3.1	3.3	3.5	3.6	3.9	4.3
60～80	3.4	3.8	3.9	4.0	4.5	4.7
80～100						
100～120						
120～140						

H-ZK3	589613	n_d = 1.589130	υ_d = 61.25	$n_F - n_C$ = 0.009618
		n_e = 1.591425	υ_e = 61.01	$n_{F'} - n_{C'}$ = 0.009694

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	1.559583
$n_{1970.09}$	1970.09	1.565349
$n_{1529.58}$	1529.58	1.571386
$n_{1060.0}$	1060.0	1.577466
n_t	1013.98	1.578145
n_s	852.11	1.580939
n_r	706.52	1.584511
n_C	656.27	1.586192
$n_{C'}$	643.85	1.586661
n_{He-Ne}	632.8	1.587098
n_D	589.29	1.589044
n_d	587.56	1.589130
n_e	546.07	1.591425
n_F	486.13	1.595810
$n_{F'}$	479.99	1.596355
n_g	435.83	1.601001
n_h	404.66	1.605296
n_i	365.01	1.612586
$n_{313.18}$	313.18	1.627306
$n_{302.15}$	302.15	1.631642

色散公式常数 Constants of Dispersion Formula	
K_1	8.55678320E-01
L_1	4.41734284E-03
K_2	8.97778708E-01
L_2	8.96045798E+01
K_3	6.31730586E-01
L_3	1.58041790E-02

折射率温度系数常数 Constants of dn/dt	
D_0	3.08E-06
D_1	1.39E-08
D_2	-6.59E-11
E_0	3.72E-07
E_1	5.78E-10
λ_{TK}(μm)	0.211

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2905	$P'_{s,t}$	0.2882
$P_{C,s}$	0.5462	$P'_{C',s}$	0.5903
$P_{d,C}$	0.3055	$P'_{d,C'}$	0.2547
$P_{e,d}$	0.2386	$P'_{e,d}$	0.2367
$P_{g,F}$	0.5397	$P'_{g,F'}$	0.4793
$P_{i,h}$	0.7580	$P'_{i,h}$	0.7520

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0018	$\Delta P_{C,s}$	-0.0004
$\Delta P_{F,e}$	-0.0003	$\Delta P_{g,F}$	-0.0017

着色度 Color Code	
λ_{80}/λ_5	345/295
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	610
T_s (℃)	660
$T_{10^{14.5}}$ (℃)	569
$T_{10^{13}}$ (℃)	606
$T_{10^{7.6}}$(℃)	743
$\alpha_{-30/70℃}$(10^{-7}/K)	52
$\alpha_{100/300℃}$(10^{-7}/K)	71
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	2
D_A	3
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.880	0.770
2200	0.930	0.865
2000	0.978	0.956
1800	0.984	0.968
1600	0.990	0.980
1400	0.998	0.997
1200	0.999	0.998
1060	0.999	0.999
1000	0.999	0.999
950	0.999	0.999
900	0.999	0.999
850	0.999	0.999
800	0.999	0.999
700	0.999	0.999
650	0.999	0.998
600	0.999	0.999
550	0.999	0.999
500	0.998	0.997
480	0.998	0.996
460	0.997	0.995
440	0.997	0.994
420	0.996	0.993
400	0.996	0.992
390	0.994	0.988
380	0.992	0.985
370	0.986	0.972
360	0.978	0.957
350	0.958	0.918
340	0.930	0.860
330	0.870	0.750
320	0.760	0.580
310	0.600	0.360
300	0.370	0.140
290	0.140	0.020
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	615
F_A	113
E (10^7Pa)	8495
G (10^7Pa)	3392
μ	0.252
B (10^{-12}/Pa)	2.06

其他性质 Other Properties	
ρ (g/cm^3)	3.26

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	2.6	2.8	2.9	3.1	3.6	3.9
-20～0	3.1	3.3	3.5	3.6	3.8	4.0
0～20	3.1	3.4	3.6	3.7	3.9	4.3
20～40	3.2	3.5	3.5	3.7	3.8	4.2
40～60	3.1	3.5	3.6	3.7	4.1	4.3
60～80	3.3	3.7	3.8	4.0	4.5	4.7
80～100						
100～120						
120～140						

H-ZK3A	589613	n_d = 1.58913	υ_d = 61.25	$n_F - n_C$ = 0.009618
		n_e = 1.59142	υ_e = 61.01	$n_{F'} - n_{C'}$ = 0.009694

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.57813
n_s	852.11	1.58092
n_r	706.52	1.58450
n_C	656.27	1.58619
$n_{C'}$	643.85	1.58666
n_{He-Ne}	632.8	1.58709
n_D	589.29	1.58904
n_d	587.56	1.58913
n_e	546.07	1.59142
n_F	486.13	1.59581
$n_{F'}$	479.99	1.59635
n_g	435.83	1.60100
n_h	404.66	1.60529
n_i	365.01	1.61259
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	2.4863503E+00
A_1	-9.6980229E-03
A_2	1.4544443E-02
A_3	-6.4269302E-05
A_4	3.4793343E-05
A_5	-1.5363174E-06

折射率温度系数常数 Constants of dn/dt	
D_0	1.86E-06
D_1	1.80E-08
D_2	-8.52E-12
E_0	4.69E-07
E_1	3.35E-10
λ_{TK}(μm)	0.137

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2901	$P'_{s,t}$	0.2878
$P_{C,s}$	0.5479	$P'_{C',s}$	0.5921
$P_{d,C}$	0.3057	$P'_{d,C'}$	0.2548
$P_{e,d}$	0.2381	$P'_{e,d}$	0.2362
$P_{g,F}$	0.5396	$P'_{g,F'}$	0.4797
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0031	$\Delta P_{C,s}$	0.0014
$\Delta P_{F,e}$	0.0002	$\Delta P_{g,F}$	-0.0018

着色度 Color Code	
λ_{80}/λ_5	350/290
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	678
T_s (℃)	713
$T_{10^{14.5}}$ (℃)	619
$T_{10^{13}}$ (℃)	653
$T_{10^{7.6}}$(℃)	788
$\alpha_{-30/70℃}$(10^{-7}/K)	55
$\alpha_{100/300℃}$(10^{-7}/K)	68
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	2
D_A	3
CR	3
RC(S)	3
RA(S)	2

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.890	0.791
2200	0.940	0.884
2000	0.985	0.969
1800	0.992	0.985
1600	0.996	0.992
1400	0.991	0.982
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.999	0.998
650	0.998	0.997
600	0.998	0.997
550	0.998	0.997
500	0.998	0.996
480	0.997	0.995
460	0.997	0.994
440	0.995	0.991
420	0.995	0.991
400	0.994	0.989
390	0.992	0.984
380	0.990	0.980
370	0.983	0.967
360	0.971	0.943
350	0.947	0.896
340	0.903	0.815
330	0.832	0.692
320	0.717	0.514
310	0.553	0.306
300	0.358	0.128
290	0.187	0.035
280	0.148	0.022

机械性质 Mechanical Properties	
H_K (10^7Pa)	556
F_A	112
E (10^7Pa)	8380
G (10^7Pa)	3341
μ	0.254
B (10^{-12}/Pa)	2.07

其他性质 Other Properties	
ρ (g/cm^3)	3.31

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	2.3	2.7	2.9	3.0	3.0	3.4
-20～0	2.3	2.8	2.9	3.0	3.3	3.5
0～20	2.5	2.8	2.9	3.1	3.5	3.6
20～40	2.7	3.0	3.1	3.3	3.6	3.8
40～60	2.8	3.2	3.3	3.5	3.7	4.0
60～80	3.1	3.4	3.6	3.7	3.9	4.3
80～100						
100～120						
120～140						

H-ZK4	609589	n_d = 1.608810	υ_d = 58.86	$n_F - n_C$ = 0.010344
		n_e = 1.611277	υ_e = 58.59	$n_{F'} - n_{C'}$ = 0.010434

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	1.579570
$n_{1970.09}$	1970.09	1.584934
$n_{1529.58}$	1529.58	1.590628
$n_{1060.0}$	1060.0	1.596574
n_t	1013.98	1.597260
n_s	852.11	1.600130
n_r	706.52	1.603881
n_C	656.27	1.605667
$n_{C'}$	643.85	1.606167
n_{He-Ne}	632.8	1.606635
n_D	589.29	1.608718
n_d	587.56	1.608810
n_e	546.07	1.611277
n_F	486.13	1.616011
$n_{F'}$	479.99	1.616601
n_g	435.83	1.621643
n_h	404.66	1.626318
n_i	365.01	1.634283
$n_{313.18}$	313.18	1.650462
$n_{302.15}$	302.15	1.655251

色散公式常数 Constants of Dispersion Formula	
K_1	8.05862971E-01
L_1	3.65339732E-03
K_2	7.40367110E-01
L_2	1.62978769E-02
K_3	9.04054991E-01
L_3	9.59876087E+01

折射率温度系数常数 Constants of dn/dt	
D_0	6.94E-07
D_1	1.70E-08
D_2	-7.12E-11
E_0	3.52E-07
E_1	4.00E-11
λ_{TK}(μm)	0.267

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2775	$P'_{s,t}$	0.2751
$P_{C,s}$	0.5353	$P'_{C',s}$	0.5786
$P_{d,C}$	0.3038	$P'_{d,C'}$	0.2533
$P_{e,d}$	0.2385	$P'_{e,d}$	0.2364
$P_{g,F}$	0.5445	$P'_{g,F'}$	0.4832
$P_{i,h}$	0.7700	$P'_{i,h}$	0.7634

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	-0.0108	$\Delta P_{C,s}$	-0.0056
$\Delta P_{F,e}$	0.0001	$\Delta P_{g,F}$	-0.0010

着色度 Color Code	
λ_{80}/λ_5	350/295
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	654
T_s (℃)	713
$T_{10^{14.5}}$ (℃)	606
$T_{10^{13}}$ (℃)	643
$T_{10^{7.6}}$(℃)	788
$\alpha_{-30/70℃}$(10^{-7}/K)	63
$\alpha_{100/300℃}$(10^{-7}/K)	79
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	3
CR	2
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.910	0.828
2200	0.952	0.906
2000	0.983	0.967
1800	0.992	0.984
1600	0.998	0.996
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.998	0.997
950	0.997	0.995
900	0.997	0.995
850	0.996	0.993
800	0.998	0.996
700	0.997	0.995
650	0.997	0.995
600	0.997	0.995
550	0.998	0.996
500	0.997	0.994
480	0.996	0.993
460	0.996	0.992
440	0.995	0.991
420	0.994	0.989
400	0.992	0.984
390	0.987	0.975
380	0.981	0.963
370	0.969	0.939
360	0.944	0.891
350	0.900	0.810
340	0.820	0.680
330	0.700	0.490
320	0.530	0.280
310	0.330	0.110
300	0.160	0.030
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	516
F_A	127
E (10^7Pa)	8112
G (10^7Pa)	3206
μ	0.265
B (10^{-12}/Pa)	1.90

其他性质 Other Properties	
ρ (g/cm^3)	3.53

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	1.4	1.8	2.1	2.2	2.3	2.9
-20～0	1.8	2.1	2.2	2.5	2.7	3.1
0～20	1.9	2.3	2.5	2.7	2.9	3.2
20～40	2.1	2.3	2.5	2.7	2.9	3.3
40～60	2.1	2.3	2.5	2.7	3.2	3.6
60～80	2.2	2.7	2.8	2.9	3.2	3.7
80～100						
100～120						
120～140						

H-ZK5	611558	n_d = 1.61117	υ_d = 55.77	$n_F - n_C$ = 0.010958
		n_e = 1.61378	υ_e = 55.50	$n_{F'} - n_{C'}$ = 0.011060

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.59921
n_s	852.11	1.60206
n_r	706.52	1.60597
n_C	656.27	1.60785
$n_{C'}$	643.85	1.60838
n_{He-Ne}	632.8	1.60887
n_D	589.29	1.61107
n_d	587.56	1.61117
n_e	546.07	1.61378
n_F	486.13	1.61881
$n_{F'}$	479.99	1.61944
n_g	435.83	1.62479
n_h	404.66	1.62984
n_i	365.01	1.63844
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	2.5449819E+00
A_1	-5.7627504E-03
A_2	1.9601474E-02
A_3	-8.1278651E-04
A_4	1.3835480E-04
A_5	-6.1657920E-06

折射率温度系数常数 Constants of dn/dt	
D_0	-3.46E-06
D_1	1.21E-08
D_2	1.31E-11
E_0	5.78E-07
E_1	6.03E-10
λ_{TK}(μm)	0.170

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2601	$P'_{s,t}$	0.2577
$P_{C,s}$	0.5284	$P'_{C',s}$	0.5714
$P_{d,C}$	0.3026	$P'_{d,C'}$	0.2522
$P_{e,d}$	0.2383	$P'_{e,d}$	0.2361
$P_{g,F}$	0.5457	$P'_{g,F'}$	0.4837
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	-0.0206	$\Delta P_{C,s}$	-0.0052
$\Delta P_{F,e}$	-0.0001	$\Delta P_{g,F}$	-0.0050

着色度 Color Code	
λ_{80}/λ_5	350/290
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	578
T_s (℃)	622
$T_{10^{14.5}}$ (℃)	523
$T_{10^{13}}$ (℃)	560
$T_{10^{7.6}}$(℃)	695
$\alpha_{-30/70℃}$(10^{-7}/K)	86
$\alpha_{100/300℃}$(10^{-7}/K)	99
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	6
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.906	0.820
2200	0.942	0.887
2000	0.976	0.953
1800	0.989	0.978
1600	0.998	0.997
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.998	0.997
800	0.998	0.996
700	0.998	0.996
650	0.997	0.995
600	0.997	0.995
550	0.997	0.995
500	0.997	0.994
480	0.996	0.993
460	0.996	0.992
440	0.995	0.991
420	0.995	0.991
400	0.994	0.989
390	0.993	0.986
380	0.990	0.981
370	0.985	0.971
360	0.973	0.947
350	0.952	0.907
340	0.909	0.827
330	0.830	0.690
320	0.710	0.500
310	0.530	0.280
300	0.330	0.110
290	0.170	0.030
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	521
F_A	169
E (10^7Pa)	7881
G (10^7Pa)	3103
μ	0.270
B (10^{-12}/Pa)	1.98

其他性质 Other Properties	
ρ (g/cm^3)	3.58

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	-0.1	0.4	0.6	0.8	1.2	1.4
-20～0	0.1	0.6	0.7	0.8	1.4	1.6
0～20	0.1	0.6	0.6	0.9	1.2	1.4
20～40	0.1	0.5	0.7	1.0	1.1	1.4
40～60	0.3	0.6	0.8	1.0	1.2	2.1
60～80	0.4	0.9	1.1	1.2	1.8	2.2
80～100						
100～120						
120～140						

CDGM

H-ZK6	613586	n_d = 1.612720	υ_d = 58.58	$n_F - n_C$ = 0.010460
		n_e = 1.615214	υ_e = 58.31	$n_{F'} - n_{C'}$ = 0.010551

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	1.583015
$n_{1970.09}$	1970.09	1.588481
$n_{1529.58}$	1529.58	1.594284
$n_{1060.0}$	1060.0	1.600333
n_t	1013.98	1.601030
n_s	852.11	1.603939
n_r	706.52	1.607736
n_C	656.27	1.609542
$n_{C'}$	643.85	1.610048
n_{He-Ne}	632.8	1.610520
n_D	589.29	1.612627
n_d	587.56	1.612720
n_e	546.07	1.615214
n_F	486.13	1.620002
$n_{F'}$	479.99	1.620599
n_g	435.83	1.625704
n_h	404.66	1.630443
n_i	365.01	1.638538
$n_{313.18}$	313.18	1.655100
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

K_1	1.35139240E+00
L_1	7.35017182E-03
K_2	2.06957487E-01
L_2	2.54398321E-02
K_3	9.61153882E-01
L_3	9.95133128E+01

折射率温度系数常数 Constants of dn/dt

D_0	1.08E-07
D_1	1.53E-08
D_2	-3.29E-11
E_0	4.32E-07
E_1	6.25E-10
λ_{TK}(μm)	0.191

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2781	$P'_{s,t}$	0.2757
$P_{C,s}$	0.5357	$P'_{C',s}$	0.5790
$P_{d,C}$	0.3038	$P'_{d,C'}$	0.2532
$P_{e,d}$	0.2384	$P'_{e,d}$	0.2364
$P_{g,F}$	0.5451	$P'_{g,F'}$	0.4838
$P_{i,h}$	0.7739	$P'_{i,h}$	0.7672

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	-0.0085	$\Delta P_{C,s}$	-0.0046
$\Delta P_{F,e}$	0.0000	$\Delta P_{g,F}$	-0.0008

着色度 Color Code

λ_{80}/λ_5	355/310
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	662
T_s (℃)	708
$T_{10^{14.5}}$ (℃)	602
$T_{10^{13}}$ (℃)	640
$T_{10^{7.6}}$(℃)	758
$\alpha_{-30/70℃}$(10^{-7}/K)	63
$\alpha_{100/300℃}$(10^{-7}/K)	79
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	2
D_A	3
CR	2
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.905	0.819
2200	0.952	0.906
2000	0.985	0.970
1800	0.993	0.987
1600	0.998	0.996
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.998	0.996
850	0.997	0.995
800	0.996	0.993
700	0.996	0.993
650	0.996	0.992
600	0.996	0.992
550	0.995	0.991
500	0.995	0.990
480	0.994	0.988
460	0.993	0.986
440	0.992	0.984
420	0.992	0.984
400	0.989	0.979
390	0.985	0.971
380	0.978	0.956
370	0.963	0.928
360	0.934	0.873
350	0.880	0.780
340	0.790	0.620
330	0.630	0.400
320	0.410	0.170
310	0.170	0.030
300		
290		
280		

机械性质 Mechanical Properties

H_K (10^7Pa)	516
F_A	126
E (10^7Pa)	8253
G (10^7Pa)	3256
μ	0.267
B (10^{-12}/Pa)	1.91

其他性质 Other Properties

ρ (g/cm^3)	3.54

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	1.5	1.7	2.0	2.0	2.4	2.7
-40～-20	1.6	2.0	2.2	2.2	2.5	2.6
-20～0	1.6	1.8	2.1	2.0	2.5	2.6
0～20	1.7	2.0	2.1	2.1	2.7	2.8
20～40	1.7	2.1	2.2	2.4	2.8	3.2
40～60	1.9	2.3	2.4	2.7	2.9	3.4
60～80	2.0	2.4	2.5	2.9	3.0	3.5
80～100	2.2	2.5	2.7	2.9	3.2	3.5
100～120	2.2	2.7	2.9	2.9	3.2	3.6
120～140	2.2	2.7	2.9	2.9	3.3	3.6

H-ZK7A	613604	n_d = 1.61309	υ_d = 60.36	$n_F - n_C$ = 0.010158
		n_e = 1.61551	υ_e = 60.17	$n_{F'} - n_{C'}$ = 0.010230

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.60150
n_s	852.11	1.60445
n_r	706.52	1.60822
n_C	656.27	1.60999
$n_{C'}$	643.85	1.61049
n_{He-Ne}	632.8	1.61094
n_D	589.29	1.61300
n_d	587.56	1.61309
n_e	546.07	1.61551
n_F	486.13	1.62015
$n_{F'}$	479.99	1.62072
n_g	435.83	1.62563
n_h	404.66	1.63017
n_i	365.01	1.63791
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	2.5620206E+00
A_1	-1.1174601E-02
A_2	1.4414124E-02
A_3	2.7459224E-04
A_4	-8.3862927E-06
A_5	6.6157559E-07

折射率温度系数常数 Constants of dn/dt	
D_0	3.89E-07
D_1	1.54E-08
D_2	-4.77E-11
E_0	3.87E-07
E_1	5.71E-10
λ_{TK}(μm)	0.198

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2904	$P'_{s,t}$	0.2884
$P_{C,s}$	0.5454	$P'_{C',s}$	0.5904
$P_{d,C}$	0.3052	$P'_{d,C'}$	0.2542
$P_{e,d}$	0.2382	$P'_{e,d}$	0.2366
$P_{g,F}$	0.5395	$P'_{g,F'}$	0.4800
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0051	$\Delta P_{C,s}$	0.0009
$\Delta P_{F,e}$	0.0000	$\Delta P_{g,F}$	-0.0034

着色度 Color Code	
λ_{80}/λ_5	350/290
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	670
T_s (℃)	710
$T_{10^{14.5}}$ (℃)	606
$T_{10^{13}}$ (℃)	645
$T_{10^{7.6}}$(℃)	770
$\alpha_{-30/70℃}$(10^{-7}/K)	62
$\alpha_{100/300℃}$(10^{-7}/K)	75
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	3
D_A	4
CR	4
RC(S)	1
RA(S)	4

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.866	0.750
2200	0.937	0.878
2000	0.981	0.962
1800	0.991	0.982
1600	0.996	0.992
1400	0.993	0.985
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.999	0.998
650	0.999	0.998
600	0.998	0.997
550	0.998	0.997
500	0.998	0.996
480	0.997	0.995
460	0.997	0.995
440	0.995	0.991
420	0.995	0.990
400	0.993	0.987
390	0.989	0.979
380	0.984	0.968
370	0.972	0.945
360	0.947	0.897
350	0.899	0.809
340	0.809	0.655
330	0.672	0.451
320	0.508	0.258
310	0.354	0.125
300	0.217	0.047
290	0.126	0.016
280		

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	1.6	1.8	1.9	2.0	2.4	2.6
-20～0	1.7	2.0	2.0	2.3	2.6	2.7
0～20	1.8	2.1	2.1	2.5	2.8	2.8
20～40	1.9	2.2	2.3	2.6	2.9	3.0
40～60	2.0	2.3	2.4	2.6	2.9	3.3
60～80	2.2	2.5	2.6	2.7	3.0	3.4
80～100						
100～120						
120～140						

机械性质 Mechanical Properties	
H_K (10^7Pa)	553
F_A	169
E (10^7Pa)	9044
G (10^7Pa)	3570
μ	0.263
B (10^{-12}/Pa)	1.93

其他性质 Other Properties	
ρ (g/cm^3)	3.41

备注 Remarks

CDGM

H-ZK7	613606	n_d = 1.61309	υ_d = 60.58	$n_F - n_C$ = 0.010120
		n_e = 1.61551	υ_e = 60.34	$n_{F'} - n_{C'}$ = 0.010201

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.60161
n_s	852.11	1.60452
n_r	706.52	1.60825
n_C	656.27	1.61001
$n_{C'}$	643.85	1.61050
n_{He-Ne}	632.8	1.61096
n_D	589.29	1.61300
n_d	587.56	1.61309
n_e	546.07	1.61551
n_F	486.13	1.62013
$n_{F'}$	479.99	1.62070
n_g	435.83	1.62558
n_h	404.66	1.63010
n_i	365.01	1.63778
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	2.5622956E+00
A_1	-1.0884471E-02
A_2	1.4099779E-02
A_3	3.7925704E-04
A_4	-2.4161268E-05
A_5	1.4161621E-06

折射率温度系数常数 Constants of dn/dt	
D_0	-5.31E-07
D_1	1.64E-08
D_2	-6.04E-11
E_0	3.53E-07
E_1	-1.40E-10
λ_{TK}(μm)	0.230

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2875	$P'_{s,t}$	0.2853
$P_{C,s}$	0.5425	$P'_{C',s}$	0.5862
$P_{d,C}$	0.3047	$P'_{d,C'}$	0.2542
$P_{e,d}$	0.2386	$P'_{e,d}$	0.2367
$P_{g,F}$	0.5384	$P'_{g,F'}$	0.4783
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	-0.0017	$\Delta P_{C,s}$	-0.0025
$\Delta P_{F,e}$	0.0000	$\Delta P_{g,F}$	-0.0041

着色度 Color Code	
λ_{80}/λ_5	355/300
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	658
T_s (℃)	684
$T_{10^{14.5}}$ (℃)	609
$T_{10^{13}}$ (℃)	640
$T_{10^{7.6}}$(℃)	761
$\alpha_{-30/70℃}$(10^{-7}/K)	61
$\alpha_{100/300℃}$(10^{-7}/K)	80
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	3
D_A	6
CR	4c
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.890	0.790
2200	0.948	0.898
2000	0.984	0.968
1800	0.992	0.985
1600	0.998	0.997
1400	0.995	0.990
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.999	0.998
650	0.998	0.997
600	0.998	0.997
550	0.998	0.997
500	0.997	0.995
480	0.997	0.994
460	0.996	0.993
440	0.996	0.992
420	0.995	0.991
400	0.993	0.987
390	0.990	0.980
380	0.984	0.969
370	0.975	0.950
360	0.953	0.908
350	0.918	0.842
340	0.850	0.730
330	0.750	0.560
320	0.610	0.370
310	0.420	0.180
300	0.240	0.060
290	0.110	0.010
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	560
F_A	159
E (10^7Pa)	8847
G (10^7Pa)	3501
μ	0.264
B (10^{-12}/Pa)	1.86

其他性质 Other Properties	
ρ (g/cm^3)	3.51

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	0.9	1.3	1.5	1.6	1.8	2.2
-20～0	1.3	1.5	1.6	1.9	2.0	2.4
0～20	1.3	1.7	1.8	1.9	2.1	2.4
20～40	1.5	1.8	1.9	2.0	2.1	2.5
40～60	1.5	1.8	1.9	2.0	2.4	2.6
60～80	1.6	1.8	2.1	2.2	2.4	2.7
80～100						
100～120						
120～140						

H-ZK8	614551	n_d = 1.61405	υ_d = 55.12	$n_F - n_C$ = 0.011141
		n_e = 1.61670	υ_e = 54.84	$n_{F'} - n_{C'}$ = 0.011246

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.60192
n_s	852.11	1.60484
n_r	706.52	1.60879
n_C	656.27	1.61068
$n_{C'}$	643.85	1.61121
n_{He-Ne}	632.8	1.61171
n_D	589.29	1.61395
n_d	587.56	1.61405
n_e	546.07	1.61670
n_F	486.13	1.62182
$n_{F'}$	479.99	1.62246
n_g	435.83	1.62796
n_h	404.66	1.63309
n_i	365.01	1.64189
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

A_0	2.5570150E+00
A_1	-7.6592611E-03
A_2	1.7626180E-02
A_3	-2.0499810E-04
A_4	6.8129954E-05
A_5	-3.0736838E-06

折射率温度系数常数 Constants of dn/dt

D_0	-3.50E-06
D_1	2.04E-08
D_2	-3.25E-11
E_0	5.04E-07
E_1	-5.67E-10
λ_{TK}(μm)	0.213

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2621	$P'_{s,t}$	0.2596
$P_{C,s}$	0.5242	$P'_{C',s}$	0.5664
$P_{d,C}$	0.3024	$P'_{d,C'}$	0.2525
$P_{e,d}$	0.2379	$P'_{e,d}$	0.2356
$P_{g,F}$	0.5510	$P'_{g,F'}$	0.4890
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	-0.0197	$\Delta P_{C,s}$	-0.0079
$\Delta P_{F,e}$	0.0000	$\Delta P_{g,F}$	-0.0008

着色度 Color Code

λ_{80}/λ_5	360/320
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	577
T_s (℃)	623
$T_{10}^{14.5}$ (℃)	532
T_{10}^{13} (℃)	563
$T_{10}^{7.6}$(℃)	698
$\alpha_{-30/70℃}$(10^{-7}/K)	86
$\alpha_{100/300℃}$(10^{-7}/K)	98
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	6
CR	4a
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.909	0.826
2200	0.946	0.894
2000	0.978	0.956
1800	0.990	0.980
1600	0.999	0.998
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.997
700	0.998	0.997
650	0.998	0.996
600	0.998	0.996
550	0.998	0.996
500	0.997	0.994
480	0.997	0.994
460	0.996	0.993
440	0.995	0.991
420	0.995	0.991
400	0.994	0.988
390	0.991	0.983
380	0.987	0.974
370	0.979	0.958
360	0.959	0.919
350	0.919	0.845
340	0.830	0.690
330	0.640	0.410
320	0.320	0.100
310		
300		
290		
280		

机械性质 Mechanical Properties

H_K (10^7Pa)	600
F_A	173
E (10^7Pa)	7888
G (10^7Pa)	3104
μ	0.271
B (10^{-12}/Pa)	

其他性质 Other Properties

ρ (g/cm^3)	3.58

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	-0.4	0.1	0.3	0.6	0.7	1.2
-20～0	-0.1	0.2	0.3	0.5	1.1	1.4
0～20	-0.1	0.2	0.3	0.7	1.1	1.5
20～40	0.1	0.6	0.8	0.9	1.1	1.5
40～60	0.3	0.7	0.9	1.1	1.3	1.7
60～80	0.3	0.8	1.0	1.1	1.4	1.9
80～100						
100～120						
120～140						

H-ZK9B	620603	n_d = 1.620410	υ_d = 60.34	$n_F - n_C$ = 0.010282
		n_e = 1.622862	υ_e = 60.09	$n_{F'} - n_{C'}$ = 0.010365

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	1.588985
$n_{1970.09}$	1970.09	1.595085
$n_{1529.58}$	1529.58	1.601496
$n_{1060.0}$	1060.0	1.607969
n_t	1013.98	1.608693
n_s	852.11	1.611671
n_r	706.52	1.615479
n_C	656.27	1.617273
$n_{C'}$	643.85	1.617773
n_{He-Ne}	632.8	1.618240
n_D	589.29	1.620318
n_d	587.56	1.620410
n_e	546.07	1.622862
n_F	486.13	1.627555
$n_{F'}$	479.99	1.628138
n_g	435.83	1.633121
n_h	404.66	1.637734
n_i	365.01	1.645583
$n_{313.18}$	313.18	1.661507
$n_{302.15}$	302.15	1.666216

色散公式常数 Constants of Dispersion Formula	
K_1	8.74918734E-01
L_1	3.73965378E-03
K_2	7.09627300E-01
L_2	1.63972089E-02
K_3	1.09453882E+00
L_3	1.00204324E+02

折射率温度系数常数 Constants of dn/dt	
D_0	-9.86E-07
D_1	1.83E-08
D_2	-3.36E-11
E_0	3.65E-07
E_1	9.55E-11
λ_{TK}(μm)	0.222

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2896	$P'_{s,t}$	0.2873
$P_{C,s}$	0.5448	$P'_{C',s}$	0.5887
$P_{d,C}$	0.3051	$P'_{d,C'}$	0.2544
$P_{e,d}$	0.2385	$P'_{e,d}$	0.2366
$P_{g,F}$	0.5413	$P'_{g,F'}$	0.4808
$P_{i,h}$	0.7634	$P'_{i,h}$	0.7573

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0039	$\Delta P_{C,s}$	0.0004
$\Delta P_{F,e}$	-0.0003	$\Delta P_{g,F}$	-0.0016

着色度 Color Code	
λ_{80}/λ_5	355/295
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	663
T_s (℃)	704
$T_{10^{14.5}}$ (℃)	616
$T_{10^{13}}$ (℃)	646
$T_{10^{7.6}}$(℃)	764
$\alpha_{-30/70℃}$(10^{-7}/K)	62
$\alpha_{100/300℃}$(10^{-7}/K)	77
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	3
D_A	4
CR	4c
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.859	0.738
2200	0.929	0.863
2000	0.978	0.957
1800	0.989	0.979
1600	0.995	0.991
1400	0.992	0.985
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.997	0.995
650	0.998	0.997
600	0.999	0.998
550	0.999	0.998
500	0.999	0.998
480	0.999	0.998
460	0.999	0.998
440	0.998	0.996
420	0.997	0.995
400	0.996	0.992
390	0.993	0.987
380	0.990	0.980
370	0.982	0.965
360	0.965	0.932
350	0.935	0.874
340	0.881	0.777
330	0.797	0.635
320	0.672	0.451
310	0.508	0.258
300	0.332	0.110
290	0.184	0.034
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	574
F_A	145
E (10^7Pa)	8985
G (10^7Pa)	3551
μ	0.265
B (10^{-12}/Pa)	1.84

其他性质 Other Properties	
ρ (g/cm^3)	3.58

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	0.7	1.2	1.4	1.4	1.7	1.9
-40～-20	0.8	1.3	1.4	1.5	1.8	2.1
-20～0	0.8	1.3	1.4	1.6	1.8	2.1
0～20	1.0	1.4	1.6	1.7	1.8	2.1
20～40	1.3	1.6	1.7	1.8	2.0	2.4
40～60	1.5	1.7	1.9	2.1	2.4	2.8
60～80	1.6	1.9	2.0	2.2	2.6	2.9
80～100	1.7	2.0	2.1	2.2	2.6	2.9
100～120	1.8	2.1	2.3	2.3	2.7	2.9
120～140	1.9	2.3	2.4	2.5	2.7	3.1

H-ZK9A	620603	n_d = 1.62041	υ_d = 60.34	$n_F - n_C$ = 0.010281
		n_e = 1.62286	υ_e = 60.10	$n_{F'} - n_{C'}$ = 0.010363

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.60863
n_s	852.11	1.61163
n_r	706.52	1.61547
n_C	656.27	1.61727
$n_{C'}$	643.85	1.61777
n_{He-Ne}	632.8	1.61824
n_D	589.29	1.62032
n_d	587.56	1.62041
n_e	546.07	1.62286
n_F	486.13	1.62755
$n_{F'}$	479.99	1.62813
n_g	435.83	1.63310
n_h	404.66	1.63769
n_i	365.01	1.64550
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

A_0	2.5840780E+00
A_1	-1.1128138E-02
A_2	1.5428160E-02
A_3	2.6403393E-05
A_4	2.7746647E-05
A_5	-1.2449390E-06

折射率温度系数常数 Constants of dn/dt

D_0	-1.40E-06
D_1	1.73E-08
D_2	1.08E-10
E_0	5.40E-07
E_1	7.75E-10
λ_{TK}(μm)	0.097

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2918	$P'_{s,t}$	0.2895
$P_{C,s}$	0.5486	$P'_{C',s}$	0.5925
$P_{d,C}$	0.3054	$P'_{d,C'}$	0.2547
$P_{e,d}$	0.2386	$P'_{e,d}$	0.2367
$P_{g,F}$	0.5398	$P'_{g,F'}$	0.4796
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	0.0098	$\Delta P_{C,s}$	0.0042
$\Delta P_{F,e}$	-0.0007	$\Delta P_{g,F}$	-0.0031

着色度 Color Code

λ_{80}/λ_5	355/295
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	653
T_s (℃)	694
$T_{10}^{14.5}$ (℃)	606
T_{10}^{13} (℃)	639
$T_{10}^{7.6}$(℃)	754
$\alpha_{-30/70℃}$(10^{-7}/K)	60
$\alpha_{100/300℃}$(10^{-7}/K)	74
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	3
D_A	4
CR	4a
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.820	0.680
2200	0.910	0.828
2000	0.975	0.950
1800	0.989	0.979
1600	0.997	0.994
1400	0.996	0.993
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.999	0.998
650	0.998	0.997
600	0.998	0.996
550	0.998	0.996
500	0.997	0.995
480	0.997	0.994
460	0.996	0.993
440	0.995	0.991
420	0.994	0.989
400	0.991	0.983
390	0.987	0.974
380	0.980	0.961
370	0.967	0.935
360	0.941	0.885
350	0.890	0.800
340	0.820	0.670
330	0.710	0.500
320	0.550	0.300
310	0.370	0.140
300		
290		
280		

机械性质 Mechanical Properties

H_K (10^7Pa)	576
F_A	134
E (10^7Pa)	8822
G (10^7Pa)	3494
μ	0.262
B (10^{-12}/Pa)	1.89

其他性质 Other Properties

ρ (g/cm^3)	3.53

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	0.7	1.1	1.7	1.8	2.1	2.4
-20～0	1.2	1.5	1.6	1.8	2.0	2.2
0～20	1.2	1.4	1.5	1.7	2.0	2.2
20～40	1.1	1.3	1.5	1.8	2.0	2.4
40～60	1.6	1.9	2.1	2.4	2.8	2.9
60～80	1.9	2.4	2.8	2.9	3.3	3.6
80～100						
100～120						
120～140						

CDGM

H-ZK10	622567	n_d = 1.62210	υ_d = 56.71	$n_F - n_C$ = 0.010970
		n_e = 1.62470	υ_e = 56.38	$n_{F'} - n_{C'}$ = 0.011080

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.60996
n_s	852.11	1.61294
n_r	706.52	1.61689
n_C	656.27	1.61877
$n_{C'}$	643.85	1.61929
n_{He-Ne}	632.8	1.61979
n_D	589.29	1.62200
n_d	587.56	1.62210
n_e	546.07	1.62470
n_F	486.13	1.62974
$n_{F'}$	479.99	1.63037
n_g	435.83	1.63575
n_h	404.66	1.64075
n_i	365.01	1.64922
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	2.5840705E+00
A_1	-8.7264109E-03
A_2	1.7569665E-02
A_3	-3.0815451E-04
A_4	8.8794888E-05
A_5	-4.7409985E-06

折射率温度系数常数 Constants of dn/dt	
D_0	-3.18E-09
D_1	2.08E-08
D_2	-7.24E-11
E_0	5.00E-07
E_1	-1.17E-10
λ_{TK}(μm)	0.212

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2716	$P'_{s,t}$	0.2690
$P_{C,s}$	0.5314	$P'_{C',s}$	0.5731
$P_{d,C}$	0.3034	$P'_{d,C'}$	0.2531
$P_{e,d}$	0.2375	$P'_{e,d}$	0.2351
$P_{g,F}$	0.5479	$P'_{g,F'}$	0.4856
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	-0.0104	$\Delta P_{C,s}$	-0.0044
$\Delta P_{F,e}$	0.0005	$\Delta P_{g,F}$	-0.0012

着色度 Color Code	
λ_{80}/λ_5	365/320
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	657
T_s (℃)	702
$T_{10}^{14.5}$ (℃)	600
T_{10}^{13} (℃)	637
$T_{10}^{7.6}$(℃)	769
$\alpha_{-30/70℃}$(10^{-7}/K)	65
$\alpha_{100/300℃}$(10^{-7}/K)	75
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	3
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.880	0.770
2200	0.930	0.865
2000	0.977	0.955
1800	0.989	0.978
1600	0.998	0.996
1400	0.998	0.997
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.998	0.997
650	0.998	0.996
600	0.998	0.996
550	0.998	0.996
500	0.997	0.995
480	0.996	0.993
460	0.996	0.992
440	0.995	0.991
420	0.995	0.990
400	0.991	0.983
390	0.986	0.973
380	0.979	0.958
370	0.962	0.925
360	0.923	0.852
350	0.850	0.720
340	0.680	0.460
330	0.390	0.150
320	0.090	0.010
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	598
F_A	139
E (10^7Pa)	8251
G (10^7Pa)	3247
μ	0.270
B (10^{-12}/Pa)	1.94

其他性质 Other Properties	
ρ (g/cm^3)	3.63

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	1.1	1.4	1.7	1.9	2.2	2.7
-20～0	1.5	1.8	2.4	2.5	2.7	2.9
0～20	1.6	1.9	2.2	2.3	2.8	3.2
20～40	2.1	2.3	2.5	2.6	3.0	3.5
40～60	2.2	2.3	2.5	2.8	3.1	3.6
60～80	2.2	2.4	2.7	2.9	3.3	3.6
80～100						
100～120						
120～140						

CDGM

H-ZK10L	623569	n_d = 1.622800	υ_d = 56.91	$n_F - n_C$ = 0.010943
		n_e = 1.625408	υ_e = 56.64	$n_{F'} - n_{C'}$ = 0.011042

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	1.592776
$n_{1970.09}$	1970.09	1.598156
$n_{1529.58}$	1529.58	1.603901
$n_{1060.0}$	1060.0	1.609980
n_t	1013.98	1.610690
n_s	852.11	1.613674
n_r	706.52	1.617605
n_C	656.27	1.619485
$n_{C'}$	643.85	1.620012
n_{He-Ne}	632.8	1.620504
n_D	589.29	1.622703
n_d	587.56	1.622800
n_e	546.07	1.625408
n_F	486.13	1.630428
$n_{F'}$	479.99	1.631054
n_g	435.83	1.636421
n_h	404.66	1.641417
n_i	365.01	1.649982
$n_{313.18}$	313.18	1.667652
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
K_1	9.57266324E-01
L_1	1.00408853E+02
K_2	1.44528215E+00
L_2	8.04380200E-03
K_3	1.43179062E-01
L_3	3.04353080E-02

折射率温度系数常数 Constants of dn/dt	
D_0	-7.67E-07
D_1	1.58E-08
D_2	-1.87E-11
E_0	4.79E-07
E_1	2.46E-10
λ_{TK}(μm)	0.200

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2727	$P'_{s,t}$	0.2702
$P_{C,s}$	0.5310	$P'_{C',s}$	0.5740
$P_{d,C}$	0.3029	$P'_{d,C'}$	0.2525
$P_{e,d}$	0.2383	$P'_{e,d}$	0.2362
$P_{g,F}$	0.5477	$P'_{g,F'}$	0.4861
$P_{i,h}$	0.7827	$P'_{i,h}$	0.7757

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	-0.0107	$\Delta P_{C,s}$	-0.0053
$\Delta P_{F,e}$	0.0001	$\Delta P_{g,F}$	-0.0011

着色度 Color Code	
λ_{80}/λ_5	360/320
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	657
T_s (℃)	702
$T_{10^{14.5}}$ (℃)	600
$T_{10^{13}}$ (℃)	637
$T_{10^{7.6}}$(℃)	763
$\alpha_{-30/70℃}$(10^{-7}/K)	65
$\alpha_{100/300℃}$(10^{-7}/K)	75
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	3
CR	2
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.894	0.799
2200	0.943	0.890
2000	0.982	0.964
1800	0.991	0.982
1600	0.996	0.992
1400	0.994	0.988
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.997
700	0.998	0.996
650	0.998	0.996
600	0.998	0.996
550	0.998	0.996
500	0.998	0.996
480	0.997	0.995
460	0.997	0.994
440	0.995	0.991
420	0.995	0.990
400	0.994	0.988
390	0.990	0.980
380	0.986	0.972
370	0.975	0.950
360	0.951	0.905
350	0.898	0.807
340	0.782	0.612
330	0.546	0.298
320	0.217	0.047
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	598
F_A	134
E (10^7Pa)	8251
G (10^7Pa)	3247
μ	0.270
B (10^{-12}/Pa)	1.89

其他性质 Other Properties	
ρ (g/cm^3)	3.63

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	1.1	1.6	1.7	1.8	2.2	2.5
-40～-20	1.2	1.6	1.7	1.9	2.2	2.5
-20～0	1.2	1.6	1.8	1.9	2.2	2.6
0～20	1.3	1.7	1.9	2.0	2.3	2.7
20～40	1.4	1.8	2.1	2.2	2.5	2.9
40～60	1.4	1.9	2.1	2.3	2.6	3.1
60～80	1.7	2.1	2.2	2.4	2.8	3.2
80～100	1.9	2.2	2.3	2.5	3.0	3.4
100～120	2.0	2.4	2.5	2.7	3.1	3.5
120～140	2.1	2.5	2.7	2.9	3.3	3.6

H-ZK11	639555	n_d = 1.638540	υ_d = 55.45	$n_F - n_C$ = 0.011516
		n_e = 1.641283	υ_e = 55.17	$n_{F'} - n_{C'}$ = 0.011623

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	1.606613
$n_{1970.09}$	1970.09	1.612421
$n_{1529.58}$	1529.58	1.618583
$n_{1060.0}$	1060.0	1.625046
n_t	1013.98	1.625796
n_s	852.11	1.628943
n_r	706.52	1.633079
n_C	656.27	1.635055
$n_{C'}$	643.85	1.635609
n_{He-Ne}	632.8	1.636126
n_D	589.29	1.638438
n_d	587.56	1.638540
n_e	546.07	1.641283
n_F	486.13	1.646571
$n_{F'}$	479.99	1.647232
n_g	435.83	1.652905
n_h	404.66	1.658210
n_i	365.01	1.667376
$n_{313.18}$	313.18	1.686767
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
K_1	5.34615460E-02
L_1	4.56429986E-02
K_2	1.58378230E+00
L_2	9.12260162E-03
K_3	9.18196297E-01
L_3	8.93234474E+01

折射率温度系数常数 Constants of dn/dt	
D_0	-1.59E-06
D_1	1.18E-08
D_2	-4.46E-11
E_0	3.99E-07
E_1	8.03E-10
λ_{TK}(μm)	0.244

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2733	$P'_{s,t}$	0.2708
$P_{C,s}$	0.5307	$P'_{C',s}$	0.5735
$P_{d,C}$	0.3026	$P'_{d,C'}$	0.2522
$P_{e,d}$	0.2382	$P'_{e,d}$	0.2360
$P_{g,F}$	0.5500	$P'_{g,F'}$	0.4881
$P_{i,h}$	0.7959	$P'_{i,h}$	0.7886

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	-0.0035	$\Delta P_{C,s}$	-0.0021
$\Delta P_{F,e}$	-0.0002	$\Delta P_{g,F}$	-0.0013

着色度 Color Code	
λ_{80}/λ_5	370/330
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	655
T_s (℃)	697
$T_{10}^{14.5}$ (℃)	601
T_{10}^{13} (℃)	636
$T_{10}^{7.6}$(℃)	758
$\alpha_{-30/70℃}$(10^{-7}/K)	69
$\alpha_{100/300℃}$(10^{-7}/K)	82
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	2
D_A	4
CR	3
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.875	0.765
2200	0.939	0.882
2000	0.979	0.959
1800	0.990	0.979
1600	0.996	0.991
1400	0.994	0.988
1200	0.998	0.997
1060	0.998	0.997
1000	0.998	0.997
950	0.998	0.997
900	0.999	0.998
850	0.999	0.998
800	0.998	0.997
700	0.998	0.996
650	0.998	0.996
600	0.997	0.995
550	0.998	0.996
500	0.997	0.995
480	0.997	0.994
460	0.996	0.992
440	0.995	0.990
420	0.994	0.989
400	0.989	0.979
390	0.983	0.966
380	0.972	0.945
370	0.947	0.896
360	0.889	0.790
350	0.762	0.580
340	0.500	0.250
330	0.182	0.033
320		
310		
300		
290		
280		

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	0.4	0.9	1.1	1.2	1.5	1.8
-20～0	0.8	1.3	1.5	1.6	1.8	2.2
0～20	0.9	1.3	1.4	1.5	1.8	2.2
20～40	0.9	1.3	1.5	1.5	1.8	2.4
40～60	1.0	1.4	1.5	1.6	2.0	2.7
60～80	1.1	1.4	1.6	1.7	2.4	2.9
80～100						
100～120						
120～140						

机械性质 Mechanical Properties	
H_K (10^7Pa)	512
F_A	165
E (10^7Pa)	8711
G (10^7Pa)	3423
μ	0.272
B (10^{-12}/Pa)	1.79

其他性质 Other Properties	
ρ (g/cm^3)	3.69

备注 Remarks

CDGM

H-ZK14	603606	n_d = 1.60311	υ_d = 60.60	$n_F - n_C$ = 0.009952
		n_e = 1.60548	υ_e = 60.35	$n_{F'} - n_{C'}$ = 0.010033

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.59181
n_s	852.11	1.59466
n_r	706.52	1.59834
n_C	656.27	1.60007
$n_{C'}$	643.85	1.60056
n_{He-Ne}	632.8	1.60101
n_D	589.29	1.60302
n_d	587.56	1.60311
n_e	546.07	1.60548
n_F	486.13	1.61003
$n_{F'}$	479.99	1.61059
n_g	435.83	1.61537
n_h	404.66	1.61982
n_i	365.01	1.62738
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	2.5302244E+00
A_1	-1.0198544E-02
A_2	1.4284397E-02
A_3	2.5335097E-04
A_4	-1.2997637E-05
A_5	1.1042061E-06

折射率温度系数常数 Constants of dn/dt	
D_0	6.84E-07
D_1	1.97E-08
D_2	-6.82E-11
E_0	3.07E-07
E_1	-3.20E-10
λ_{TK}(μm)	0.249

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2864	$P'_{s,t}$	0.2841
$P_{C,s}$	0.5436	$P'_{C',s}$	0.5881
$P_{d,C}$	0.3055	$P'_{d,C'}$	0.2542
$P_{e,d}$	0.2381	$P'_{e,d}$	0.2362
$P_{g,F}$	0.5366	$P'_{g,F'}$	0.4764
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	-0.0018	$\Delta P_{C,s}$	-0.0014
$\Delta P_{F,e}$	0.0006	$\Delta P_{g,F}$	-0.0059

着色度 Color Code	
λ_{80}/λ_5	345/290
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	647
T_s (℃)	687
$T_{10^{14.5}}$ (℃)	590
$T_{10^{13}}$ (℃)	620
$T_{10^{7.6}}$(℃)	768
$\alpha_{-30/70℃}$(10^{-7}/K)	61
$\alpha_{100/300℃}$(10^{-7}/K)	75
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	2
D_A	4
CR	
RC(S)	3
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.800	0.640
2200	0.880	0.770
2000	0.968	0.937
1800	0.979	0.958
1600	0.990	0.980
1400	0.995	0.990
1200	0.997	0.995
1060	0.998	0.996
1000	0.998	0.996
950	0.998	0.996
900	0.998	0.996
850	0.998	0.997
800	0.998	0.997
700	0.998	0.997
650	0.998	0.997
600	0.998	0.997
550	0.999	0.998
500	0.998	0.997
480	0.998	0.996
460	0.997	0.995
440	0.997	0.994
420	0.997	0.994
400	0.995	0.991
390	0.992	0.985
380	0.988	0.976
370	0.980	0.961
360	0.965	0.931
350	0.933	0.870
340	0.880	0.780
330	0.800	0.640
320	0.670	0.450
310	0.500	0.250
300	0.300	0.090
290	0.140	0.020
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	581
F_A	135
E (10^7Pa)	8460
G (10^7Pa)	3370
μ	0.257
B (10^{-12}/Pa)	1.87

其他性质 Other Properties	
ρ (g/cm^3)	3.44

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	1.4	1.7	1.9	2.1	2.3	2.4
-20～0	1.6	1.8	2.1	2.3	2.5	2.8
0～20	1.8	2.1	2.4	2.5	2.7	2.9
20～40	2.2	2.4	2.5	2.5	2.7	3.0
40～60	2.2	2.4	2.5	2.5	2.7	3.3
60～80	2.2	2.5	2.7	2.9	2.9	3.6
80～100						
100～120						
120～140						

CDGM

H-ZK20	617539	n_d = 1.617200	υ_d = 53.91	$n_F - n_C$ = 0.011448
		n_e = 1.619927	υ_e = 53.61	$n_{F'} - n_{C'}$ = 0.011563

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	1.589244
$n_{1970.09}$	1970.09	1.593718
$n_{1529.58}$	1529.58	1.598643
$n_{1060.0}$	1060.0	1.604206
n_t	1013.98	1.604889
n_s	852.11	1.607828
n_r	706.52	1.611819
n_C	656.27	1.613756
$n_{C'}$	643.85	1.614301
n_{He-Ne}	632.8	1.614811
n_D	589.29	1.617099
n_d	587.56	1.617200
n_e	546.07	1.619927
n_F	486.13	1.625204
$n_{F'}$	479.99	1.625864
n_g	435.83	1.631535
n_h	404.66	1.636830
n_i	365.01	1.645921
$n_{313.18}$	313.18	1.664646
$n_{302.15}$	302.15	1.670254

色散公式常数 Constants of Dispersion Formula	
K_1	8.12249368E-01
L_1	1.81753969E-02
K_2	7.55251214E-01
L_2	2.47827771E-03
K_3	1.15073913E+00
L_3	1.44030731E+02

折射率温度系数常数 Constants of dn/dt	
D_0	3.96E-07
D_1	3.18E-08
D_2	4.78E-11
E_0	5.07E-07
E_1	-2.17E-09
λ_{TK}(μm)	0.255

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2567	$P'_{s,t}$	0.2542
$P_{C,s}$	0.5178	$P'_{C',s}$	0.5598
$P_{d,C}$	0.3008	$P'_{d,C'}$	0.2507
$P_{e,d}$	0.2382	$P'_{e,d}$	0.2358
$P_{g,F}$	0.5530	$P'_{g,F'}$	0.4904
$P_{i,h}$	0.7941	$P'_{i,h}$	0.7862

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	-0.0257	$\Delta P_{C,s}$	-0.0114
$\Delta P_{F,e}$	0.0007	$\Delta P_{g,F}$	-0.0009

着色度 Color Code	
λ_{80}/λ_5	340/290
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	608
T_s (℃)	664
$T_{10^{14.5}}$ (℃)	553
$T_{10^{13}}$ (℃)	594
$T_{10^{7.6}}$(℃)	754
$\alpha_{-30/70℃}$(10^{-7}/K)	78
$\alpha_{100/300℃}$(10^{-7}/K)	90
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	6
CR	
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.941	0.886
2200	0.960	0.922
2000	0.982	0.964
1800	0.991	0.982
1600	0.998	0.996
1400	0.996	0.992
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.997
700	0.998	0.997
650	0.998	0.996
600	0.998	0.996
550	0.998	0.996
500	0.997	0.995
480	0.997	0.995
460	0.997	0.994
440	0.996	0.993
420	0.996	0.993
400	0.995	0.990
390	0.993	0.987
380	0.991	0.983
370	0.987	0.975
360	0.977	0.954
350	0.957	0.915
340	0.915	0.837
330	0.840	0.700
320	0.700	0.500
310	0.510	0.260
300	0.300	0.090
290	0.120	0.010
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	515
F_A	104
E (10^7Pa)	7694
G (10^7Pa)	3026
μ	0.271
B (10^{-12}/Pa)	

其他性质 Other Properties	
ρ (g/cm^3)	3.66

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	1.4	2.1	2.4	2.5	3.5	4.1
-20～0	1.6	2.0	2.4	2.4	3.3	3.8
0～20	1.7	2.0	2.5	2.7	3.1	3.6
20～40	2.5	2.6	2.7	2.9	3.4	3.9
40～60	2.6	3.0	3.1	3.3	3.8	4.1
60～80	2.7	3.3	3.5	3.7	3.9	4.3
80～100						
100～120						
120～140						

CDGM

H-ZK21	623581	n_d = 1.62299	υ_d = 58.12	$n_F - n_C$ = 0.010719
		n_e = 1.62555	υ_e = 57.87	$n_{F'} - n_{C'}$ = 0.010809

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.61095
n_s	852.11	1.61396
n_r	706.52	1.61788
n_C	656.27	1.61973
$n_{C'}$	643.85	1.62025
n_{He-Ne}	632.8	1.62074
n_D	589.29	1.62290
n_d	587.56	1.62299
n_e	546.07	1.62555
n_F	486.13	1.63045
$n_{F'}$	479.99	1.63106
n_g	435.83	1.63626
n_h	404.66	1.64109
n_i	365.01	1.64933
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	2.5901947E+00
A_1	-1.0326156E-02
A_2	1.5859789E-02
A_3	1.5870508E-04
A_4	8.9750194E-06
A_5	-9.7736858E-08

折射率温度系数常数 Constants of dn/dt	
D_0	8.71E-07
D_1	1.71E-08
D_2	-8.72E-11
E_0	4.27E-07
E_1	-7.80E-10
λ_{TK}(μm)	0.222

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2808	$P'_{s,t}$	0.2785
$P_{C,s}$	0.5383	$P'_{C',s}$	0.5819
$P_{d,C}$	0.3046	$P'_{d,C'}$	0.2540
$P_{e,d}$	0.2384	$P'_{e,d}$	0.2364
$P_{g,F}$	0.5420	$P'_{g,F'}$	0.4811
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	-0.0010	$\Delta P_{C,s}$	-0.0009
$\Delta P_{F,e}$	-0.0010	$\Delta P_{g,F}$	-0.0047

着色度 Color Code	
λ_{80}/λ_5	350/300
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	646
T_s (℃)	692
$T_{10}^{14.5}$ (℃)	590
T_{10}^{13} (℃)	630
$T_{10}^{7.6}$(℃)	770
$\alpha_{-30/70℃}$(10^{-7}/K)	62
$\alpha_{100/300℃}$(10^{-7}/K)	75
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	2
D_A	4
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.848	0.719
2200	0.913	0.834
2000	0.973	0.947
1800	0.986	0.972
1600	0.994	0.987
1400	0.990	0.979
1200	0.998	0.996
1060	0.998	0.996
1000	0.998	0.996
950	0.998	0.996
900	0.998	0.997
850	0.998	0.997
800	0.998	0.996
700	0.997	0.995
650	0.997	0.995
600	0.997	0.994
550	0.997	0.994
500	0.997	0.994
480	0.997	0.994
460	0.997	0.994
440	0.995	0.991
420	0.995	0.990
400	0.993	0.986
390	0.990	0.980
380	0.985	0.971
370	0.974	0.949
360	0.954	0.911
350	0.917	0.840
340	0.849	0.720
330	0.740	0.548
320	0.572	0.327
310	0.352	0.124
300	0.158	0.025
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	581
F_A	134
E (10^7Pa)	10086
G (10^7Pa)	4073
μ	0.238
B (10^{-12}/Pa)	1.98

其他性质 Other Properties	
ρ (g/cm^3)	3.56

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	1.8	2.1	2.2	2.7	3.0	3.3
-20～0	1.8	2.0	2.3	2.6	2.8	3.2
0～20	2.0	2.7	2.9	3.0	3.2	3.6
20～40	2.3	2.4	2.6	2.7	3.2	3.5
40～60	2.2	2.5	2.7	2.9	3.1	3.7
60～80	2.4	2.5	2.6	2.9	3.0	3.6
80～100						
100～120						
120～140						

CDGM

H-ZK50	607567	n_d = 1.607380	υ_d = 56.65	$n_F - n_C$ = 0.010721
		n_e = 1.609935	υ_e = 56.37	$n_{F'} - n_{C'}$ = 0.010821

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	1.578561
$n_{1970.09}$	1970.09	1.583630
$n_{1529.58}$	1529.58	1.589073
$n_{1060.0}$	1060.0	1.594894
n_t	1013.98	1.595579
n_s	852.11	1.598471
n_r	706.52	1.602300
n_C	656.27	1.604136
$n_{C'}$	643.85	1.604651
n_{He-Ne}	632.8	1.605133
n_D	589.29	1.607285
n_d	587.56	1.607380
n_e	546.07	1.609935
n_F	486.13	1.614857
$n_{F'}$	479.99	1.615472
n_g	435.83	1.620734
n_h	404.66	1.625628
n_i	365.01	1.633993
$n_{313.18}$	313.18	1.651067
$n_{302.15}$	302.15	1.656137

色散公式常数 Constants of Dispersion Formula

K_1	4.34311306E-01
L_1	-1.92252587E-03
K_2	1.10560033E+00
L_2	1.47271072E-02
K_3	9.88776159E-01
L_3	1.10411650E+02

折射率温度系数常数 Constants of dn/dt

D_0	3.24E-06
D_1	1.77E-08
D_2	-2.57E-11
E_0	5.34E-07
E_1	1.22E-10
λ_{TK}(μm)	0.194

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2698	$P'_{s,t}$	0.2673
$P_{C,s}$	0.5284	$P'_{C',s}$	0.5711
$P_{d,C}$	0.3026	$P'_{d,C'}$	0.2522
$P_{e,d}$	0.2383	$P'_{e,d}$	0.2361
$P_{g,F}$	0.5482	$P'_{g,F'}$	0.4863
$P_{i,h}$	0.7802	$P'_{i,h}$	0.7730

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	-0.0151	$\Delta P_{C,s}$	-0.0073
$\Delta P_{F,e}$	0.0003	$\Delta P_{g,F}$	-0.0010

着色度 Color Code

λ_{80}/λ_5	345/295
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	655
T_s (℃)	721
$T_{10^{14.5}}$ (℃)	602
$T_{10^{13}}$ (℃)	640
$T_{10^{7.6}}$(℃)	798
$\alpha_{-30/70℃}$(10^{-7}/K)	68
$\alpha_{100/300℃}$(10^{-7}/K)	77
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	5
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.930	0.865
2200	0.957	0.915
2000	0.986	0.972
1800	0.992	0.985
1600	0.996	0.993
1400	0.994	0.989
1200	0.999	0.997
1060	0.999	0.997
1000	0.998	0.997
950	0.998	0.997
900	0.998	0.997
850	0.998	0.997
800	0.998	0.997
700	0.998	0.996
650	0.997	0.994
600	0.997	0.994
550	0.997	0.994
500	0.997	0.994
480	0.997	0.994
460	0.996	0.993
440	0.995	0.991
420	0.995	0.991
400	0.993	0.987
390	0.991	0.983
380	0.990	0.980
370	0.983	0.967
360	0.972	0.944
350	0.948	0.899
340	0.902	0.813
330	0.820	0.673
320	0.678	0.460
310	0.468	0.219
300	0.235	0.055
290	0.164	0.027
280		

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	3.0	3.5	3.7	3.8	4.2	4.6
-40～-20	3.0	3.5	3.7	3.8	4.2	4.6
-20～0	3.0	3.6	3.8	3.8	4.3	4.8
0～20	3.2	3.7	3.8	4.0	4.4	4.8
20～40	3.4	3.8	3.8	4.1	4.5	4.9
40～60	3.6	4.0	4.2	4.4	4.6	5.1
60～80	3.7	4.2	4.5	4.6	5.0	5.4
80～100	3.8	4.3	4.6	4.7	5.1	5.6
100～120	3.8	4.4	4.6	4.7	5.2	5.7
120～140	4.0	4.5	4.7	4.8	5.2	5.7

机械性质 Mechanical Properties

H_K (10^7Pa)	511
F_A	105
E (10^7Pa)	7598
G (10^7Pa)	3000
μ	0.266
B (10^{-12}/Pa)	2.27

其他性质 Other Properties

ρ (g/cm^3)	3.54

备注 Remarks

CDGM

H-ZK50GT	607567	n_d = 1.607380	υ_d = 56.65	$n_F - n_C$ = 0.010721
		n_e = 1.609935	υ_e = 56.37	$n_{F'} - n_{C'}$ = 0.010821

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	1.578561
$n_{1970.09}$	1970.09	1.583630
$n_{1529.58}$	1529.58	1.589073
$n_{1060.0}$	1060.0	1.594894
n_t	1013.98	1.595579
n_s	852.11	1.598471
n_r	706.52	1.602300
n_C	656.27	1.604136
$n_{C'}$	643.85	1.604651
n_{He-Ne}	632.8	1.605133
n_D	589.29	1.607285
n_d	587.56	1.607380
n_e	546.07	1.609935
n_F	486.13	1.614857
$n_{F'}$	479.99	1.615472
n_g	435.83	1.620734
n_h	404.66	1.625628
n_i	365.01	1.633993
$n_{313.18}$	313.18	1.651067
$n_{302.15}$	302.15	1.656137

色散公式常数 Constants of Dispersion Formula

K_1	4.34311306E-01
L_1	-1.92252587E-03
K_2	1.10560033E+00
L_2	1.47271072E-02
K_3	9.88776159E-01
L_3	1.10411650E+02

折射率温度系数常数 Constants of dn/dt

D_0	3.24E-06
D_1	1.77E-08
D_2	-2.57E-11
E_0	5.34E-07
E_1	1.22E-10
λ_{TK}(μm)	0.194

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2698	$P'_{s,t}$	0.2673
$P_{C,s}$	0.5284	$P'_{C',s}$	0.5711
$P_{d,C}$	0.3026	$P'_{d,C'}$	0.2522
$P_{e,d}$	0.2383	$P'_{e,d}$	0.2361
$P_{g,F}$	0.5482	$P'_{g,F'}$	0.4863
$P_{i,h}$	0.7802	$P'_{i,h}$	0.7730

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	-0.0151	$\Delta P_{C,s}$	-0.0073
$\Delta P_{F,e}$	0.0003	$\Delta P_{g,F}$	-0.0010

着色度 Color Code

λ_{80}/λ_5	335/280
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	655
T_s (℃)	721
$T_{10^{14.5}}$ (℃)	602
$T_{10^{13}}$ (℃)	640
$T_{10^{7.6}}$(℃)	798
$\alpha_{-30/70℃}$(10^{-7}/K)	68
$\alpha_{100/300℃}$(10^{-7}/K)	77
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	5
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.933	0.871
2200	0.960	0.922
2000	0.987	0.975
1800	0.993	0.987
1600	0.997	0.995
1400	0.995	0.991
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.998	0.997
650	0.998	0.997
600	0.998	0.997
550	0.998	0.996
500	0.998	0.996
480	0.998	0.996
460	0.998	0.996
440	0.998	0.996
420	0.998	0.996
400	0.998	0.996
390	0.997	0.994
380	0.996	0.993
370	0.993	0.987
360	0.989	0.978
350	0.981	0.962
340	0.962	0.925
330	0.932	0.868
320	0.873	0.762
310	0.773	0.598
300	0.622	0.387
290	0.415	0.172
280	0.197	0.039

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	3.0	3.5	3.7	3.8	4.2	4.6
-40～-20	3.0	3.5	3.7	3.8	4.2	4.6
-20～0	3.0	3.6	3.8	3.8	4.3	4.8
0～20	3.2	3.7	3.8	4.0	4.4	4.8
20～40	3.4	3.8	3.8	4.1	4.5	4.9
40～60	3.6	4.0	4.2	4.4	4.6	5.1
60～80	3.7	4.2	4.5	4.6	5.0	5.4
80～100	3.8	4.3	4.6	4.7	5.1	5.6
100～120	3.8	4.4	4.6	4.7	5.2	5.7
120～140	4.0	4.5	4.7	4.8	5.2	5.7

机械性质 Mechanical Properties

H_K (10^7Pa)	511
F_A	105
E (10^7Pa)	7598
G (10^7Pa)	3000
μ	0.266
B (10^{-12}/Pa)	2.27

其他性质 Other Properties

ρ (g/cm^3)	3.54

备注 Remarks

CDGM

H-LaK1	660574	n_d = 1.65950	υ_d = 57.35	$n_F - n_C$ = 0.011500
		n_e = 1.66224	υ_e = 57.30	$n_{F'} - n_{C'}$ = 0.011558

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.64671
n_s	852.11	1.64986
n_r	706.52	1.65403
n_C	656.27	1.65600
$n_{C'}$	643.85	1.65656
n_{He-Ne}	632.8	1.65708
n_D	589.29	1.65940
n_d	587.56	1.65950
n_e	546.07	1.66224
n_F	486.13	1.66750
$n_{F'}$	479.99	1.66816
n_g	435.83	1.67376
n_h	404.66	1.67896
n_i	365.01	1.68783
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

A_0	2.7043246E+00
A_1	-1.0006779E-02
A_2	1.8102254E-02
A_3	-2.1649488E-05
A_4	3.8150748E-05
A_5	-1.5787442E-06

折射率温度系数常数 Constants of dn/dt

D_0	-5.01E-06
D_1	2.49E-08
D_2	-4.65E-11
E_0	5.72E-07
E_1	-7.93E-10
λ_{TK}(μm)	0.060

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2739	$P'_{s,t}$	0.2725
$P_{C,s}$	0.5339	$P'_{C',s}$	0.5797
$P_{d,C}$	0.3043	$P'_{d,C'}$	0.2544
$P_{e,d}$	0.2383	$P'_{e,d}$	0.2371
$P_{g,F}$	0.5443	$P'_{g,F'}$	0.4845
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	-0.0087	$\Delta P_{C,s}$	-0.0034
$\Delta P_{F,e}$	-0.0010	$\Delta P_{g,F}$	-0.0037

着色度 Color Code

λ_{80}/λ_5	360/310
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	655
T_s (℃)	683
$T_{10^{14.5}}$ (℃)	601
$T_{10^{13}}$ (℃)	629
$T_{10^{7.6}}$(℃)	739
$\alpha_{-30/70℃}$(10^{-7}/K)	77
$\alpha_{100/300℃}$(10^{-7}/K)	87
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	3
D_A	6
CR	4a
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.890	0.790
2200	0.966	0.933
2000	0.990	0.981
1800	0.997	0.994
1600	0.999	0.998
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.998	0.996
800	0.996	0.992
700	0.995	0.991
650	0.995	0.990
600	0.995	0.990
550	0.995	0.990
500	0.994	0.989
480	0.993	0.987
460	0.992	0.985
440	0.991	0.983
420	0.990	0.981
400	0.987	0.974
390	0.983	0.966
380	0.976	0.952
370	0.963	0.927
360	0.939	0.880
350	0.901	0.810
340	0.840	0.700
330	0.740	0.550
320	0.620	0.380
310	0.470	0.220
300	0.320	0.100
290	0.200	0.040
280		

机械性质 Mechanical Properties

H_K (10^7Pa)	560
F_A	176
E (10^7Pa)	8873
G (10^7Pa)	3463
μ	0.281
B (10^{-12}/Pa)	1.45

其他性质 Other Properties

ρ (g/cm^3)	3.94

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	-1.8	-1.4	-0.5	-0.2	-0.1	0.2
-20～0	-1.1	-0.8	-0.4	-0.3	-0.1	0.1
0～20	-1.1	-0.6	-0.4	-0.2	0.0	0.2
20～40	-0.5	-0.1	0.0	0.2	0.4	0.8
40～60	-0.2	0.0	0.0	0.2	0.6	1.0
60～80	-0.2	-0.1	0.0	0.2	0.7	1.2
80～100						
100～120						
120～140						

H-LaK2A	692545	n_d = 1.692110	υ_d = 54.54	$n_F - n_C$ = 0.012690
		n_e = 1.695135	υ_e = 54.28	$n_{F'} - n_{C'}$ = 0.012807

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	1.657680
$n_{1970.09}$	1970.09	1.663841
$n_{1529.58}$	1529.58	1.670383
$n_{1060.0}$	1060.0	1.677314
n_t	1013.98	1.678128
n_s	852.11	1.681556
n_r	706.52	1.686094
n_C	656.27	1.688269
$n_{C'}$	643.85	1.688879
n_{He-Ne}	632.8	1.689449
n_D	589.29	1.691997
n_d	587.56	1.692110
n_e	546.07	1.695135
n_F	486.13	1.700959
$n_{F'}$	479.99	1.701686
n_g	435.83	1.707913
n_h	404.66	1.713705
n_i	365.01	1.723611
$n_{313.18}$	313.18	1.743879
$n_{302.15}$	302.15	1.749916

色散公式常数 Constants of Dispersion Formula

K_1	9.14808038E-01
L_1	8.23260698E+01
K_2	1.00522491E+00
L_2	4.50504400E-03
K_3	8.03415958E-01
L_3	1.83713420E-02

折射率温度系数常数 Constants of dn/dt

D_0	-5.16E-06
D_1	1.42E-08
D_2	-4.62E-11
E_0	5.61E-07
E_1	5.14E-10
λ_{TK}(μm)	0.155

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2701	$P'_{s,t}$	0.2677
$P_{C,s}$	0.5290	$P'_{C',s}$	0.5718
$P_{d,C}$	0.3027	$P'_{d,C'}$	0.2523
$P_{e,d}$	0.2384	$P'_{e,d}$	0.2362
$P_{g,F}$	0.5480	$P'_{g,F'}$	0.4862
$P_{i,h}$	0.7806	$P'_{i,h}$	0.7735

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	-0.0041	$\Delta P_{C,s}$	-0.0017
$\Delta P_{F,e}$	-0.0009	$\Delta P_{g,F}$	-0.0048

着色度 Color Code

λ_{80}/λ_5	375/310
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	634
T_s (℃)	660
$T_{10^{14.5}}$ (℃)	589
$T_{10^{13}}$ (℃)	612
$T_{10^{7.6}}$(℃)	710
$\alpha_{-30/70℃}$(10^{-7}/K)	80
$\alpha_{100/300℃}$(10^{-7}/K)	97
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	3
D_A	3
CR	2
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.820	0.673
2200	0.932	0.869
2000	0.975	0.950
1800	0.988	0.977
1600	0.995	0.991
1400	0.997	0.994
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.997	0.995
700	0.997	0.995
650	0.997	0.995
600	0.997	0.995
550	0.997	0.995
500	0.997	0.994
480	0.996	0.992
460	0.995	0.990
440	0.993	0.987
420	0.991	0.983
400	0.985	0.970
390	0.977	0.954
380	0.961	0.923
370	0.928	0.862
360	0.872	0.761
350	0.783	0.613
340	0.650	0.422
330	0.489	0.239
320	0.319	0.102
310	0.184	0.034
300		
290		
280		

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	-1.2	-0.7	-0.6	-0.5	0.0	0.1
-40～-20	-1.0	-0.6	-0.4	-0.4	0.2	0.3
-20～0	-1.3	-0.8	-0.6	-0.4	-0.2	0.1
0～20	-1.0	-0.7	-0.5	-0.2	-0.1	0.5
20～40	-0.9	-0.3	-0.3	-0.1	0.5	0.7
40～60	-0.8	-0.2	-0.1	0.0	0.5	0.9
60～80	-0.8	-0.1	0.0	0.1	0.7	0.9
80～100	-0.8	-0.3	-0.2	0.2	0.4	1.0
100～120	-0.8	-0.3	0.0	0.1	0.5	1.0
120～140	-0.7	-0.2	-0.1	0.1	0.5	1.1

机械性质 Mechanical Properties

H_K (10^7Pa)	535
F_A	159
E (10^7Pa)	9415
G (10^7Pa)	3635
μ	0.295
B (10^{-12}/Pa)	1.50

其他性质 Other Properties

ρ (g/cm^3)	3.94

备注 Remarks

CDGM

H-LaK3	747510	n_d = 1.74693	υ_d = 50.95	$n_F - n_C$ = 0.014660
		n_e = 1.75042	υ_e = 50.72	$n_{F'} - n_{C'}$ = 0.014794

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.73074
n_s	852.11	1.73471
n_r	706.52	1.73999
n_C	656.27	1.74250
$n_{C'}$	643.85	1.74320
n_{He-Ne}	632.8	1.74386
n_D	589.29	1.74680
n_d	587.56	1.74693
n_e	546.07	1.75042
n_F	486.13	1.75716
$n_{F'}$	479.99	1.75799
n_g	435.83	1.76518
n_h	404.66	1.77193
n_i	365.01	1.78336
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

A_0	2.9836537E+00
A_1	-1.2316383E-02
A_2	2.5584895E-02
A_3	-5.7081068E-04
A_4	1.4764802E-04
A_5	-7.5474106E-06

折射率温度系数常数 Constants of dn/dt

D_0	
D_1	
D_2	
E_0	
E_1	
λ_{TK}(μm)	

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2708	$P'_{s,t}$	0.2684
$P_{C,s}$	0.5314	$P'_{C',s}$	0.5739
$P_{d,C}$	0.3023	$P'_{d,C'}$	0.2521
$P_{e,d}$	0.2381	$P'_{e,d}$	0.2360
$P_{g,F}$	0.5471	$P'_{g,F'}$	0.4860
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	0.0159	$\Delta P_{C,s}$	0.0092
$\Delta P_{F,e}$	-0.0021	$\Delta P_{g,F}$	-0.0119

着色度 Color Code

λ_{80}/λ_5	380/320
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	663
T_s (℃)	689
$T_{10^{14.5}}$ (℃)	603
$T_{10^{13}}$ (℃)	634
$T_{10^{7.6}}$(℃)	742
$\alpha_{-30/70℃}$(10^{-7}/K)	60
$\alpha_{100/300℃}$(10^{-7}/K)	74
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	3
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.820	0.670
2200	0.951	0.905
2000	0.983	0.966
1800	0.996	0.992
1600	0.999	0.998
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.997
700	0.997	0.995
650	0.997	0.995
600	0.997	0.995
550	0.997	0.994
500	0.994	0.988
480	0.991	0.983
460	0.988	0.977
440	0.985	0.971
420	0.982	0.965
400	0.977	0.954
390	0.971	0.942
380	0.959	0.920
370	0.939	0.881
360	0.900	0.810
350	0.840	0.700
340	0.720	0.520
330	0.510	0.260
320	0.220	0.050
310		
300		
290		
280		

机械性质 Mechanical Properties

H_K (10^7Pa)	672
F_A	110
E (10^7Pa)	11471
G (10^7Pa)	4589
μ	0.250
B (10^{-12}/Pa)	1.59

其他性质 Other Properties

ρ (g/cm^3)	4.08

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	1.9	2.8	3.1	3.2	3.9	4.3
-20～0	2.7	3.2	3.9	4.0	4.4	4.6
0～20	2.9	3.6	4.1	4.5	4.9	5.3
20～40	3.5	4.1	4.2	4.5	5.2	5.8
40～60	4.0	4.5	4.8	5.1	5.4	5.9
60～80	4.4	4.6	4.8	5.2	5.7	8.2
80～100						
100～120						
120～140						

H-LaK4L	640602	n_d = 1.64000	υ_d = 60.20	$n_F - n_C$ = 0.010631
		n_e = 1.64254	υ_e = 60.00	$n_{F'} - n_{C'}$ = 0.010709

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.62754
n_s	852.11	1.63080
n_r	706.52	1.63486
n_C	656.27	1.63674
$n_{C'}$	643.85	1.63726
n_{He-Ne}	632.8	1.63775
n_D	589.29	1.63990
n_d	587.56	1.64000
n_e	546.07	1.64254
n_F	486.13	1.64737
$n_{F'}$	479.99	1.64797
n_g	435.83	1.65308
n_h	404.66	1.65780
n_i	365.01	1.66581
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	2.6476983E+00
A_1	-1.3771080E-02
A_2	1.5665045E-02
A_3	9.8267634E-05
A_4	2.2112348E-05
A_5	-1.0745550E-06

折射率温度系数常数 Constants of dn/dt	
D_0	1.06E-06
D_1	1.84E-08
D_2	-7.40E-11
E_0	2.79E-07
E_1	6.19E-10
λ_{TK}(μm)	0.275

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.3067	$P'_{s,t}$	0.3044
$P_{C,s}$	0.5587	$P'_{C',s}$	0.6032
$P_{d,C}$	0.3068	$P'_{d,C'}$	0.2559
$P_{e,d}$	0.2387	$P'_{e,d}$	0.2369
$P_{g,F}$	0.5370	$P'_{g,F'}$	0.4771
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0355	$\Delta P_{C,s}$	0.0147
$\Delta P_{F,e}$	-0.0023	$\Delta P_{g,F}$	-0.0062

着色度 Color Code	
λ_{80}/λ_5	355/275
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	666
T_s (℃)	686
$T_{10}^{14.5}$ (℃)	610
T_{10}^{13} (℃)	639
$T_{10}^{7.6}$(℃)	735
$\alpha_{-30/70℃}$(10^{-7}/K)	60
$\alpha_{100/300℃}$(10^{-7}/K)	78
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	4
D_A	4
CR	3
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.760	0.580
2200	0.918	0.842
2000	0.975	0.951
1800	0.990	0.980
1600	0.995	0.991
1400	0.998	0.996
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.998	0.997
650	0.998	0.997
600	0.998	0.997
550	0.998	0.996
500	0.997	0.995
480	0.997	0.994
460	0.995	0.991
440	0.994	0.988
420	0.992	0.984
400	0.987	0.974
390	0.981	0.963
380	0.971	0.943
370	0.953	0.908
360	0.920	0.847
350	0.870	0.760
340	0.790	0.630
330	0.690	0.470
320	0.560	0.310
310	0.420	0.170
300	0.290	0.080
290	0.190	0.040
280	0.120	0.010

机械性质 Mechanical Properties	
H_K (10^7Pa)	634
F_A	129
E (10^7Pa)	10903
G (10^7Pa)	4236
μ	0.287
B (10^{-12}/Pa)	1.99

其他性质 Other Properties	
ρ (g/cm^3)	2.99

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	1.4	1.8	1.9	2.0	2.2	2.7
-20～0	2.0	2.2	2.3	2.4	2.4	3.1
0～20	2.1	2.2	2.4	2.7	2.9	3.2
20～40	2.2	2.5	2.6	2.7	3.3	3.7
40～60	2.3	2.8	3.0	3.1	3.4	3.7
60～80	2.5	2.9	3.0	3.1	3.4	3.8
80～100						
100～120						
120～140						

H-LaK5A	678555	n_d = 1.677900	υ_d = 55.52	$n_F - n_C$ = 0.012211
		n_e = 1.680811	υ_e = 55.26	$n_{F'} - n_{C'}$ = 0.012320

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	1.643812
$n_{1970.09}$	1970.09	1.650028
$n_{1529.58}$	1529.58	1.656620
$n_{1060.0}$	1060.0	1.663527
n_t	1013.98	1.664328
n_s	852.11	1.667686
n_r	706.52	1.672093
n_C	656.27	1.674196
$n_{C'}$	643.85	1.674785
n_{He-Ne}	632.8	1.675335
n_D	589.29	1.677791
n_d	587.56	1.677900
n_e	546.07	1.680811
n_F	486.13	1.686407
$n_{F'}$	479.99	1.687105
n_g	435.83	1.693077
n_h	404.66	1.698626
n_i	365.01	1.708115
$n_{313.18}$	313.18	1.727567
$n_{302.15}$	302.15	1.733383

色散公式常数 Constants of Dispersion Formula

K_1	1.54437415E+00
L_1	8.15901025E-03
K_2	1.00066972E+00
L_2	8.89110754E+01
K_3	2.19123775E-01
L_3	2.67011064E-02

折射率温度系数常数 Constants of dn/dt

D_0	-4.10E-06
D_1	1.07E-08
D_2	-1.69E-11
E_0	5.87E-07
E_1	1.27E-09
λ_{TK}(μm)	0.095

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2750	$P'_{s,t}$	0.2726
$P_{C,s}$	0.5331	$P'_{C',s}$	0.5762
$P_{d,C}$	0.3033	$P'_{d,C'}$	0.2528
$P_{e,d}$	0.2384	$P'_{e,d}$	0.2363
$P_{g,F}$	0.5462	$P'_{g,F'}$	0.4847
$P_{i,h}$	0.7771	$P'_{i,h}$	0.7702

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	0.0003	$\Delta P_{C,s}$	0.0001
$\Delta P_{F,e}$	-0.0011	$\Delta P_{g,F}$	-0.0049

着色度 Color Code

λ_{80}/λ_5	360/295
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	646
T_s (℃)	669
$T_{10^{14.5}}$ (℃)	616
$T_{10^{13}}$ (℃)	632
$T_{10^{7.6}}$(℃)	722
$\alpha_{-30/70℃}$(10^{-7}/K)	80
$\alpha_{100/300℃}$(10^{-7}/K)	94
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	3
D_A	6
CR	2
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.855	0.731
2200	0.956	0.914
2000	0.984	0.969
1800	0.993	0.987
1600	0.997	0.995
1400	0.998	0.996
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.996
700	0.998	0.996
650	0.998	0.996
600	0.997	0.995
550	0.997	0.994
500	0.996	0.993
480	0.995	0.991
460	0.993	0.987
440	0.991	0.983
420	0.990	0.981
400	0.988	0.976
390	0.984	0.969
380	0.977	0.955
370	0.963	0.928
360	0.939	0.882
350	0.898	0.807
340	0.835	0.697
330	0.741	0.549
320	0.618	0.382
310	0.469	0.220
300	0.302	0.091
290	0.158	0.025
280		

机械性质 Mechanical Properties

H_K (10^7Pa)	576
F_A	174
E (10^7Pa)	9561
G (10^7Pa)	3705
μ	0.290
B (10^{-12}/Pa)	1.57

其他性质 Other Properties

ρ (g/cm^3)	3.80

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	-0.4	0.0	0.2	0.0	0.7	0.8
-40～-20	-0.1	0.1	0.2	0.3	0.4	0.8
-20～0	-0.5	0.0	0.0	0.2	0.6	0.9
0～20	-0.1	0.0	0.1	0.5	0.7	1.2
20～40	-0.2	0.3	0.5	0.7	1.1	1.6
40～60	-0.6	0.1	0.2	0.4	0.8	1.2
60～80	-0.3	0.4	0.6	0.8	1.1	1.6
80～100	-0.1	0.7	0.8	0.9	1.3	1.8
100～120	0.1	0.7	0.9	1.0	1.5	1.9
120～140	0.3	0.7	0.9	1.2	1.6	1.9

CDGM

H-LaK6A	694534	n_d = 1.69350	υ_d = 53.38	$n_F - n_C$ = 0.012992
		n_e = 1.69660	υ_e = 53.16	$n_{F'} - n_{C'}$ = 0.013105

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.67883
n_s	852.11	1.68255
n_r	706.52	1.68732
n_C	656.27	1.68955
$n_{C'}$	643.85	1.69018
n_{He-Ne}	632.8	1.69077
n_D	589.29	1.69339
n_d	587.56	1.69350
n_e	546.07	1.69660
n_F	486.13	1.70256
$n_{F'}$	479.99	1.70330
n_g	435.83	1.70969
n_h	404.66	1.71563
n_i	365.01	1.72583
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	2.8148405E+00
A_1	-1.4782362E-02
A_2	1.9020975E-02
A_3	3.3662821E-04
A_4	1.3568774E-05
A_5	-5.8552560E-07

折射率温度系数常数 Constants of dn/dt	
D_0	2.73E-06
D_1	1.81E-08
D_2	4.81E-11
E_0	6.35E-07
E_1	-7.14E-10
λ_{TK}(μm)	0.117

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2863	$P'_{s,t}$	0.2839
$P_{C,s}$	0.5388	$P'_{C',s}$	0.5822
$P_{d,C}$	0.3040	$P'_{d,C'}$	0.2533
$P_{e,d}$	0.2386	$P'_{e,d}$	0.2366
$P_{g,F}$	0.5488	$P'_{g,F'}$	0.4876
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0273	$\Delta P_{C,s}$	0.0109
$\Delta P_{F,e}$	-0.0018	$\Delta P_{g,F}$	-0.0060

着色度 Color Code	
λ_{80}/λ_5	365/320
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	638
T_s (℃)	673
$T_{10}^{14.5}$ (℃)	600
T_{10}^{13} (℃)	626
$T_{10}^{7.6}$(℃)	724
$\alpha_{-30/70℃}$(10^{-7}/K)	56
$\alpha_{100/300℃}$(10^{-7}/K)	73
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	2
D_A	6
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.770	0.590
2200	0.923	0.853
2000	0.976	0.953
1800	0.992	0.984
1600	0.999	0.998
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.999	0.998
650	0.999	0.998
600	0.999	0.998
550	0.998	0.997
500	0.997	0.994
480	0.996	0.993
460	0.995	0.990
440	0.993	0.987
420	0.991	0.983
400	0.988	0.976
390	0.983	0.967
380	0.975	0.951
370	0.960	0.922
360	0.929	0.863
350	0.870	0.760
340	0.730	0.540
330	0.470	0.220
320	0.140	0.020
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	683
F_A	113
E (10^7Pa)	10770
G (10^7Pa)	4206
μ	0.280
B (10^{-12}/Pa)	2.01

其他性质 Other Properties	
ρ (g/cm^3)	3.59

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	3.3	3.4	4.1	4.6	4.9	5.0
-20～0	3.4	3.6	3.9	4.4	4.9	5.1
0～20	3.5	3.9	4.1	4.3	5.1	5.1
20～40	3.4	3.8	4.5	4.5	5.1	5.2
40～60	3.7	4.1	4.4	4.7	4.7	5.2
60～80	4.2	4.7	5.0	5.2	5.6	5.8
80～100						
100～120						
120～140						

H-LaK7A	713538	n_d = 1.713000	υ_d = 53.83	$n_F - n_C$ = 0.013245
		n_e = 1.716157	υ_e = 53.61	$n_{F'} - n_{C'}$ = 0.013359

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	1.673161
$n_{1970.09}$	1970.09	1.680891
$n_{1529.58}$	1529.58	1.688970
$n_{1060.0}$	1060.0	1.697125
n_t	1013.98	1.698041
n_s	852.11	1.701819
n_r	706.52	1.706676
n_C	656.27	1.708972
$n_{C'}$	643.85	1.709614
n_{He-Ne}	632.8	1.710213
n_D	589.29	1.712882
n_d	587.56	1.713000
n_e	546.07	1.716157
n_F	486.13	1.722217
$n_{F'}$	479.99	1.722973
n_g	435.83	1.729438
n_h	404.66	1.735448
n_i	365.01	1.745730
$n_{313.18}$	313.18	1.766804
$n_{302.15}$	302.15	1.773094

色散公式常数 Constants of Dispersion Formula	
K_1	1.20674811E+00
L_1	8.43499012E+01
K_2	1.06717731E+00
L_2	4.38189500E-03
K_3	8.11229515E-01
L_3	1.89828890E-02

折射率温度系数常数 Constants of dn/dt	
D_0	1.82E-06
D_1	1.41E-08
D_2	-1.49E-11
E_0	4.32E-07
E_1	7.94E-10
λ_{TK}(μm)	0.207

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2852	$P'_{s,t}$	0.2828
$P_{C,s}$	0.5401	$P'_{C',s}$	0.5835
$P_{d,C}$	0.3041	$P'_{d,C'}$	0.2535
$P_{e,d}$	0.2384	$P'_{e,d}$	0.2363
$P_{g,F}$	0.5452	$P'_{g,F'}$	0.4839
$P_{i,h}$	0.7763	$P'_{i,h}$	0.7697

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0254	$\Delta P_{C,s}$	0.0110
$\Delta P_{F,e}$	-0.0027	$\Delta P_{g,F}$	-0.0088

着色度 Color Code	
λ_{80}/λ_5	365/270
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	663
T_s (℃)	690
$T_{10}^{14.5}$ (℃)	618
T_{10}^{13} (℃)	646
$T_{10}^{7.6}$(℃)	736
$\alpha_{-30/70℃}$(10^{-7}/K)	55
$\alpha_{100/300℃}$(10^{-7}/K)	73
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	3
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.778	0.605
2200	0.932	0.868
2000	0.977	0.955
1800	0.991	0.983
1600	0.996	0.993
1400	0.996	0.993
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.997	0.994
700	0.997	0.994
650	0.996	0.993
600	0.998	0.996
550	0.998	0.996
500	0.998	0.996
480	0.997	0.994
460	0.996	0.992
440	0.993	0.987
420	0.992	0.984
400	0.988	0.977
390	0.984	0.969
380	0.978	0.956
370	0.963	0.928
360	0.940	0.884
350	0.903	0.815
340	0.844	0.712
330	0.764	0.583
320	0.663	0.440
310	0.553	0.306
300	0.445	0.198
290	0.349	0.122
280	0.266	0.071

机械性质 Mechanical Properties	
H_K (10^7Pa)	703
F_A	104
E (10^7Pa)	11515
G (10^7Pa)	4529
μ	0.271
B (10^{-12}/Pa)	1.49

其他性质 Other Properties	
ρ (g/cm^3)	3.74

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	2.8	3.2	3.4	3.6	3.9	4.0
-40～-20	2.7	2.9	3.1	3.3	3.6	4.0
-20～0	2.7	3.0	3.2	3.4	3.7	4.0
0～20	2.8	3.0	3.3	3.5	3.8	4.2
20～40	3.0	3.3	3.5	3.6	4.1	4.5
40～60	3.0	3.5	3.7	3.9	4.4	4.7
60～80	3.2	3.8	3.9	4.1	4.7	4.9
80～100	3.3	4.0	4.1	4.4	4.8	5.2
100～120	3.4	4.1	4.2	4.5	5.0	5.5
120～140	3.5	4.1	4.3	4.6	5.0	5.7

CDGM

H-LaK8B	720503	n_d = 1.720000	υ_d = 50.28	$n_F - n_C$ = 0.014320
		n_e = 1.723410	υ_e = 50.02	$n_{F'} - n_{C'}$ = 0.014462

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	1.682742
$n_{1970.09}$	1970.09	1.689183
$n_{1529.58}$	1529.58	1.696087
$n_{1060.0}$	1060.0	1.703544
n_t	1013.98	1.704432
n_s	852.11	1.708206
n_r	706.52	1.713253
n_C	656.27	1.715686
$n_{C'}$	643.85	1.716370
n_{He-Ne}	632.8	1.717010
n_D	589.29	1.719873
n_d	587.56	1.720000
n_e	546.07	1.723410
n_F	486.13	1.730006
$n_{F'}$	479.99	1.730832
n_g	435.83	1.737929
n_h	404.66	1.744570
n_i	365.01	1.756025
$n_{313.18}$	313.18	1.779918
$n_{302.15}$	302.15	1.787175

色散公式常数 Constants of Dispersion Formula

K_1	1.55351121E+00
L_1	7.93041249E-03
K_2	3.42243754E-01
L_2	2.80174591E-02
K_3	1.07011974E+00
L_3	9.02590858E+01

折射率温度系数常数 Constants of dn/dt

D_0	-2.05E-07
D_1	1.37E-08
D_2	-3.29E-11
E_0	4.91E-07
E_1	6.32E-10
λ_{TK}(μm)	0.249

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2635	$P'_{s,t}$	0.2610
$P_{C,s}$	0.5223	$P'_{C',s}$	0.5645
$P_{d,C}$	0.3013	$P'_{d,C'}$	0.2510
$P_{e,d}$	0.2381	$P'_{e,d}$	0.2358
$P_{g,F}$	0.5533	$P'_{g,F'}$	0.4907
$P_{i,h}$	0.7999	$P'_{i,h}$	0.7921

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	0.0027	$\Delta P_{C,s}$	0.0017
$\Delta P_{F,e}$	-0.0016	$\Delta P_{g,F}$	-0.0068

着色度 Color Code

λ_{80}/λ_5	370/305
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	636
T_s (℃)	664
$T_{10^{14.5}}$ (℃)	591
$T_{10^{13}}$ (℃)	619
$T_{10^{7.6}}$(℃)	714
$\alpha_{-30/70℃}$(10^{-7}/K)	76
$\alpha_{100/300℃}$(10^{-7}/K)	91
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	3
CR	1
RC(S)	1
RA(S)	4

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.867	0.751
2200	0.963	0.928
2000	0.986	0.972
1800	0.995	0.990
1600	0.998	0.997
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.999	0.998
650	0.999	0.998
600	0.999	0.998
550	0.999	0.998
500	0.998	0.997
480	0.997	0.995
460	0.996	0.993
440	0.994	0.988
420	0.992	0.984
400	0.987	0.975
390	0.982	0.965
380	0.974	0.948
370	0.956	0.913
360	0.924	0.853
350	0.871	0.759
340	0.792	0.627
330	0.677	0.459
320	0.526	0.277
310	0.332	0.110
300		
290		
280		

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	1.4	1.9	2.1	2.3	2.6	3.0
-40～-20	1.4	2.0	2.2	2.3	2.7	3.1
-20～0	1.6	2.2	2.2	2.4	3.0	3.6
0～20	1.8	2.2	2.4	2.6	3.2	3.6
20～40	1.9	2.2	2.6	2.7	3.3	3.9
40～60	1.9	2.4	2.7	2.9	3.4	4.1
60～80	2.0	2.5	2.9	3.1	3.6	4.2
80～100	2.0	2.6	2.9	3.2	3.7	4.4
100～120	2.1	2.7	3.0	3.3	3.8	4.6
120～140	2.2	2.8	3.1	3.5	4.0	4.7

机械性质 Mechanical Properties

H_K (10^7Pa)	582
F_A	131
E (10^7Pa)	10461
G (10^7Pa)	4044
μ	0.293
B (10^{-12}/Pa)	1.76

其他性质 Other Properties

ρ (g/cm^3)	3.88

备注 Remarks

CDGM

H-LaK8A	720503	n_d = 1.72000	υ_d = 50.34	$n_F - n_C$ = 0.014302
		n_e = 1.72341	υ_e = 50.10	$n_{F'} - n_{C'}$ = 0.014439

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.70410
n_s	852.11	1.70806
n_r	706.52	1.71323
n_C	656.27	1.71568
$n_{C'}$	643.85	1.71636
n_{He-Ne}	632.8	1.71700
n_D	589.29	1.71987
n_d	587.56	1.72000
n_e	546.07	1.72341
n_F	486.13	1.72998
$n_{F'}$	479.99	1.73080
n_g	435.83	1.73789
n_h	404.66	1.74453
n_i	365.01	1.75603
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

A_0	2.8969731E+00
A_1	-1.4373805E-02
A_2	2.2228043E-02
A_3	1.0506728E-04
A_4	5.1698912E-05
A_5	-1.9041782E-06

折射率温度系数常数 Constants of dn/dt

D_0	4.02E-06
D_1	1.82E-08
D_2	-1.04E-10
E_0	4.87E-07
E_1	9.07E-10
λ_{TK}(μm)	0.216

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2769	$P'_{s,t}$	0.2743
$P_{C,s}$	0.5328	$P'_{C',s}$	0.5748
$P_{d,C}$	0.3020	$P'_{d,C'}$	0.2521
$P_{e,d}$	0.2384	$P'_{e,d}$	0.2361
$P_{g,F}$	0.5529	$P'_{g,F'}$	0.4908
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	0.0262	$\Delta P_{C,s}$	0.0120
$\Delta P_{F,e}$	-0.0028	$\Delta P_{g,F}$	-0.0071

着色度 Color Code

λ_{80}/λ_5	370/315
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	632
T_s (℃)	667
$T_{10}^{14.5}$ (℃)	591
T_{10}^{13} (℃)	626
$T_{10}^{7.6}$(℃)	721
$\alpha_{-30/70℃}$(10^{-7}/K)	53
$\alpha_{100/300℃}$(10^{-7}/K)	72
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	3
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.780	0.610
2200	0.927	0.860
2000	0.978	0.957
1800	0.993	0.987
1600	0.999	0.998
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.997	0.994
700	0.997	0.994
650	0.996	0.993
600	0.996	0.993
550	0.996	0.992
500	0.994	0.989
480	0.992	0.985
460	0.990	0.981
440	0.988	0.976
420	0.984	0.968
400	0.977	0.954
390	0.969	0.938
380	0.955	0.912
370	0.931	0.867
360	0.890	0.790
350	0.830	0.690
340	0.720	0.520
330	0.550	0.300
320	0.280	0.080
310		
300		
290		
280		

机械性质 Mechanical Properties

H_K (10^7Pa)	607
F_A	105
E (10^7Pa)	10941
G (10^7Pa)	4233
μ	0.292
B (10^{-12}/Pa)	1.92

其他性质 Other Properties

ρ (g/cm^3)	3.77

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	3.1	3.6	3.8	4.0	4.4	4.7
-20～0	3.9	4.2	4.4	4.7	5.1	5.5
0～20	4.1	4.2	4.3	4.9	5.3	5.8
20～40	4.2	4.7	5.0	5.2	5.7	6.0
40～60	4.2	5.0	5.0	5.2	5.8	6.4
60～80	4.3	5.1	5.2	5.2	5.9	6.5
80～100						
100～120						
120～140						

H-LaK10	651559	n_d = 1.651130	υ_d = 55.89	$n_F - n_C$ = 0.011650
		n_e = 1.653907	υ_e = 55.62	$n_{F'} - n_{C'}$ = 0.011757

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	1.619398
$n_{1970.09}$	1970.09	1.625037
$n_{1529.58}$	1529.58	1.631081
$n_{1060.0}$	1060.0	1.637506
n_t	1013.98	1.638259
n_s	852.11	1.641425
n_r	706.52	1.645602
n_C	656.27	1.647602
$n_{C'}$	643.85	1.648162
n_{He-Ne}	632.8	1.648686
n_D	589.29	1.651026
n_d	587.56	1.651130
n_e	546.07	1.653907
n_F	486.13	1.659252
$n_{F'}$	479.99	1.659919
n_g	435.83	1.665630
n_h	404.66	1.670941
n_i	365.01	1.680019
$n_{313.18}$	313.18	1.698570
$n_{302.15}$	302.15	1.704089

色散公式常数 Constants of Dispersion Formula

K_1	7.83174579E-01
L_1	2.73169490E-03
K_2	8.94315049E-01
L_2	1.69034325E-02
K_3	1.13896900E+00
L_3	1.11158589E+02

折射率温度系数常数 Constants of dn/dt

D_0	-9.18E-07
D_1	1.25E-08
D_2	-2.28E-11
E_0	4.91E-07
E_1	6.43E-10
λ_{TK}(μm)	0.189

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2718	$P'_{s,t}$	0.2693
$P_{C,s}$	0.5302	$P'_{C',s}$	0.5730
$P_{d,C}$	0.3028	$P'_{d,C'}$	0.2524
$P_{e,d}$	0.2384	$P'_{e,d}$	0.2362
$P_{g,F}$	0.5475	$P'_{g,F'}$	0.4858
$P_{i,h}$	0.7792	$P'_{i,h}$	0.7721

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	-0.0076	$\Delta P_{C,s}$	-0.0037
$\Delta P_{F,e}$	-0.0004	$\Delta P_{g,F}$	-0.0030

着色度 Color Code

λ_{80}/λ_5	355/305
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	618
T_s (℃)	668
$T_{10^{14.5}}$ (℃)	575
$T_{10^{13}}$ (℃)	607
$T_{10^{7.6}}$(℃)	721
$\alpha_{-30/70℃}$(10^{-7}/K)	71
$\alpha_{100/300℃}$(10^{-7}/K)	84
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	6
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.914	0.835
2200	0.969	0.938
2000	0.990	0.980
1800	0.996	0.992
1600	0.999	0.998
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.997
700	0.997	0.995
650	0.997	0.994
600	0.997	0.994
550	0.996	0.993
500	0.995	0.990
480	0.994	0.988
460	0.993	0.986
440	0.991	0.983
420	0.991	0.982
400	0.989	0.979
390	0.987	0.975
380	0.985	0.970
370	0.980	0.960
360	0.972	0.944
350	0.958	0.917
340	0.933	0.870
330	0.890	0.790
320	0.800	0.640
310	0.640	0.410
300	0.390	0.150
290	0.120	0.020
280		

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	1.4	1.7	1.9	2.0	2.3	2.6
-40～-20	1.2	1.6	1.7	1.9	2.4	2.6
-20～0	1.2	1.6	1.7	1.9	2.1	2.6
0～20	1.3	1.6	1.8	1.9	2.2	2.7
20～40	1.3	1.7	1.9	2.0	2.4	2.8
40～60	1.4	1.8	2.0	2.2	2.6	3.0
60～80	1.5	2.0	2.2	2.4	2.9	3.2
80～100	1.6	2.1	2.3	2.6	3.0	3.3
100～120	1.6	2.1	2.3	2.6	3.0	3.4
120～140	1.5	2.1	2.4	2.5	2.9	3.3

机械性质 Mechanical Properties

H_K (10^7Pa)	634
F_A	162
E (10^7Pa)	9309
G (10^7Pa)	3659
μ	0.272
B (10^{-12}/Pa)	1.74

其他性质 Other Properties

ρ (g/cm^3)	3.73

备注 Remarks

CDGM

H-LaK11	665546	n_d = 1.66461	υ_d = 54.61	$n_F - n_C$ = 0.012170
		n_e = 1.66750	υ_e = 54.40	$n_{F'} - n_{C'}$ = 0.012270

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.65128
n_s	852.11	1.65453
n_r	706.52	1.65886
n_C	656.27	1.66093
$n_{C'}$	643.85	1.66153
n_{He-Ne}	632.8	1.66207
n_D	589.29	1.66451
n_d	587.56	1.66461
n_e	546.07	1.66750
n_F	486.13	1.67310
$n_{F'}$	479.99	1.67380
n_g	435.83	1.67982
n_h	404.66	1.68542
n_i	365.01	1.69504
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

A_0	2.7175796E+00
A_1	-9.5280167E-03
A_2	1.9630987E-02
A_3	-2.3738430E-04
A_4	8.4831479E-05
A_5	-4.0964004E-06

折射率温度系数常数 Constants of dn/dt

D_0	-1.34E-06
D_1	2.38E-08
D_2	-5.50E-11
E_0	4.75E-07
E_1	6.18E-11
λ_{TK}(μm)	0.228

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2671	$P'_{s,t}$	0.2649
$P_{C,s}$	0.5259	$P'_{C',s}$	0.5705
$P_{d,C}$	0.3024	$P'_{d,C'}$	0.2510
$P_{e,d}$	0.2375	$P'_{e,d}$	0.2355
$P_{g,F}$	0.5522	$P'_{g,F'}$	0.4906
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	-0.0106	$\Delta P_{C,s}$	-0.0050
$\Delta P_{F,e}$	0.0003	$\Delta P_{g,F}$	-0.0005

着色度 Color Code

λ_{80}/λ_5	360/300
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	621
T_s (℃)	645
$T_{10}^{14.5}$ (℃)	578
T_{10}^{13} (℃)	608
$T_{10}^{7.6}$(℃)	708
$\alpha_{-30/70℃}$(10^{-7}/K)	72
$\alpha_{100/300℃}$(10^{-7}/K)	88
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	6
CR	3
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.880	0.780
2200	0.961	0.923
2000	0.986	0.973
1800	0.995	0.990
1600	0.999	0.998
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.997
700	0.998	0.997
650	0.997	0.994
600	0.996	0.993
550	0.996	0.993
500	0.996	0.993
480	0.995	0.990
460	0.993	0.987
440	0.992	0.984
420	0.991	0.983
400	0.990	0.980
390	0.987	0.975
380	0.983	0.966
370	0.975	0.950
360	0.959	0.919
350	0.936	0.876
340	0.897	0.805
330	0.840	0.700
320	0.750	0.560
310	0.600	0.360
300	0.370	0.140
290	0.110	0.010
280		

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	0.4	0.6	1.1	1.4	2.1	2.4
-20～0	0.6	1.1	1.3	1.5	1.9	2.2
0～20	0.8	1.2	1.4	1.7	1.9	2.2
20～40	1.4	1.8	1.9	2.3	2.6	3.1
40～60	1.6	1.8	2.0	2.3	2.7	3.2
60～80	1.6	1.8	2.0	2.2	2.7	3.2
80～100						
100～120						
120～140						

机械性质 Mechanical Properties

H_K (10^7Pa)	517
F_A	175
E (10^7Pa)	8434
G (10^7Pa)	3267
μ	0.291
B (10^{-12}/Pa)	1.93

其他性质 Other Properties

ρ (g/cm^3)	4.02

备注 Remarks

CDGM

H-LaK12	697562	n_d = 1.69680	υ_d = 56.18	$n_F - n_C$ = 0.012404
		n_e = 1.69976	υ_e = 55.96	$n_{F'} - n_{C'}$ = 0.012504

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.68269
n_s	852.11	1.68626
n_r	706.52	1.69086
n_C	656.27	1.69301
$n_{C'}$	643.85	1.69362
n_{He-Ne}	632.8	1.69418
n_D	589.29	1.69669
n_d	587.56	1.69680
n_e	546.07	1.69976
n_F	486.13	1.70542
$n_{F'}$	479.99	1.70612
n_g	435.83	1.71212
n_h	404.66	1.71768
n_i	365.01	1.72716
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

A_0	2.8267377E+00
A_1	-1.3633573E-02
A_2	1.9047421E-02
A_3	2.0468551E-04
A_4	8.8119305E-06
A_5	-2.1593786E-08

折射率温度系数常数 Constants of dn/dt

D_0	8.75E-08
D_1	1.90E-08
D_2	-8.47E-11
E_0	4.12E-07
E_1	-1.87E-10
λ_{TK}(μm)	0.224

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2878	$P'_{s,t}$	0.2855
$P_{C,s}$	0.5442	$P'_{C',s}$	0.5886
$P_{d,C}$	0.3052	$P'_{d,C'}$	0.2545
$P_{e,d}$	0.2385	$P'_{e,d}$	0.2366
$P_{g,F}$	0.5400	$P'_{g,F'}$	0.4797
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	0.0210	$\Delta P_{C,s}$	0.0096
$\Delta P_{F,e}$	-0.0027	$\Delta P_{g,F}$	-0.0100

着色度 Color Code

λ_{80}/λ_5	365/295
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	662
T_s (℃)	684
$T_{10}^{14.5}$ (℃)	631
T_{10}^{13} (℃)	658
$T_{10}^{7.6}$(℃)	732
$\alpha_{-30/70℃}$(10^{-7}/K)	64
$\alpha_{100/300℃}$(10^{-7}/K)	80
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	3
CR	1
RC(S)	1
RA(S)	6

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.787	0.619
2200	0.944	0.890
2000	0.981	0.961
1800	0.993	0.987
1600	0.998	0.995
1400	0.998	0.996
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.997
900	0.999	0.997
850	0.998	0.996
800	0.998	0.996
700	0.998	0.996
650	0.997	0.995
600	0.997	0.994
550	0.997	0.994
500	0.997	0.994
480	0.996	0.992
460	0.994	0.989
440	0.992	0.985
420	0.990	0.981
400	0.987	0.975
390	0.983	0.967
380	0.976	0.953
370	0.963	0.927
360	0.940	0.884
350	0.902	0.813
340	0.845	0.714
330	0.766	0.586
320	0.662	0.438
310	0.533	0.284
300	0.379	0.144
290	0.202	0.041
280		

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	1.5	1.6	1.9	2.0	2.4	2.4
-20～0	1.3	1.8	2.0	2.3	2.5	3.2
0～20	1.7	2.1	2.4	2.5	2.6	3.2
20～40	2.0	2.3	2.5	2.7	3.1	3.4
40～60	2.0	2.4	2.6	2.8	3.1	3.5
60～80	2.0	2.4	2.7	2.7	3.1	3.6
80～100						
100～120						
120～140						

机械性质 Mechanical Properties

H_K (10^7Pa)	686
F_A	118
E (10^7Pa)	10851
G (10^7Pa)	4337
μ	0.251
B (10^{-12}/Pa)	1.62

其他性质 Other Properties

ρ (g/cm^3)	3.71

备注 Remarks

CDGM

H-LaK50A	652584	n_d = 1.65160	υ_d = 58.40	$n_F - n_C$ = 0.011157
		n_e = 1.65426	υ_e = 58.15	$n_{F'} - n_{C'}$ = 0.011251

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.63880
n_s	852.11	1.64210
n_r	706.52	1.64625
n_C	656.27	1.64821
$n_{C'}$	643.85	1.64875
n_{He-Ne}	632.8	1.64925
n_D	589.29	1.65150
n_d	587.56	1.65160
n_e	546.07	1.65426
n_F	486.13	1.65936
$n_{F'}$	479.99	1.66000
n_g	435.83	1.66539
n_h	404.66	1.67039
n_i	365.01	1.67886
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	2.6841191E+00
A_1	-1.3655729E-02
A_2	1.5661713E-02
A_3	3.8271126E-04
A_4	-8.0234376E-06
A_5	1.7163368E-07

折射率温度系数常数 Constants of dn/dt	
D_0	5.60E-07
D_1	1.06E-08
D_2	-4.91E-11
E_0	3.57E-07
E_1	6.22E-10
λ_{TK}(μm)	0.245

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2958	$P'_{s,t}$	0.2933
$P_{C,s}$	0.5476	$P'_{C',s}$	0.5911
$P_{d,C}$	0.3038	$P'_{d,C'}$	0.2533
$P_{e,d}$	0.2384	$P'_{e,d}$	0.2364
$P_{g,F}$	0.5405	$P'_{g,F'}$	0.4791
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0220	$\Delta P_{C,s}$	0.0078
$\Delta P_{F,e}$	-0.0007	$\Delta P_{g,F}$	-0.0057

着色度 Color Code	
λ_{80}/λ_5	350/290
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	594
T_s (℃)	633
$T_{10}^{14.5}$ (℃)	554
T_{10}^{13} (℃)	585
$T_{10}^{7.6}$(℃)	688
$\alpha_{-30/70℃}$(10^{-7}/K)	63
$\alpha_{100/300℃}$(10^{-7}/K)	82
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	3
D_A	6
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.817	0.668
2200	0.943	0.889
2000	0.982	0.964
1800	0.993	0.985
1600	0.997	0.994
1400	0.996	0.993
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.997
800	0.998	0.996
700	0.998	0.996
650	0.998	0.996
600	0.997	0.995
550	0.997	0.994
500	0.997	0.994
480	0.996	0.992
460	0.994	0.989
440	0.993	0.986
420	0.991	0.983
400	0.989	0.979
390	0.986	0.972
380	0.979	0.959
370	0.969	0.938
360	0.948	0.899
350	0.913	0.833
340	0.852	0.726
330	0.764	0.584
320	0.640	0.409
310	0.488	0.238
300	0.319	0.102
290	0.167	0.028
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	618
F_A	135
E (10^7Pa)	10142
G (10^7Pa)	4011
μ	0.264
B (10^{-12}/Pa)	1.86

其他性质 Other Properties	
ρ (g/cm^3)	3.50

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	1.3	1.5	2.1	2.3	2.5	2.8
-20～0	2.0	2.6	2.7	2.8	3.0	3.3
0～20	2.0	2.3	2.6	2.7	2.8	3.2
20～40	2.0	2.2	2.5	2.6	2.9	3.3
40～60	2.1	2.4	2.5	2.6	2.8	3.5
60～80	2.2	2.3	2.4	2.9	3.7	3.9
80～100						
100～120						
120～140						

H-LaK51A	697555	n_d = 1.696800	υ_d = 55.53	$n_F - n_C$ = 0.012549
		n_e = 1.699791	υ_e = 55.30	$n_{F'} - n_{C'}$ = 0.012655

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	1.658467
$n_{1970.09}$	1970.09	1.665963
$n_{1529.58}$	1529.58	1.673803
$n_{1060.0}$	1060.0	1.681681
n_t	1013.98	1.682560
n_s	852.11	1.686174
n_r	706.52	1.690799
n_C	656.27	1.692979
$n_{C'}$	643.85	1.693588
n_{He-Ne}	632.8	1.694157
n_D	589.29	1.696688
n_d	587.56	1.696800
n_e	546.07	1.699791
n_F	486.13	1.705528
$n_{F'}$	479.99	1.706243
n_g	435.83	1.712357
n_h	404.66	1.718035
n_i	365.01	1.727736
$n_{313.18}$	313.18	1.747546
$n_{302.15}$	302.15	1.753437

色散公式常数 Constants of Dispersion Formula	
K_1	6.39398694E-01
L_1	5.67124825E-05
K_2	1.18748481E+00
L_2	1.58001968E-02
K_3	1.26545352E+00
L_3	9.10970530E+01

折射率温度系数常数 Constants of dn/dt	
D_0	8.08E-08
D_1	1.25E-08
D_2	-7.70E-12
E_0	4.99E-07
E_1	6.10E-10
λ_{TK}(μm)	0.161

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2880	$P'_{s,t}$	0.2856
$P_{C,s}$	0.5423	$P'_{C',s}$	0.5859
$P_{d,C}$	0.3045	$P'_{d,C'}$	0.2538
$P_{e,d}$	0.2383	$P'_{e,d}$	0.2363
$P_{g,F}$	0.5442	$P'_{g,F'}$	0.4831
$P_{i,h}$	0.7730	$P'_{i,h}$	0.7666

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0224	$\Delta P_{C,s}$	0.0093
$\Delta P_{F,e}$	-0.0022	$\Delta P_{g,F}$	-0.0070

着色度 Color Code	
λ_{80}/λ_5	365/275
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	654
T_s (℃)	682
$T_{10^{14.5}}$ (℃)	616
$T_{10^{13}}$ (℃)	640
$T_{10^{7.6}}$(℃)	724
$\alpha_{-30/70℃}$(10^{-7}/K)	63
$\alpha_{100/300℃}$(10^{-7}/K)	81
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	3
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.796	0.633
2200	0.945	0.892
2000	0.981	0.963
1800	0.993	0.987
1600	0.998	0.995
1400	0.998	0.996
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.996	0.993
700	0.996	0.993
650	0.997	0.995
600	0.997	0.995
550	0.997	0.995
500	0.997	0.994
480	0.997	0.994
460	0.995	0.990
440	0.993	0.987
420	0.992	0.985
400	0.990	0.980
390	0.987	0.975
380	0.983	0.966
370	0.972	0.945
360	0.956	0.913
350	0.928	0.861
340	0.883	0.780
330	0.822	0.675
320	0.744	0.553
310	0.652	0.425
300	0.558	0.312
290	0.467	0.218
280	0.385	0.148

机械性质 Mechanical Properties	
H_K (10^7Pa)	695
F_A	111
E (10^7Pa)	11314
G (10^7Pa)	4428
μ	0.278
B (10^{-12}/Pa)	1.69

其他性质 Other Properties	
ρ (g/cm^3)	3.56

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	1.6	2.0	2.0	2.3	2.6	2.8
-40～-20	1.9	2.0	2.3	2.4	2.8	3.1
-20～0	1.9	2.2	2.5	2.6	3.0	3.4
0～20	2.0	2.4	2.6	3.0	3.0	3.4
20～40	1.8	2.4	2.5	2.7	3.1	3.5
40～60	1.9	2.5	2.8	2.7	3.2	3.5
60～80	2.2	2.6	2.8	3.1	3.3	3.8
80～100	2.4	2.8	2.9	3.2	3.6	4.1
100～120	2.5	3.1	3.2	3.4	3.9	4.4
120～140	2.6	3.2	3.4	3.7	4.0	4.6

H-LaK52	729547	n_d = 1.729160	υ_d = 54.68	$n_F - n_C$ = 0.013334
		n_e = 1.732338	υ_e = 54.46	$n_{F'} - n_{C'}$ = 0.013448

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	1.689231
$n_{1970.09}$	1970.09	1.696947
$n_{1529.58}$	1529.58	1.705021
$n_{1060.0}$	1060.0	1.713192
n_t	1013.98	1.714111
n_s	852.11	1.717907
n_r	706.52	1.722794
n_C	656.27	1.725105
$n_{C'}$	643.85	1.725751
n_{He-Ne}	632.8	1.726354
n_D	589.29	1.729041
n_d	587.56	1.729160
n_e	546.07	1.732338
n_F	486.13	1.738439
$n_{F'}$	479.99	1.739199
n_g	435.83	1.745703
n_h	404.66	1.751745
n_i	365.01	1.762066
$n_{313.18}$	313.18	1.783138
$n_{302.15}$	302.15	1.789401

色散公式常数 Constants of Dispersion Formula	
K_1	6.48528792E-01
L_1	1.65816179E-04
K_2	1.28450424E+00
L_2	1.58113883E-02
K_3	1.23774593E+00
L_3	8.57406109E+01

折射率温度系数常数 Constants of dn/dt	
D_0	6.78E-07
D_1	1.74E-08
D_2	-3.85E-12
E_0	3.95E-07
E_1	7.06E-10
λ_{TK}(μm)	0.201

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2847	$P'_{s,t}$	0.2823
$P_{C,s}$	0.5398	$P'_{C',s}$	0.5833
$P_{d,C}$	0.3041	$P'_{d,C'}$	0.2535
$P_{e,d}$	0.2383	$P'_{e,d}$	0.2363
$P_{g,F}$	0.5448	$P'_{g,F'}$	0.4836
$P_{i,h}$	0.7740	$P'_{i,h}$	0.7675

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0206	$\Delta P_{C,s}$	0.0088
$\Delta P_{F,e}$	-0.0023	$\Delta P_{g,F}$	-0.0078

着色度 Color Code	
λ_{80}/λ_5	365/275
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	680
T_s (℃)	705
$T_{10^{14.5}}$ (℃)	638
$T_{10^{13}}$ (℃)	662
$T_{10^{7.6}}$(℃)	754
$\alpha_{-30/70℃}$(10^{-7}/K)	56
$\alpha_{100/300℃}$(10^{-7}/K)	72
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	3
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.840	0.700
2200	0.948	0.898
2000	0.981	0.962
1800	0.992	0.985
1600	0.998	0.996
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.998	0.997
650	0.998	0.997
600	0.997	0.995
550	0.997	0.995
500	0.997	0.994
480	0.997	0.994
460	0.995	0.991
440	0.994	0.988
420	0.992	0.984
400	0.988	0.977
390	0.984	0.969
380	0.983	0.966
370	0.966	0.933
360	0.950	0.900
350	0.910	0.830
340	0.860	0.740
330	0.780	0.610
320	0.690	0.470
310	0.570	0.330
300	0.480	0.230
290	0.390	0.150
280	0.260	0.070

机械性质 Mechanical Properties	
H_K (10^7Pa)	765
F_A	108
E (10^7Pa)	11761
G (10^7Pa)	4554
μ	0.291
B (10^{-12}/Pa)	1.43

其他性质 Other Properties	
ρ (g/cm^3)	4.02

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	1.9	2.1	2.4	2.7	2.9	3.2
-20～0	1.9	2.1	2.4	2.7	2.9	3.2
0～20	2.2	2.5	2.6	2.7	3.1	3.4
20～40	2.4	2.7	2.8	2.9	3.4	3.7
40～60	2.5	3.0	3.2	3.5	3.7	4.2
60～80	2.6	3.2	3.4	3.6	3.9	4.3
80～100						
100～120						
120～140						

H-LaK53B	755523	n_d = 1.755000	υ_d = 52.32	$n_F - n_C$ = 0.014430
		n_e = 1.758439	υ_e = 52.09	$n_{F'} - n_{C'}$ = 0.014561

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	1.713846
$n_{1970.09}$	1970.09	1.721539
$n_{1529.58}$	1529.58	1.729628
$n_{1060.0}$	1060.0	1.737976
n_t	1013.98	1.738933
n_s	852.11	1.742928
n_r	706.52	1.748142
n_C	656.27	1.750626
$n_{C'}$	643.85	1.751321
n_{He-Ne}	632.8	1.751971
n_D	589.29	1.754872
n_d	587.56	1.755000
n_e	546.07	1.758439
n_F	486.13	1.765056
$n_{F'}$	479.99	1.765882
n_g	435.83	1.772957
n_h	404.66	1.779543
n_i	365.01	1.790822
$n_{313.18}$	313.18	1.813974
$n_{302.15}$	302.15	1.820890

色散公式常数 Constants of Dispersion Formula

K_1	1.03141220E+00
L_1	3.95421648E-03
K_2	9.85282193E-01
L_2	1.86863118E-02
K_3	1.17066017E+00
L_3	8.11326753E+01

折射率温度系数常数 Constants of dn/dt

D_0	1.22E-06
D_1	1.66E-08
D_2	-2.94E-11
E_0	5.17E-07
E_1	4.19E-10
λ_{TK}(μm)	0.196

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2769	$P'_{s,t}$	0.2744
$P_{C,s}$	0.5335	$P'_{C',s}$	0.5764
$P_{d,C}$	0.3031	$P'_{d,C'}$	0.2527
$P_{e,d}$	0.2383	$P'_{e,d}$	0.2362
$P_{g,F}$	0.5475	$P'_{g,F'}$	0.4859
$P_{i,h}$	0.7816	$P'_{i,h}$	0.7746

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	0.0175	$\Delta P_{C,s}$	0.0080
$\Delta P_{F,e}$	-0.0025	$\Delta P_{g,F}$	-0.0091

着色度 Color Code

λ_{80}/λ_5	370/275
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	691
T_s (℃)	710
$T_{10^{14.5}}$ (℃)	641
$T_{10^{13}}$ (℃)	666
$T_{10^{7.6}}$(℃)	754
$\alpha_{-30/70℃}$(10^{-7}/K)	57
$\alpha_{100/300℃}$(10^{-7}/K)	73
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	3
CR	1
RC(S)	1
RA(S)	2

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.799	0.639
2200	0.944	0.892
2000	0.980	0.961
1800	0.994	0.987
1600	0.998	0.996
1400	0.998	0.996
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.999	0.998
650	0.999	0.998
600	0.999	0.998
550	0.998	0.997
500	0.998	0.997
480	0.997	0.994
460	0.996	0.993
440	0.993	0.986
420	0.991	0.983
400	0.986	0.972
390	0.981	0.962
380	0.973	0.946
370	0.955	0.912
360	0.926	0.857
350	0.882	0.778
340	0.819	0.670
330	0.733	0.538
320	0.629	0.396
310	0.495	0.245
300	0.407	0.166
290	0.307	0.094
280	0.192	0.037

机械性质 Mechanical Properties

H_K (10^7Pa)	692
F_A	93
E (10^7Pa)	12169
G (10^7Pa)	4701
μ	0.294
B (10^{-12}/Pa)	1.42

其他性质 Other Properties

ρ (g/cm^3)	4.22

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	2.3	2.7	2.7	3.0	3.6	3.7
-40～-20	2.3	2.8	2.9	3.1	3.7	4.0
-20～0	2.3	3.0	3.1	3.3	3.7	4.1
0～20	2.4	3.0	3.2	3.3	3.7	4.3
20～40	2.6	3.3	3.4	3.7	4.0	4.5
40～60	2.8	3.5	3.6	4.0	4.4	5.0
60～80	3.1	3.6	3.9	4.1	4.7	5.1
80～100	3.4	3.7	4.0	4.3	4.8	5.3
100～120	3.4	3.8	4.2	4.3	4.9	5.3
120～140	3.5	4.0	4.3	4.5	5.0	5.5

CDGM

H-LaK53A	755523	n_d = 1.75500	υ_d = 52.32	$n_F - n_C$ = 0.014430
		n_e = 1.75844	υ_e = 52.09	$n_{F'} - n_{C'}$ = 0.014561

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.73893
n_s	852.11	1.74291
n_r	706.52	1.74814
n_C	656.27	1.75063
$n_{C'}$	643.85	1.75132
n_{He-Ne}	632.8	1.75197
n_D	589.29	1.75487
n_d	587.56	1.75500
n_e	546.07	1.75844
n_F	486.13	1.76506
$n_{F'}$	479.99	1.76588
n_g	435.83	1.77297
n_h	404.66	1.77957
n_i	365.01	1.79088
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	3.0146046E+00
A_1	-1.3696881E-02
A_2	2.4103166E-02
A_3	-1.6758896E-04
A_4	8.2722151E-05
A_5	-3.7770305E-06

折射率温度系数常数 Constants of dn/dt	
D_0	2.01E-06
D_1	2.11E-08
D_2	-1.25E-10
E_0	5.29E-07
E_1	-2.58E-10
λ_{TK}(μm)	0.194

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2758	$P'_{s,t}$	0.2733
$P_{C,s}$	0.5350	$P'_{C',s}$	0.5776
$P_{d,C}$	0.3030	$P'_{d,C'}$	0.2526
$P_{e,d}$	0.2383	$P'_{e,d}$	0.2362
$P_{g,F}$	0.5478	$P'_{g,F'}$	0.4865
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0180	$\Delta P_{C,s}$	0.0096
$\Delta P_{F,e}$	-0.0024	$\Delta P_{g,F}$	-0.0088

着色度 Color Code	
λ_{80}/λ_5	370/280
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	685
T_s (℃)	710
$T_{10}^{14.5}$ (℃)	645
T_{10}^{13} (℃)	671
$T_{10}^{7.6}$(℃)	
$\alpha_{-30/70℃}$(10^{-7}/K)	61
$\alpha_{100/300℃}$(10^{-7}/K)	72
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	6
CR	
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.810	0.650
2200	0.947	0.898
2000	0.981	0.963
1800	0.995	0.990
1600	0.999	0.998
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.997
700	0.998	0.997
650	0.998	0.996
600	0.997	0.995
550	0.997	0.995
500	0.996	0.993
480	0.995	0.991
460	0.993	0.987
440	0.992	0.984
420	0.989	0.978
400	0.981	0.962
390	0.973	0.946
380	0.959	0.919
370	0.935	0.874
360	0.890	0.800
350	0.840	0.700
340	0.750	0.570
330	0.650	0.420
320	0.530	0.280
310	0.360	0.130
300	0.300	0.090
290	0.200	0.040
280	0.100	0.010

机械性质 Mechanical Properties	
H_K (10^7Pa)	729
F_A	114
E (10^7Pa)	10663
G (10^7Pa)	4142
μ	0.287
B (10^{-12}/Pa)	

其他性质 Other Properties	
ρ (g/cm^3)	4.39

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	1.7	2.1	2.3	3.0	3.5	3.7
-20～0	2.7	3.2	3.5	3.9	4.4	4.6
0～20	3.0	3.4	3.5	4.0	4.4	4.7
20～40	3.1	3.7	3.9	4.1	4.6	5.1
40～60	3.3	3.8	4.1	4.1	4.6	5.2
60～80	3.5	4.1	4.2	4.5	4.7	5.4
80～100						
100～120						
120～140						

CDGM

H-LaK54	734515	n_d = 1.734000	υ_d = 51.49	$n_F - n_C$ = 0.014256
		n_e = 1.737396	υ_e = 51.25	$n_{F'} - n_{C'}$ = 0.014389

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	1.693824
$n_{1970.09}$	1970.09	1.701236
$n_{1529.58}$	1529.58	1.709087
$n_{1060.0}$	1060.0	1.717247
n_t	1013.98	1.718186
n_s	852.11	1.722108
n_r	706.52	1.727238
n_C	656.27	1.729685
$n_{C'}$	643.85	1.730371
n_{He-Ne}	632.8	1.731011
n_D	589.29	1.733873
n_d	587.56	1.734000
n_e	546.07	1.737396
n_F	486.13	1.743941
$n_{F'}$	479.99	1.744760
n_g	435.83	1.751774
n_h	404.66	1.758314
n_i	365.01	1.769541
$n_{313.18}$	313.18	1.792663
$n_{302.15}$	302.15	1.799588

色散公式常数 Constants of Dispersion Formula

K_1	1.20772937E+00
L_1	1.76389155E-02
K_2	7.37418371E-01
L_2	6.66515982E-04
K_3	1.35749026E+00
L_3	9.69938806E+01

折射率温度系数常数 Constants of dn/dt

D_0	5.91E-06
D_1	1.71E-08
D_2	-2.96E-11
E_0	5.65E-07
E_1	5.05E-10
λ_{TK}(μm)	0.196

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2751	$P'_{s,t}$	0.2726
$P_{C,s}$	0.5315	$P'_{C',s}$	0.5743
$P_{d,C}$	0.3027	$P'_{d,C'}$	0.2522
$P_{e,d}$	0.2382	$P'_{e,d}$	0.2360
$P_{g,F}$	0.5495	$P'_{g,F'}$	0.4875
$P_{i,h}$	0.7875	$P'_{i,h}$	0.7802

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	0.0177	$\Delta P_{C,s}$	0.0080
$\Delta P_{F,e}$	-0.0024	$\Delta P_{g,F}$	-0.0086

着色度 Color Code

λ_{80}/λ_5	365/275
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	639
T_s (℃)	676
$T_{10^{14.5}}$ (℃)	597
$T_{10^{13}}$ (℃)	626
$T_{10^{7.6}}$(℃)	729
$\alpha_{-30/70℃}$(10^{-7}/K)	51
$\alpha_{100/300℃}$(10^{-7}/K)	74
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	3
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.810	0.650
2200	0.948	0.899
2000	0.981	0.962
1800	0.992	0.985
1600	0.998	0.997
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.998	0.997
800	0.998	0.996
700	0.997	0.995
650	0.997	0.994
600	0.997	0.994
550	0.997	0.994
500	0.996	0.992
480	0.995	0.990
460	0.993	0.987
440	0.992	0.984
420	0.989	0.979
400	0.984	0.969
390	0.978	0.957
380	0.969	0.938
370	0.951	0.905
360	0.924	0.853
350	0.880	0.780
340	0.820	0.670
330	0.730	0.530
320	0.620	0.390
310	0.490	0.240
300	0.350	0.120
290	0.200	0.040
280		

机械性质 Mechanical Properties

H_K (10^7Pa)	770
F_A	61
E (10^7Pa)	11387
G (10^7Pa)	4401
μ	0.294
B (10^{-12}/Pa)	1.93

其他性质 Other Properties

ρ (g/cm^3)	4.01

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	4.7	5.2	5.4	5.6	6.1	6.6
-40～-20	4.8	5.3	5.6	5.7	6.3	6.8
-20～0	5.1	5.4	5.7	5.9	6.5	7.0
0～20	5.4	5.8	6.0	6.4	6.7	7.4
20～40	5.5	6.1	6.4	6.7	7.1	7.6
40～60	5.6	6.2	6.5	6.7	7.2	7.7
60～80	5.6	6.2	6.5	6.7	7.2	7.7
80～100	5.8	6.5	6.6	7.0	7.5	8.0
100～120	5.9	6.7	6.9	7.3	7.7	8.4
120～140	6.3	7.1	7.5	7.6	8.3	8.9

CDGM

H-LaK59A	691548	n_d = 1.69100	υ_d = 54.82	$n_F - n_C$ = 0.012606
		n_e = 1.69401	υ_e = 54.60	$n_{F'} - n_{C'}$ = 0.012711

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.67704
n_s	852.11	1.68043
n_r	706.52	1.68500
n_C	656.27	1.68716
$n_{C'}$	643.85	1.68777
n_{He-Ne}	632.8	1.68834
n_D	589.29	1.69089
n_d	587.56	1.69100
n_e	546.07	1.69401
n_F	486.13	1.69976
$n_{F'}$	479.99	1.70048
n_g	435.83	1.70666
n_h	404.66	1.71240
n_i	365.01	1.72224
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	2.7997275E+00
A_1	-8.7318903E-03
A_2	2.3015916E-02
A_3	-8.5019383E-04
A_4	1.5286459E-04
A_5	-6.9174660E-06

折射率温度系数常数 Constants of dn/dt	
D_0	-5.15E-06
D_1	2.29E-08
D_2	-1.61E-10
E_0	5.25E-07
E_1	-6.63E-10
λ_{TK}(μm)	0.169

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2689	$P'_{s,t}$	0.2667
$P_{C,s}$	0.5339	$P'_{C',s}$	0.5775
$P_{d,C}$	0.3046	$P'_{d,C'}$	0.2541
$P_{e,d}$	0.2388	$P'_{e,d}$	0.2368
$P_{g,F}$	0.5471	$P'_{g,F'}$	0.4860
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	-0.0018	$\Delta P_{C,s}$	0.0025
$\Delta P_{F,e}$	-0.0036	$\Delta P_{g,F}$	-0.0052

着色度 Color Code	
λ_{80}/λ_5	375/305
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	634
T_s (℃)	658
$T_{10^{14.5}}$ (℃)	592
$T_{10^{13}}$ (℃)	615
$T_{10^{7.6}}$(℃)	707
$\alpha_{-30/70℃}$(10^{-7}/K)	82
$\alpha_{100/300℃}$(10^{-7}/K)	96
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	3
D_A	4
CR	3
RC(S)	1
RA(S)	5

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.812	0.659
2200	0.926	0.858
2000	0.973	0.947
1800	0.987	0.975
1600	0.995	0.990
1400	0.996	0.993
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.998	0.996
650	0.998	0.996
600	0.997	0.995
550	0.997	0.995
500	0.997	0.995
480	0.996	0.993
460	0.995	0.991
440	0.993	0.987
420	0.992	0.985
400	0.986	0.972
390	0.978	0.956
380	0.963	0.928
370	0.933	0.871
360	0.884	0.781
350	0.800	0.640
340	0.676	0.457
330	0.521	0.271
320	0.352	0.124
310	0.207	0.043
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	537
F_A	161
E (10^7Pa)	9378
G (10^7Pa)	3623
μ	0.294
B (10^{-12}/Pa)	1.52

其他性质 Other Properties	
ρ (g/cm^3)	3.94

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	-2.4	-2.0	-1.7	-1.3	-0.9	-0.4
-20～0	-1.4	-0.8	-0.7	-0.5	-0.3	0.2
0～20	-1.0	-0.8	-0.5	-0.4	-0.1	0.4
20～40	-0.9	-0.4	-0.3	-0.1	0.4	0.4
40～60	-0.8	-0.2	-0.2	-0.2	0.2	0.6
60～80	-1.0	-0.4	-0.1	0.1	0.3	0.7
80～100						
100～120						
120～140						

CDGM

H-LaK61	741526	n_d = 1.74100	υ_d = 52.64	$n_F - n_C$ = 0.014078
		n_e = 1.74435	υ_e = 52.41	$n_{F'} - n_{C'}$ = 0.014203

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.72533
n_s	852.11	1.72921
n_r	706.52	1.73431
n_C	656.27	1.73673
$n_{C'}$	643.85	1.73741
n_{He-Ne}	632.8	1.73804
n_D	589.29	1.74087
n_d	587.56	1.74100
n_e	546.07	1.74435
n_F	486.13	1.75080
$n_{F'}$	479.99	1.75161
n_g	435.83	1.75849
n_h	404.66	1.76490
n_i	365.01	1.77587
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	2.9688358E+00
A_1	-1.3703746E-02
A_2	2.2480687E-02
A_3	1.3022706E-04
A_4	3.5247835E-05
A_5	-1.3482706E-06

折射率温度系数常数 Constants of dn/dt	
D_0	3.47E-06
D_1	1.55E-08
D_2	-6.52E-11
E_0	4.66E-07
E_1	6.39E-10
λ_{TK}(μm)	0.220

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2756	$P'_{s,t}$	0.2732
$P_{C,s}$	0.5342	$P'_{C',s}$	0.5773
$P_{d,C}$	0.3034	$P'_{d,C'}$	0.2528
$P_{e,d}$	0.2380	$P'_{e,d}$	0.2359
$P_{g,F}$	0.5464	$P'_{g,F'}$	0.4845
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0155	$\Delta P_{C,s}$	0.0080
$\Delta P_{F,e}$	-0.0026	$\Delta P_{g,F}$	-0.0096

着色度 Color Code	
λ_{80}/λ_5	370/285
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	662
T_s (℃)	684
$T_{10^{14.5}}$ (℃)	623
$T_{10^{13}}$ (℃)	652
$T_{10^{7.6}}$(℃)	739
$\alpha_{-30/70℃}$(10^{-7}/K)	58
$\alpha_{100/300℃}$(10^{-7}/K)	72
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	6
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.810	0.660
2200	0.952	0.906
2000	0.983	0.967
1800	0.996	0.992
1600	0.999	0.998
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.996
700	0.998	0.996
650	0.998	0.996
600	0.997	0.995
550	0.997	0.995
500	0.996	0.993
480	0.996	0.992
460	0.994	0.989
440	0.993	0.987
420	0.992	0.984
400	0.989	0.978
390	0.986	0.972
380	0.980	0.961
370	0.971	0.943
360	0.955	0.912
350	0.931	0.867
340	0.890	0.800
330	0.840	0.710
320	0.780	0.610
310	0.710	0.500
300	0.620	0.390
290	0.550	0.300
280	0.470	0.220

机械性质 Mechanical Properties	
H_K (10^7Pa)	723
F_A	100
E (10^7Pa)	11834
G (10^7Pa)	4562
μ	0.297
B (10^{-12}/Pa)	1.61

其他性质 Other Properties	
ρ (g/cm^3)	4.10

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	3.5	3.9	4.1	4.3	4.5	5.2
-20～0	3.5	3.8	3.9	4.3	5.0	5.3
0～20	3.6	4.5	4.6	4.8	5.1	5.2
20～40	4.1	4.5	4.6	4.9	5.5	5.8
40～60	4.1	4.4	4.5	4.9	5.5	6.1
60～80	4.2	4.5	4.7	5.0	5.6	6.1
80～100						
100～120						
120～140						

H-LaK67	670517	n_d = 1.67000	υ_d = 51.70	$n_F - n_C$ = 0.012950
		n_e = 1.67308	υ_e = 51.50	$n_{F'} - n_{C'}$ = 0.013080

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	
n_s	852.11	
n_r	706.52	1.66389
n_C	656.27	1.66610
$n_{C'}$	643.85	1.66671
n_{He-Ne}	632.8	1.66730
n_D	589.29	1.66988
n_d	587.56	1.67000
n_e	546.07	1.67308
n_F	486.13	1.67905
$n_{F'}$	479.99	1.67979
n_g	435.83	1.68622
n_h	404.66	1.69224
n_i	365.01	1.70269
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	2.7410828E+00
A_1	-1.6285022E-02
A_2	1.5866919E-02
A_3	1.0819231E-03
A_4	-7.7131038E-05
A_5	4.0333330E-06

折射率温度系数常数 Constants of dn/dt	
D_0	
D_1	
D_2	
E_0	
E_1	
λ_{TK}(μm)	

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$		$P'_{s,t}$	
$P_{C,s}$		$P'_{C',s}$	
$P_{d,C}$	0.3012	$P'_{d,C'}$	0.2515
$P_{e,d}$	0.2378	$P'_{e,d}$	0.2355
$P_{g,F}$	0.5537	$P'_{g,F'}$	0.4916
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$		$\Delta P_{C,s}$	
$\Delta P_{F,e}$	-0.0004	$\Delta P_{g,F}$	-0.0040

着色度 Color Code	
λ_{80}/λ_5	350/300
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	584
T_s (℃)	640
$T_{10}^{14.5}$ (℃)	535
T_{10}^{13} (℃)	571
$T_{10}^{7.6}$(℃)	
$\alpha_{-30/70℃}$(10^{-7}/K)	70
$\alpha_{100/300℃}$(10^{-7}/K)	84
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	6
CR	
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.938	0.879
2200	0.976	0.953
2000	0.991	0.983
1800	0.996	0.993
1600	0.999	0.998
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.997
700	0.998	0.997
650	0.998	0.996
600	0.998	0.996
550	0.998	0.996
500	0.996	0.993
480	0.996	0.992
460	0.995	0.990
440	0.994	0.988
420	0.993	0.987
400	0.991	0.983
390	0.989	0.979
380	0.986	0.973
370	0.981	0.963
360	0.970	0.941
350	0.950	0.903
340	0.913	0.834
330	0.850	0.720
320	0.750	0.560
310	0.590	0.350
300	0.340	0.120
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	615
F_A	157
E (10^7Pa)	9698
G (10^7Pa)	3786
μ	0.281
B (10^{-12}/Pa)	

其他性质 Other Properties	
ρ (g/cm^3)	3.73

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20						
-20～0						
0～20						
20～40						
40～60						
60～80						
80～100						
100～120						
120～140						

CDGM

H-KF6	517522	n_d = 1.51742	υ_d = 52.15	$n_F - n_C$ = 0.009922
		n_e = 1.51977	υ_e = 51.85	$n_{F'} - n_{C'}$ = 0.010024

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.50638
n_s	852.11	1.50918
n_r	706.52	1.51275
n_C	656.27	1.51444
$n_{C'}$	643.85	1.51491
n_{He-Ne}	632.8	1.51535
n_D	589.29	1.51733
n_d	587.56	1.51742
n_e	546.07	1.51977
n_F	486.13	1.52436
$n_{F'}$	479.99	1.52493
n_g	435.83	1.52989
n_h	404.66	1.53460
n_i	365.01	1.54295
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	2.2692468E+00
A_1	-1.1113572E-02
A_2	1.0955079E-02
A_3	8.1117945E-04
A_4	-7.0718072E-05
A_5	4.6950967E-06

折射率温度系数常数 Constants of dn/dt	
D_0	-5.94E-07
D_1	1.77E-08
D_2	-1.13E-10
E_0	5.53E-07
E_1	9.82E-10
λ_{TK}(μm)	0.212

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2822	$P'_{s,t}$	0.2793
$P_{C,s}$	0.5301	$P'_{C',s}$	0.5716
$P_{d,C}$	0.3003	$P'_{d,C'}$	0.2504
$P_{e,d}$	0.2368	$P'_{e,d}$	0.2344
$P_{g,F}$	0.5573	$P'_{g,F'}$	0.4948
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0204	$\Delta P_{C,s}$	0.0051
$\Delta P_{F,e}$	0.0014	$\Delta P_{g,F}$	0.0005

着色度 Color Code	
λ_{80}/λ_5	360/340
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	438
T_s (℃)	519
$T_{10^{14.5}}$ (℃)	405
$T_{10^{13}}$ (℃)	451
$T_{10^{7.6}}$(℃)	635
$\alpha_{-30/70℃}$(10^{-7}/K)	70
$\alpha_{100/300℃}$(10^{-7}/K)	88
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	1
CR	1
RC(S)	1
RA(S)	1

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.938	0.879
2200	0.958	0.918
2000	0.992	0.984
1800	0.996	0.993
1600	0.999	0.998
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.998	0.997
650	0.998	0.996
600	0.998	0.996
550	0.997	0.995
500	0.996	0.993
480	0.995	0.991
460	0.994	0.989
440	0.993	0.986
420	0.991	0.983
400	0.989	0.978
390	0.986	0.972
380	0.978	0.957
370	0.964	0.929
360	0.907	0.823
350	0.730	0.530
340	0.300	0.090
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	456
F_A	73
E (10^7Pa)	6626
G (10^7Pa)	2711
μ	0.222
B (10^{-12}/Pa)	3.17

其他性质 Other Properties	
ρ (g/cm^3)	2.47

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	0.6	0.7	0.8	1.4	1.6	2.0
-20～0	1.3	2.0	2.0	2.1	2.2	2.5
0～20	1.3	1.7	1.7	1.8	2.1	2.8
20～40	1.3	1.7	2.0	2.1	2.6	2.9
40～60	1.3	2.0	2.1	2.3	2.7	3.1
60～80	1.7	1.9	2.2	2.3	2.9	3.3
80～100						
100～120						
120～140						

CDGM

H-QF1	548458	n_d = 1.54814	υ_d = 45.82	$n_F - n_C$ = 0.011963
		n_e = 1.55098	υ_e = 45.52	$n_{F'} - n_{C'}$ = 0.012104

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.53538
n_s	852.11	1.53846
n_r	706.52	1.54258
n_C	656.27	1.54458
$n_{C'}$	643.85	1.54514
n_{He-Ne}	632.8	1.54567
n_D	589.29	1.54803
n_d	587.56	1.54814
n_e	546.07	1.55098
n_F	486.13	1.55654
$n_{F'}$	479.99	1.55724
n_g	435.83	1.56334
n_h	404.66	1.56915
n_i	365.01	1.57955
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	2.3520977E+00
A_1	-9.5308857E-03
A_2	1.4948090E-02
A_3	6.1397180E-04
A_4	-3.0748142E-05
A_5	3.2636314E-06

折射率温度系数常数 Constants of dn/dt	
D_0	-3.37E-06
D_1	1.32E-08
D_2	-5.38E-11
E_0	6.46E-07
E_1	6.50E-10
λ_{TK}(μm)	0.251

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2575	$P'_{s,t}$	0.2545
$P_{C,s}$	0.5116	$P'_{C',s}$	0.5519
$P_{d,C}$	0.2976	$P'_{d,C'}$	0.2479
$P_{e,d}$	0.2374	$P'_{e,d}$	0.2346
$P_{g,F}$	0.5684	$P'_{g,F'}$	0.5040
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0069	$\Delta P_{C,s}$	0.0015
$\Delta P_{F,e}$	0.0002	$\Delta P_{g,F}$	0.0008

着色度 Color Code	
λ_{80}/λ_5	370/340
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	473
T_s (℃)	541
$T_{10}^{14.5}$ (℃)	421
T_{10}^{13} (℃)	458
$T_{10}^{7.6}$(℃)	625
$\alpha_{-30/70℃}$(10^{-7}/K)	93
$\alpha_{100/300℃}$(10^{-7}/K)	110
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	1
CR	2
RC(S)	1
RA(S)	1

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.899	0.809
2200	0.927	0.859
2000	0.964	0.929
1800	0.984	0.968
1600	0.996	0.991
1400	0.997	0.995
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.998	0.997
650	0.998	0.997
600	0.998	0.997
550	0.998	0.997
500	0.998	0.996
480	0.997	0.995
460	0.997	0.995
440	0.996	0.993
420	0.996	0.992
400	0.993	0.986
390	0.988	0.976
380	0.976	0.953
370	0.949	0.900
360	0.867	0.751
350	0.620	0.384
340	0.187	0.035
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	462
F_A	99
E (10^7Pa)	7186
G (10^7Pa)	2928
μ	0.227
B (10^{-12}/Pa)	2.58

其他性质 Other Properties	
ρ (g/cm^3)	2.58

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	0.1	0.5	0.8	1.0	1.4	1.9
-20～0	0.1	0.6	0.8	1.0	1.6	2.0
0～20	0.2	0.8	0.8	1.1	1.7	2.1
20～40	0.2	0.8	0.9	1.2	1.7	2.5
40～60	0.2	0.8	0.9	1.4	1.7	2.5
60～80	0.3	1.0	1.1	1.5	1.8	2.5
80～100						
100～120						
120～140						

QF1	548459	n_d = 1.54811	υ_d = 45.87	$n_F - n_C$ = 0.011950
		n_e = 1.55094	υ_e = 45.57	$n_{F'} - n_{C'}$ = 0.012090

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	
n_s	852.11	
n_r	706.52	1.54255
n_C	656.27	1.54454
$n_{C'}$	643.85	1.54510
n_{He-Ne}	632.8	1.54563
n_D	589.29	1.54800
n_d	587.56	1.54811
n_e	546.07	1.55094
n_F	486.13	1.55649
$n_{F'}$	479.99	1.55719
n_g	435.83	1.56329
n_h	404.66	1.56911
n_i	365.01	1.57931
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

A_0	2.3504951E+00
A_1	-8.6857021E-03
A_2	1.6092857E-02
A_3	1.8705912E-04
A_4	4.2149581E-05
A_5	-1.3216062E-06

折射率温度系数常数 Constants of dn/dt

D_0	
D_1	
D_2	
E_0	
E_1	
λ_{TK}(μm)	

相对部分色散 Relative Partial Dispersions

$P_{s,t}$		$P'_{s,t}$	
$P_{C,s}$		$P'_{C',s}$	
$P_{d,C}$	0.2983	$P'_{d,C'}$	0.2483
$P_{e,d}$	0.2370	$P'_{e,d}$	0.2342
$P_{g,F}$	0.5689	$P'_{g,F'}$	0.5041
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$		$\Delta P_{C,s}$	
$\Delta P_{F,e}$	0.0001	$\Delta P_{g,F}$	0.0013

着色度 Color Code

λ_{80}/λ_5	330/310
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	444
T_s (℃)	518
$T_{10}^{14.5}$ (℃)	384
T_{10}^{13} (℃)	430
$T_{10}^{7.6}$(℃)	
$\alpha_{-30/70℃}$(10^{-7}/K)	77
$\alpha_{100/300℃}$(10^{-7}/K)	93
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	1
CR	
RC(S)	3
RA(S)	1

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.880	0.770
2200	0.909	0.827
2000	0.955	0.912
1800	0.981	0.962
1600	0.996	0.993
1400	0.998	0.997
1200	0.999	0.998
1060	0.999	0.998
1000	0.998	0.997
950	0.997	0.995
900	0.997	0.994
850	0.997	0.995
800	0.997	0.994
700	0.997	0.994
650	0.997	0.994
600	0.997	0.994
550	0.997	0.994
500	0.996	0.993
480	0.996	0.992
460	0.995	0.991
440	0.995	0.990
420	0.995	0.990
400	0.995	0.990
390	0.994	0.988
380	0.991	0.983
370	0.991	0.982
360	0.988	0.976
350	0.981	0.962
340	0.962	0.925
330	0.910	0.828
320	0.750	0.560
310	0.350	0.120
300		
290		
280		

机械性质 Mechanical Properties

H_K (10^7Pa)	342
F_A	83
E (10^7Pa)	6112
G (10^7Pa)	2530
μ	0.208
B (10^{-12}/Pa)	

其他性质 Other Properties

ρ (g/cm^3)	2.94

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20						
-20～0						
0～20						
20～40						
40～60						
60～80						
80～100						
100～120						
120～140						

H-QF3	575415	n_d = 1.575010	υ_d = 41.50	$n_F - n_C$ = 0.013854
		n_e = 1.578295	υ_e = 41.22	$n_{F'} - n_{C'}$ = 0.014030

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	1.541994
$n_{1970.09}$	1970.09	1.547352
$n_{1529.58}$	1529.58	1.553201
$n_{1060.0}$	1060.0	1.559726
n_t	1013.98	1.560523
n_s	852.11	1.563950
n_r	706.52	1.568624
n_C	656.27	1.570910
$n_{C'}$	643.85	1.571556
n_{He-Ne}	632.8	1.572161
n_D	589.29	1.574889
n_d	587.56	1.575010
n_e	546.07	1.578295
n_F	486.13	1.584764
$n_{F'}$	479.99	1.585586
n_g	435.83	1.592765
n_h	404.66	1.599698
n_i	365.01	1.612269
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

K_1	1.31974395E+00
L_1	9.62233830E-03
K_2	1.06724103E-01
L_2	5.34250071E-02
K_3	1.12240441E+00
L_3	1.21814727E+02

折射率温度系数常数 Constants of dn/dt

D_0	-1.50E-06
D_1	2.15E-08
D_2	-2.26E-10
E_0	7.06E-07
E_1	3.09E-10
λ_{TK}(μm)	0.246

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2474	$P'_{s,t}$	0.2443
$P_{C,s}$	0.5024	$P'_{C',s}$	0.5421
$P_{d,C}$	0.2959	$P'_{d,C'}$	0.2462
$P_{e,d}$	0.2371	$P'_{e,d}$	0.2341
$P_{g,F}$	0.5775	$P'_{g,F'}$	0.5117
$P_{i,h}$	0.9074	$P'_{i,h}$	0.8960

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	0.0079	$\Delta P_{C,s}$	0.0025
$\Delta P_{F,e}$	0.0000	$\Delta P_{g,F}$	0.0025

着色度 Color Code

λ_{80}/λ_5	380/350
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	541
T_s (℃)	595
$T_{10^{14.5}}$ (℃)	488
$T_{10^{13}}$ (℃)	527
$T_{10^{7.6}}$(℃)	675
$\alpha_{-30/70℃}$(10^{-7}/K)	90
$\alpha_{100/300℃}$(10^{-7}/K)	103
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	1
CR	2
RC(S)	1
RA(S)	1

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.948	0.899
2200	0.957	0.916
2000	0.982	0.964
1800	0.991	0.983
1600	0.998	0.997
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.998	0.997
650	0.997	0.995
600	0.997	0.995
550	0.997	0.995
500	0.995	0.991
480	0.994	0.989
460	0.993	0.987
440	0.991	0.983
420	0.988	0.977
400	0.974	0.949
390	0.952	0.907
380	0.903	0.816
370	0.790	0.620
360	0.510	0.260
350	0.140	0.020
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties

H_K (10^7Pa)	546
F_A	100
E (10^7Pa)	7551
G (10^7Pa)	3086
μ	0.223
B (10^{-12}/Pa)	2.71

其他性质 Other Properties

ρ (g/cm^3)	2.60

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	-0.2	0.2	0.3	0.6	1.1	1.6
-20～0	0.6	1.3	1.7	2.0	2.3	3.1
0～20	0.9	1.5	1.8	2.1	2.6	3.3
20～40	0.9	1.7	1.9	2.1	2.8	3.4
40～60	1.2	1.7	2.1	2.1	2.8	3.4
60～80	1.3	1.7	2.1	2.2	3.0	3.7
80～100						
100～120						
120～140						

CDGM

QF3	575413	n_d = 1.57502	υ_d = 41.31	$n_F - n_C$ = 0.013920
		n_e = 1.57833	υ_e = 41.03	$n_{F'} - n_{C'}$ = 0.014097

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	
n_s	852.11	
n_r	706.52	1.56860
n_C	656.27	1.57090
$n_{C'}$	643.85	1.57155
n_{He-Ne}	632.8	1.57216
n_D	589.29	1.57490
n_d	587.56	1.57502
n_e	546.07	1.57833
n_F	486.13	1.58482
$n_{F'}$	479.99	1.58564
n_g	435.83	1.59281
n_h	404.66	1.59968
n_i	365.01	1.61197
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	2.4245509E+00
A_1	-7.9714057E-03
A_2	1.9149892E-02
A_3	3.5505098E-04
A_4	1.3941882E-05
A_5	1.7057720E-06

折射率温度系数常数 Constants of dn/dt	
D_0	
D_1	
D_2	
E_0	
E_1	
λ_{TK}(μm)	

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$		$P'_{s,t}$	
$P_{C,s}$		$P'_{C',s}$	
$P_{d,C}$	0.2965	$P'_{d,C'}$	0.2465
$P_{e,d}$	0.2374	$P'_{e,d}$	0.2344
$P_{g,F}$	0.5743	$P'_{g,F'}$	0.5083
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$		$\Delta P_{C,s}$	
$\Delta P_{F,e}$	-0.0009	$\Delta P_{g,F}$	-0.0010

着色度 Color Code	
λ_{80}/λ_5	340/310
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	420
T_s (℃)	470
$T_{10}^{14.5}$ (℃)	
T_{10}^{13} (℃)	
$T_{10}^{7.6}$(℃)	
$\alpha_{-30/70℃}$(10^{-7}/K)	93
$\alpha_{100/300℃}$(10^{-7}/K)	114
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	1
CR	
RC(S)	3
RA(S)	1

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.870	0.750
2200	0.941	0.885
2000	0.970	0.941
1800	0.985	0.970
1600	0.996	0.992
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.999
950	0.999	0.999
900	0.999	0.999
850	0.999	0.999
800	0.999	0.999
700	0.999	0.999
650	0.999	0.999
600	0.999	0.999
550	0.999	0.999
500	0.999	0.999
480	0.999	0.999
460	0.999	0.999
440	0.999	0.999
420	0.999	0.999
400	0.998	0.997
390	0.998	0.996
380	0.996	0.992
370	0.994	0.989
360	0.989	0.979
350	0.976	0.952
340	0.940	0.870
330	0.810	0.650
320	0.450	0.210
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	410
F_A	
E (10^7Pa)	5654
G (10^7Pa)	2344
μ	0.206
B (10^{-12}/Pa)	

其他性质 Other Properties	
ρ (g/cm^3)	3.18

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20						
-20～0						
0～20						
20～40						
40～60						
60～80						
80～100						
100～120						
120～140						

CDGM

QF5	582420	n_d = 1.58215	υ_d = 42.03	$n_F - n_C$ = 0.013852
		n_e = 1.58544	υ_e = 41.77	$n_{F'} - n_{C'}$ = 0.014017

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	
n_s	852.11	
n_r	706.52	1.57574
n_C	656.27	1.57804
$n_{C'}$	643.85	1.57869
n_{He-Ne}	632.8	1.57929
n_D	589.29	1.58203
n_d	587.56	1.58215
n_e	546.07	1.58544
n_F	486.13	1.59189
$n_{F'}$	479.99	1.59271
n_g	435.83	1.59982
n_h	404.66	1.60664
n_i	365.01	1.61878
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	2.4440594E+00
A_1	-6.7974631E-03
A_2	2.1425387E-02
A_3	-3.8544649E-04
A_4	1.2195244E-04
A_5	-4.2162236E-06

折射率温度系数常数 Constants of dn/dt	
D_0	
D_1	
D_2	
E_0	
E_1	
λ_{TK}(μm)	

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$		$P'_{s,t}$	
$P_{C,s}$		$P'_{C',s}$	
$P_{d,C}$	0.2968	$P'_{d,C'}$	0.2468
$P_{e,d}$	0.2374	$P'_{e,d}$	0.2346
$P_{g,F}$	0.5727	$P'_{g,F'}$	0.5077
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$		$\Delta P_{C,s}$	
$\Delta P_{F,e}$	-0.0010	$\Delta P_{g,F}$	-0.0014

着色度 Color Code	
λ_{80}/λ_5	350/320
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	455
T_s (℃)	526
$T_{10}^{14.5}$ (℃)	404
T_{10}^{13} (℃)	446
$T_{10}^{7.6}$(℃)	
$\alpha_{-30/70℃}$(10^{-7}/K)	83
$\alpha_{100/300℃}$(10^{-7}/K)	101
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	1
CR	
RC(S)	2
RA(S)	1

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.890	0.800
2200	0.920	0.846
2000	0.963	0.927
1800	0.984	0.968
1600	0.998	0.997
1400	0.998	0.997
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.998	0.998
650	0.998	0.996
600	0.998	0.996
550	0.998	0.996
500	0.997	0.995
480	0.997	0.994
460	0.996	0.993
440	0.996	0.992
420	0.995	0.991
400	0.995	0.990
390	0.993	0.987
380	0.990	0.981
370	0.988	0.977
360	0.981	0.962
350	0.964	0.929
340	0.913	0.834
330	0.750	0.570
320	0.370	0.140
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	416
F_A	89
E (10^7Pa)	6162
G (10^7Pa)	2521
μ	0.222
B (10^{-12}/Pa)	

其他性质 Other Properties	
ρ (g/cm^3)	3.22

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20						
-20～0						
0～20						
20～40						
40～60						
60～80						
80～100						
100～120						
120～140						

CDGM

H-QF6A	532488	n_d = 1.53172	υ_d = 48.84	$n_F - n_C$ = 0.010887
		n_e = 1.53431	υ_e = 48.53	$n_{F'} - n_{C'}$ = 0.011010

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.51993
n_s	852.11	1.52281
n_r	706.52	1.52663
n_C	656.27	1.52847
$n_{C'}$	643.85	1.52898
n_{He-Ne}	632.8	1.52946
n_D	589.29	1.53162
n_d	587.56	1.53172
n_e	546.07	1.53431
n_F	486.13	1.53935
$n_{F'}$	479.99	1.53999
n_g	435.83	1.54552
n_h	404.66	1.55081
n_i	365.01	1.56027
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

A_0	2.3045832E+00
A_1	-8.6522698E-03
A_2	1.4742431E-02
A_3	1.4691681E-04
A_4	2.4957757E-05
A_5	4.7963717E-07

折射率温度系数常数 Constants of dn/dt

D_0	-5.28E-06
D_1	2.18E-08
D_2	-9.29E-11
E_0	4.95E-07
E_1	4.67E-10
λ_{TK}(μm)	0.262

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2645	$P'_{s,t}$	0.2616
$P_{C,s}$	0.5199	$P'_{C',s}$	0.5604
$P_{d,C}$	0.2985	$P'_{d,C'}$	0.2489
$P_{e,d}$	0.2379	$P'_{e,d}$	0.2352
$P_{g,F}$	0.5666	$P'_{g,F'}$	0.5022
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	0.0080	$\Delta P_{C,s}$	0.0027
$\Delta P_{F,e}$	0.0000	$\Delta P_{g,F}$	0.0041

着色度 Color Code

λ_{80}/λ_5	360/340
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	513
T_s (℃)	582
$T_{10^{14.5}}$ (℃)	458
$T_{10^{13}}$ (℃)	501
$T_{10^{7.6}}$(℃)	677
$\alpha_{-30/70℃}$(10^{-7}/K)	86
$\alpha_{100/300℃}$(10^{-7}/K)	95
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	1
CR	1
RC(S)	1
RA(S)	1

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.942	0.888
2200	0.945	0.893
2000	0.986	0.973
1800	0.990	0.981
1600	0.994	0.989
1400	0.993	0.986
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.997	0.995
700	0.997	0.994
650	0.996	0.993
600	0.997	0.995
550	0.998	0.996
500	0.997	0.994
480	0.997	0.994
460	0.997	0.994
440	0.995	0.991
420	0.995	0.991
400	0.995	0.990
390	0.991	0.983
380	0.986	0.972
370	0.970	0.941
360	0.909	0.826
350	0.703	0.494
340	0.249	0.062
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties

H_K (10^7Pa)	521
F_A	94
E (10^7Pa)	6519
G (10^7Pa)	2646
μ	0.232
B (10^{-12}/Pa)	2.94

其他性质 Other Properties

ρ (g/cm^3)	2.52

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	-1.2	-1.0	-0.7	-0.3	-0.4	0.3
-20～0	-1.1	-0.8	-0.5	-0.3	0.2	0.6
0～20	-0.7	-0.5	-0.3	-0.1	0.2	0.7
20～40	-0.6	-0.3	0.0	0.2	0.7	1.0
40～60	-0.4	0.1	0.4	0.5	0.8	1.3
60～80	-0.5	0.0	0.0	0.1	0.8	1.4
80～100						
100～120						
120～140						

QF6	532488	n_d = 1.53172	υ_d = 48.76	$n_F - n_C$ = 0.010905
		n_e = 1.53431	υ_e = 48.48	$n_{F'} - n_{C'}$ = 0.011022

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	
n_s	852.11	
n_r	706.52	1.52661
n_C	656.27	1.52845
$n_{C'}$	643.85	1.52897
n_{He-Ne}	632.8	1.52945
n_D	589.29	1.53162
n_d	587.56	1.53172
n_e	546.07	1.53431
n_F	486.13	1.53935
$n_{F'}$	479.99	1.53999
n_g	435.83	1.54546
n_h	404.66	1.55064
n_i	365.01	1.55972
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	2.3044884E+00
A_1	-8.3782321E-03
A_2	1.4424342E-02
A_3	3.3374311E-04
A_4	-4.4657456E-06
A_5	1.3349929E-06

折射率温度系数常数 Constants of dn/dt	
D_0	
D_1	
D_2	
E_0	
E_1	
λ_{TK}(μm)	

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$		$P'_{s,t}$	
$P_{C,s}$		$P'_{C',s}$	
$P_{d,C}$	0.2999	$P'_{d,C'}$	0.2498
$P_{e,d}$	0.2378	$P'_{e,d}$	0.2353
$P_{g,F}$	0.5603	$P'_{g,F'}$	0.4968
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$		$\Delta P_{C,s}$	
$\Delta P_{F,e}$	-0.0008	$\Delta P_{g,F}$	-0.0024

着色度 Color Code	
λ_{80}/λ_5	330/300
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	436
T_s (℃)	504
$T_{10}^{14.5}$ (℃)	384
T_{10}^{13} (℃)	427
$T_{10}^{7.6}$(℃)	
$\alpha_{-30/70℃}$(10^{-7}/K)	82
$\alpha_{100/300℃}$(10^{-7}/K)	98
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	2
D_A	1
CR	
RC(S)	3
RA(S)	1

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.870	0.750
2200	0.900	0.810
2000	0.950	0.902
1800	0.979	0.958
1600	0.996	0.993
1400	0.997	0.995
1200	0.998	0.996
1060	0.999	0.998
1000	0.998	0.996
950	0.998	0.997
900	0.998	0.996
850	0.997	0.995
800	0.998	0.997
700	0.998	0.996
650	0.997	0.995
600	0.997	0.995
550	0.997	0.994
500	0.996	0.993
480	0.996	0.992
460	0.995	0.991
440	0.995	0.990
420	0.995	0.990
400	0.995	0.990
390	0.994	0.988
380	0.992	0.985
370	0.992	0.985
360	0.989	0.979
350	0.984	0.968
340	0.969	0.938
330	0.927	0.860
320	0.810	0.650
310	0.480	0.230
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	400
F_A	82
E (10^7Pa)	6237
G (10^7Pa)	2576
μ	0.210
B (10^{-12}/Pa)	

其他性质 Other Properties	
ρ (g/cm^3)	2.78

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20						
-20～0						
0～20						
20～40						
40～60						
60～80						
80～100						
100～120						
120～140						

CDGM

H-QF8	541472	n_d = 1.54072	υ_d = 47.23	$n_F - n_C$ = 0.011449
		n_e = 1.54344	υ_e = 46.94	$n_{F'} - n_{C'}$ = 0.011577

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.52840
n_s	852.11	1.53137
n_r	706.52	1.53537
n_C	656.27	1.53730
$n_{C'}$	643.85	1.53784
n_{He-Ne}	632.8	1.53835
n_D	589.29	1.54062
n_d	587.56	1.54072
n_e	546.07	1.54344
n_F	486.13	1.54875
$n_{F'}$	479.99	1.54942
n_g	435.83	1.55525
n_h	404.66	1.56081
n_i	365.01	1.57067
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

A_0	2.3274942E+00
A_1	-7.6745860E-03
A_2	1.7076264E-02
A_3	-3.0635807E-04
A_4	9.6037531E-05
A_5	-3.4643788E-06

折射率温度系数常数 Constants of dn/dt

D_0	-2.28E-06
D_1	1.48E-08
D_2	-8.66E-11
E_0	5.08E-07
E_1	1.15E-10
λ_{TK}(μm)	0.282

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2594	$P'_{s,t}$	0.2565
$P_{C,s}$	0.5179	$P'_{C',s}$	0.5589
$P_{d,C}$	0.2987	$P'_{d,C'}$	0.2488
$P_{e,d}$	0.2376	$P'_{e,d}$	0.2349
$P_{g,F}$	0.5678	$P'_{g,F'}$	0.5037
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	0.0086	$\Delta P_{C,s}$	0.0046
$\Delta P_{F,e}$	0.0000	$\Delta P_{g,F}$	0.0025

着色度 Color Code

λ_{80}/λ_5	370/340
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	460
T_s (℃)	531
$T_{10^{14.5}}$ (℃)	415
$T_{10^{13}}$ (℃)	459
$T_{10^{7.6}}$(℃)	633
$\alpha_{-30/70℃}$(10^{-7}/K)	96
$\alpha_{100/300℃}$(10^{-7}/K)	113
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	3
D_A	2
CR	2
RC(S)	3
RA(S)	1

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.880	0.780
2200	0.918	0.842
2000	0.959	0.920
1800	0.983	0.967
1600	0.998	0.996
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.998	0.997
650	0.998	0.996
600	0.998	0.996
550	0.998	0.996
500	0.997	0.994
480	0.996	0.992
460	0.995	0.991
440	0.995	0.990
420	0.993	0.987
400	0.987	0.974
390	0.977	0.954
380	0.954	0.911
370	0.907	0.823
360	0.790	0.620
350	0.530	0.280
340	0.140	0.020
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties

H_K (10^7Pa)	487
F_A	84
E (10^7Pa)	6950
G (10^7Pa)	2829
μ	0.228
B (10^{-12}/Pa)	2.61

其他性质 Other Properties

ρ (g/cm^3)	2.54

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	0.2	0.7	0.9	1.2	1.7	1.8
-20～0	0.3	1.0	1.2	1.5	2.0	2.4
0～20	0.7	1.0	1.2	1.3	1.9	2.4
20～40	0.7	0.9	1.2	1.5	1.9	2.5
40～60	0.8	1.0	1.3	1.4	1.9	2.7
60～80	0.7	1.0	1.4	1.5	2.0	2.7
80～100						
100～120						
120～140						

QF8	541472	n_d = 1.54072	υ_d = 47.20	$n_F - n_C$ = 0.011457
		n_e = 1.54344	υ_e = 46.92	$n_{F'} - n_{C'}$ = 0.011583

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	
n_s	852.11	
n_r	706.52	1.53536
n_C	656.27	1.53729
$n_{C'}$	643.85	1.53783
n_{He-Ne}	632.8	1.53834
n_D	589.29	1.54062
n_d	587.56	1.54072
n_e	546.07	1.54344
n_F	486.13	1.54875
$n_{F'}$	479.99	1.54941
n_g	435.83	1.55519
n_h	404.66	1.56068
n_i	365.01	1.57033
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

A_0	2.3287431E+00
A_1	-7.8679800E-03
A_2	1.5763854E-02
A_3	1.9794235E-04
A_4	1.8002892E-05
A_5	3.6533474E-07

折射率温度系数常数 Constants of dn/dt

D_0	
D_1	
D_2	
E_0	
E_1	
λ_{TK}(μm)	

相对部分色散 Relative Partial Dispersions

$P_{s,t}$		$P'_{s,t}$	
$P_{C,s}$		$P'_{C',s}$	
$P_{d,C}$	0.2994	$P'_{d,C'}$	0.2495
$P_{e,d}$	0.2374	$P'_{e,d}$	0.2348
$P_{g,F}$	0.5621	$P'_{g,F'}$	0.4990
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$		$\Delta P_{C,s}$	
$\Delta P_{F,e}$	-0.0004	$\Delta P_{g,F}$	-0.0032

着色度 Color Code

λ_{80}/λ_5	330/310
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	440
T_s (℃)	502
$T_{10}^{14.5}$ (℃)	383
T_{10}^{13} (℃)	426
$T_{10}^{7.6}$(℃)	
$\alpha_{-30/70℃}$(10^{-7}/K)	85
$\alpha_{100/300℃}$(10^{-7}/K)	98
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	2
D_A	1
CR	
RC(S)	3
RA(S)	1

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.870	0.760
2200	0.909	0.827
2000	0.955	0.912
1800	0.983	0.966
1600	0.999	0.998
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.999	0.998
650	0.998	0.997
600	0.998	0.997
550	0.998	0.997
500	0.998	0.997
480	0.998	0.996
460	0.997	0.995
440	0.997	0.995
420	0.997	0.995
400	0.997	0.995
390	0.996	0.993
380	0.994	0.989
370	0.994	0.988
360	0.991	0.983
350	0.984	0.968
340	0.964	0.930
330	0.912	0.832
320	0.760	0.580
310	0.400	0.160
300		
290		
280		

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20						
-20～0						
0～20						
20～40						
40～60						
60～80						
80～100						
100～120						
120～140						

机械性质 Mechanical Properties

H_K (10^7Pa)	397
F_A	83
E (10^7Pa)	6175
G (10^7Pa)	2551
μ	0.210
B (10^{-12}/Pa)	

其他性质 Other Properties

ρ (g/cm^3)	2.86

备注 Remarks

CDGM

H-QF14	596392	n_d = 1.595510	υ_d = 39.22	$n_F - n_C$ = 0.015183
		n_e = 1.599107	υ_e = 38.95	$n_{F'} - n_{C'}$ = 0.015382

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	1.560052
$n_{1970.09}$	1970.09	1.565720
$n_{1529.58}$	1529.58	1.571921
$n_{1060.0}$	1060.0	1.578897
n_t	1013.98	1.579755
n_s	852.11	1.583459
n_r	706.52	1.588538
n_C	656.27	1.591030
$n_{C'}$	643.85	1.591735
n_{He-Ne}	632.8	1.592396
n_D	589.29	1.595377
n_d	587.56	1.595510
n_e	546.07	1.599107
n_F	486.13	1.606213
$n_{F'}$	479.99	1.607117
n_g	435.83	1.615035
n_h	404.66	1.622712
n_i	365.01	1.636706
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
K_1	1.17413204E+00
L_1	1.19558629E+02
K_2	1.36038248E+00
L_2	9.92935549E-03
K_3	1.25239591E-01
L_3	5.38484281E-02

折射率温度系数常数 Constants of dn/dt	
D_0	2.81E-07
D_1	1.63E-08
D_2	-1.07E-11
E_0	6.25E-07
E_1	4.08E-10
λ_{TK}(μm)	0.282

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2440	$P'_{s,t}$	0.2408
$P_{C,s}$	0.4986	$P'_{C',s}$	0.5380
$P_{d,C}$	0.2951	$P'_{d,C'}$	0.2454
$P_{e,d}$	0.2369	$P'_{e,d}$	0.2338
$P_{g,F}$	0.5810	$P'_{g,F'}$	0.5148
$P_{i,h}$	0.9217	$P'_{i,h}$	0.9098

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0116	$\Delta P_{C,s}$	0.0042
$\Delta P_{F,e}$	-0.0002	$\Delta P_{g,F}$	0.0021

着色度 Color Code	
λ_{80}/λ_5	380/350
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	594
T_s (℃)	641
$T_{10^{14.5}}$ (℃)	539
$T_{10^{13}}$ (℃)	575
$T_{10^{7.6}}$(℃)	721
$\alpha_{-30/70℃}$(10^{-7}/K)	78
$\alpha_{100/300℃}$(10^{-7}/K)	92
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	3
CR	1
RC(S)	2
RA(S)	1

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.927	0.860
2200	0.938	0.880
2000	0.978	0.954
1800	0.989	0.978
1600	0.998	0.997
1400	0.997	0.995
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.998	0.997
800	0.998	0.997
700	0.998	0.996
650	0.997	0.994
600	0.997	0.995
550	0.997	0.995
500	0.995	0.991
480	0.994	0.988
460	0.992	0.984
440	0.990	0.980
420	0.985	0.970
400	0.966	0.933
390	0.938	0.880
380	0.870	0.760
370	0.710	0.510
360	0.370	0.140
350		
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	548
F_A	95
E (10^7Pa)	7852
G (10^7Pa)	3206
μ	0.225
B (10^{-12}/Pa)	2.77

其他性质 Other Properties	
ρ (g/cm^3)	2.62

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	1.6	2.3	2.7	2.8	3.3	4.1
-20～0	1.7	2.4	2.7	2.8	3.5	4.2
0～20	1.9	2.5	2.7	2.9	3.6	4.4
20～40	2.0	2.5	2.9	3.0	3.8	4.5
40～60	2.2	2.7	3.0	3.2	4.0	4.8
60～80	2.3	2.9	3.2	3.5	4.2	5.0
80～100						
100～120						
120～140						

CDGM

H-QF50	581409	n_d = 1.58144	υ_d = 40.89	$n_F - n_C$ = 0.014220
		n_e = 1.58481	υ_e = 40.61	$n_{F'} - n_{C'}$ = 0.014400

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.56657
n_s	852.11	1.57006
n_r	706.52	1.57488
n_C	656.27	1.57722
$n_{C'}$	643.85	1.57789
n_{He-Ne}	632.8	1.57852
n_D	589.29	1.58132
n_d	587.56	1.58144
n_e	546.07	1.58481
n_F	486.13	1.59145
$n_{F'}$	479.99	1.59228
n_g	435.83	1.59962
n_h	404.66	1.60671
n_i	365.01	1.61953
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	2.4428684E+00
A_1	-8.4138187E-03
A_2	2.0344127E-02
A_3	9.7583890E-05
A_4	4.9870249E-05
A_5	5.7917926E-07

折射率温度系数常数 Constants of dn/dt	
D_0	4.05E-07
D_1	2.23E-09
D_2	5.39E-11
E_0	5.36E-07
E_1	1.83E-09
λ_{TK}(μm)	0.288

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2454	$P'_{s,t}$	0.2424
$P_{C,s}$	0.5035	$P'_{C',s}$	0.5438
$P_{d,C}$	0.2968	$P'_{d,C'}$	0.2465
$P_{e,d}$	0.2370	$P'_{e,d}$	0.2340
$P_{g,F}$	0.5745	$P'_{g,F'}$	0.5097
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0100	$\Delta P_{C,s}$	0.0051
$\Delta P_{F,e}$	-0.0003	$\Delta P_{g,F}$	-0.0015

着色度 Color Code	
λ_{80}/λ_5	380/350
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	573
T_s (℃)	626
$T_{10^{14.5}}$ (℃)	511
$T_{10^{13}}$ (℃)	551
$T_{10^{7.6}}$(℃)	720
$\alpha_{-30/70℃}$(10^{-7}/K)	77
$\alpha_{100/300℃}$(10^{-7}/K)	99
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	2
D_A	1
CR	
RC(S)	2
RA(S)	1

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.920	0.846
2200	0.935	0.874
2000	0.972	0.944
1800	0.987	0.974
1600	0.996	0.992
1400	0.997	0.995
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.998	0.997
650	0.997	0.995
600	0.997	0.994
550	0.997	0.994
500	0.994	0.989
480	0.993	0.986
460	0.991	0.983
440	0.990	0.980
420	0.987	0.974
400	0.975	0.950
390	0.954	0.911
380	0.794	0.630
370	0.510	0.260
360	0.141	0.020
350		
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	482
F_A	91
E (10^7Pa)	7673
G (10^7Pa)	3132
μ	0.255
B (10^{-12}/Pa)	

其他性质 Other Properties	
ρ (g/cm^3)	2.60

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	2.5	2.9	3.0	3.4	3.8	4.3
-20～0	2.2	2.6	2.7	3.1	3.5	4.1
0～20	2.1	2.5	2.6	2.7	3.5	3.9
20～40	1.8	2.5	2.7	2.9	3.5	4.3
40～60	1.8	2.5	2.7	2.9	3.6	4.4
60～80	1.6	2.5	2.9	3.1	3.7	5.0
80～100						
100～120						
120～140						

H-QF50A	581408	n_d = 1.58144	υ_d = 40.75	$n_F - n_C$ = 0.014270
		n_e = 1.58482	υ_e = 40.47	$n_{F'} - n_{C'}$ = 0.014450

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.56652
n_s	852.11	1.57004
n_r	706.52	1.57486
n_C	656.27	1.57722
$n_{C'}$	643.85	1.57788
n_{He-Ne}	632.8	1.57850
n_D	589.29	1.58131
n_d	587.56	1.58144
n_e	546.07	1.58482
n_F	486.13	1.59149
$n_{F'}$	479.99	1.59233
n_g	435.83	1.59974
n_h	404.66	1.60689
n_i	365.01	1.61987
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

A_0	2.4440497E+00
A_1	-9.1867022E-03
A_2	1.9625429E-02
A_3	2.7735608E-04
A_4	3.3039776E-05
A_5	1.3369526E-06

折射率温度系数常数 Constants of dn/dt

D_0	-1.15E-06
D_1	1.62E-08
D_2	-5.36E-11
E_0	7.72E-07
E_1	8.65E-10
λ_{TK}(μm)	0.235

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2467	$P'_{s,t}$	0.2436
$P_{C,s}$	0.5032	$P'_{C',s}$	0.5426
$P_{d,C}$	0.2957	$P'_{d,C'}$	0.2464
$P_{e,d}$	0.2369	$P'_{e,d}$	0.2339
$P_{g,F}$	0.5781	$P'_{g,F'}$	0.5128
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	0.0116	$\Delta P_{C,s}$	0.0051
$\Delta P_{F,e}$	0.0001	$\Delta P_{g,F}$	0.0018

着色度 Color Code

λ_{80}/λ_5	380/350
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	545
T_s (℃)	595
$T_{10^{14.5}}$ (℃)	494
$T_{10^{13}}$ (℃)	530
$T_{10^{7.6}}$(℃)	681
$\alpha_{-30/70℃}$(10^{-7}/K)	85
$\alpha_{100/300℃}$(10^{-7}/K)	104
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	2
D_A	1
CR	1
RC(S)	3
RA(S)	1

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.910	0.828
2200	0.928	0.861
2000	0.968	0.937
1800	0.984	0.969
1600	0.995	0.991
1400	0.997	0.994
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.997
700	0.998	0.997
650	0.998	0.997
600	0.998	0.997
550	0.998	0.997
500	0.998	0.996
480	0.997	0.994
460	0.996	0.993
440	0.995	0.990
420	0.993	0.986
400	0.983	0.966
390	0.968	0.937
380	0.933	0.870
370	0.844	0.713
360	0.615	0.378
350	0.202	0.041
340		
330		
320		
310		
300		
290		
280		

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	1.0	1.6	1.8	2.1	2.6	3.2
-20～0	1.1	1.7	2.0	2.2	2.7	3.4
0～20	1.1	1.9	2.1	2.4	2.9	3.5
20～40	1.3	2.1	2.3	2.5	3.2	3.9
40～60	1.4	2.2	2.4	2.6	3.3	4.1
60～80	1.5	2.2	2.5	2.7	3.4	4.2
80～100						
100～120						
120～140						

机械性质 Mechanical Properties

H_K (10^7Pa)	492
F_A	108
E (10^7Pa)	7661
G (10^7Pa)	3121
μ	0.227
B (10^{-12}/Pa)	2.72

其他性质 Other Properties

ρ (g/cm^3)	2.61

备注 Remarks

CDGM

QF50	581409	n_d = 1.581440	υ_d = 40.89	$n_F - n_C$ = 0.014221
		n_e = 1.584815	υ_e = 40.61	$n_{F'} - n_{C'}$ = 0.014400

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	1.549465
$n_{1970.09}$	1970.09	1.554326
$n_{1529.58}$	1529.58	1.559692
$n_{1060.0}$	1060.0	1.565921
n_t	1013.98	1.566706
n_s	852.11	1.570133
n_r	706.52	1.574888
n_C	656.27	1.577230
$n_{C'}$	643.85	1.577892
n_{He-Ne}	632.8	1.578514
n_D	589.29	1.581315
n_d	587.56	1.581440
n_e	546.07	1.584815
n_F	486.13	1.591451
$n_{F'}$	479.99	1.592292
n_g	435.83	1.599617
n_h	404.66	1.606642
n_i	365.01	1.619212
$n_{313.18}$	313.18	1.647936
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
K_1	1.31145759E+00
L_1	9.88576985E-03
K_2	8.40047425E-01
L_2	1.02880258E+02
K_3	1.32407269E-01
L_3	4.77527930E-02

折射率温度系数常数 Constants of dn/dt	
D_0	-2.74E-06
D_1	1.64E-08
D_2	-5.12E-11
E_0	8.26E-07
E_1	4.87E-10
λ_{TK}(μm)	0.234

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2410	$P'_{s,t}$	0.2380
$P_{C,s}$	0.4991	$P'_{C',s}$	0.5388
$P_{d,C}$	0.2960	$P'_{d,C'}$	0.2464
$P_{e,d}$	0.2373	$P'_{e,d}$	0.2344
$P_{g,F}$	0.5742	$P'_{g,F'}$	0.5087
$P_{i,h}$	0.8839	$P'_{i,h}$	0.8729

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0011	$\Delta P_{C,s}$	0.0007
$\Delta P_{F,e}$	-0.0006	$\Delta P_{g,F}$	-0.0018

着色度 Color Code	
λ_{80}/λ_5	340/310
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	422
T_s (℃)	480
$T_{10}^{14.5}$ (℃)	366
T_{10}^{13} (℃)	406
$T_{10}^{7.6}$(℃)	584
$\alpha_{-30/70℃}$(10^{-7}/K)	90
$\alpha_{100/300℃}$(10^{-7}/K)	111
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	1
CR	2
RC(S)	3
RA(S)	1

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.880	0.770
2200	0.911	0.830
2000	0.955	0.912
1800	0.981	0.963
1600	0.997	0.995
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.998	0.997
800	0.998	0.996
700	0.998	0.996
650	0.997	0.995
600	0.997	0.995
550	0.997	0.995
500	0.997	0.994
480	0.996	0.993
460	0.996	0.993
440	0.996	0.992
420	0.995	0.991
400	0.995	0.991
390	0.994	0.988
380	0.992	0.984
370	0.990	0.981
360	0.986	0.972
350	0.975	0.950
340	0.944	0.892
330	0.850	0.720
320	0.570	0.320
310	0.120	0.020
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	407
F_A	89
E (10^7Pa)	5980
G (10^7Pa)	2444
μ	0.224
B (10^{-12}/Pa)	

其他性质 Other Properties	
ρ (g/cm^3)	3.23

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	0.1	0.8	1.0	1.3	2.0	2.6
-40～-20	0.2	0.9	1.1	1.4	2.1	2.7
-20～0	0.3	1.1	1.3	1.6	2.1	2.8
0～20	0.6	1.2	1.5	1.8	2.3	3.0
20～40	0.7	1.3	1.6	1.9	2.4	3.1
40～60	0.8	1.4	1.7	2.0	2.7	3.5
60～80	0.8	1.6	1.8	2.1	2.9	3.6
80～100	0.8	1.6	1.8	2.1	2.9	3.6
100～120	0.8	1.6	1.8	2.1	2.9	3.6
120～140	0.8	1.6	1.9	2.1	3.0	3.7

H-QF56	567428	n_d = 1.56732	υ_d = 42.81	$n_F - n_C$ = 0.013252
		n_e = 1.57046	υ_e = 42.54	$n_{F'} - n_{C'}$ = 0.013411

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.55345
n_s	852.11	1.55672
n_r	706.52	1.56120
n_C	656.27	1.56339
$n_{C'}$	643.85	1.56401
n_{He-Ne}	632.8	1.56459
n_D	589.29	1.56720
n_d	587.56	1.56732
n_e	546.07	1.57046
n_F	486.13	1.57665
$n_{F'}$	479.99	1.57743
n_g	435.83	1.58426
n_h	404.66	1.59084
n_i	365.01	1.60273
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

A_0	2.4044189E+00
A_1	-8.5762987E-03
A_2	1.7675457E-02
A_3	4.3820581E-04
A_4	-1.4219870E-06
A_5	2.7428791E-06

折射率温度系数常数 Constants of dn/dt

D_0	-4.86E-06
D_1	1.38E-08
D_2	-3.64E-11
E_0	7.51E-07
E_1	4.38E-11
λ_{TK}(μm)	0.236

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2468	$P'_{s,t}$	0.2438
$P_{C,s}$	0.5033	$P'_{C',s}$	0.5436
$P_{d,C}$	0.2966	$P'_{d,C'}$	0.2466
$P_{e,d}$	0.2369	$P'_{e,d}$	0.2340
$P_{g,F}$	0.5743	$P'_{g,F'}$	0.5089
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	0.0021	$\Delta P_{C,s}$	0.0004
$\Delta P_{F,e}$	0.0009	$\Delta P_{g,F}$	0.0015

着色度 Color Code

λ_{80}/λ_5	370/345
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	500
T_s (℃)	557
$T_{10^{14.5}}$ (℃)	444
$T_{10^{13}}$ (℃)	482
$T_{10^{7.6}}$(℃)	642
$\alpha_{-30/70℃}$(10^{-7}/K)	94
$\alpha_{100/300℃}$(10^{-7}/K)	111
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	1
CR	1
RC(S)	3
RA(S)	1

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.915	0.837
2200	0.935	0.875
2000	0.970	0.940
1800	0.985	0.970
1600	0.996	0.991
1400	0.997	0.995
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.997	0.994
700	0.995	0.990
650	0.995	0.990
600	0.995	0.990
550	0.995	0.990
500	0.994	0.988
480	0.993	0.986
460	0.992	0.984
440	0.990	0.980
420	0.989	0.979
400	0.984	0.969
390	0.977	0.954
380	0.961	0.924
370	0.917	0.840
360	0.771	0.594
350	0.383	0.147
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties

H_K (10^7Pa)	502
F_A	121
E (10^7Pa)	7375
G (10^7Pa)	2987
μ	0.235
B (10^{-12}/Pa)	2.53

其他性质 Other Properties

ρ (g/cm^3)	2.62

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	-0.5	0.1	0.3	0.4	1.0	1.5
-20～0	-0.5	0.1	0.4	0.5	1.2	1.8
0～20	-0.5	0.1	0.3	0.5	1.3	1.9
20～40	-0.4	0.2	0.3	0.7	1.3	1.9
40～60	-0.3	0.2	0.5	0.9	1.3	1.9
60～80	-0.3	0.2	0.6	0.9	1.3	1.9
80～100						
100～120						
120～140						

H-F1	603380	n_d = 1.603420	υ_d = 38.01	$n_F - n_C$ = 0.015875
		n_e = 1.607180	υ_e = 37.74	$n_{F'} - n_{C'}$ = 0.016089

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	1.567062
$n_{1970.09}$	1970.09	1.572775
$n_{1529.58}$	1529.58	1.579046
$n_{1060.0}$	1060.0	1.586167
n_t	1013.98	1.587050
n_s	852.11	1.590876
n_r	706.52	1.596151
n_C	656.27	1.598745
$n_{C'}$	643.85	1.599480
n_{He-Ne}	632.8	1.600170
n_D	589.29	1.603281
n_d	587.56	1.603420
n_e	546.07	1.607180
n_F	486.13	1.614620
$n_{F'}$	479.99	1.615569
n_g	435.83	1.623885
n_h	404.66	1.631970
n_i	365.01	1.646767
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
K_1	1.32375817E-01
L_1	5.45903225E-02
K_2	1.15564934E+00
L_2	1.16785740E+02
K_3	1.37547893E+00
L_3	1.01495335E-02

折射率温度系数常数 Constants of dn/dt	
D_0	2.42E-07
D_1	2.24E-08
D_2	-9.83E-11
E_0	6.69E-07
E_1	-2.21E-10
λ_{TK}(μm)	0.281

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2410	$P'_{s,t}$	0.2378
$P_{C,s}$	0.4957	$P'_{C',s}$	0.5348
$P_{d,C}$	0.2945	$P'_{d,C'}$	0.2449
$P_{e,d}$	0.2369	$P'_{e,d}$	0.2337
$P_{g,F}$	0.5836	$P'_{g,F'}$	0.5169
$P_{i,h}$	0.9321	$P'_{i,h}$	0.9197

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0113	$\Delta P_{C,s}$	0.0041
$\Delta P_{F,e}$	-0.0002	$\Delta P_{g,F}$	0.0027

着色度 Color Code	
λ_{80}/λ_5	385/355
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	592
T_s (℃)	640
$T_{10^{14.5}}$ (℃)	527
$T_{10^{13}}$ (℃)	565
$T_{10^{7.6}}$(℃)	715
$\alpha_{-30/70℃}$(10^{-7}/K)	79
$\alpha_{100/300℃}$(10^{-7}/K)	98
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	2
D_A	1
CR	1
RC(S)	2
RA(S)	1

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.934	0.873
2200	0.944	0.892
2000	0.976	0.953
1800	0.987	0.975
1600	0.997	0.994
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.998	0.996
950	0.997	0.995
900	0.997	0.995
850	0.998	0.996
800	0.996	0.992
700	0.994	0.988
650	0.992	0.985
600	0.993	0.987
550	0.993	0.987
500	0.990	0.980
480	0.988	0.976
460	0.986	0.972
440	0.983	0.967
420	0.980	0.961
400	0.963	0.928
390	0.934	0.873
380	0.870	0.750
370	0.700	0.490
360	0.340	0.120
350		
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	438
F_A	103
E (10^7Pa)	7847
G (10^7Pa)	3197
μ	0.227
B (10^{-12}/Pa)	

其他性质 Other Properties	
ρ (g/cm^3)	2.63

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	1.4	2.2	2.3	2.6	3.0	4.1
-20～0	1.5	2.4	2.6	2.9	3.4	3.9
0～20	2.0	2.3	2.6	2.9	3.9	4.8
20～40	2.0	2.6	3.0	3.1	4.0	4.8
40～60	2.0	2.7	3.0	3.1	4.0	4.8
60～80	2.0	2.9	3.0	3.1	4.0	4.7
80～100						
100～120						
120～140						

CDGM

F1	603380	n_d = 1.60342	υ_d = 38.01	$n_F - n_C$ = 0.015873
		n_e = 1.60718	υ_e = 37.75	$n_{F'} - n_{C'}$ = 0.016084

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	
n_s	852.11	
n_r	706.52	1.59615
n_C	656.27	1.59874
$n_{C'}$	643.85	1.59947
n_{He-Ne}	632.8	1.60016
n_D	589.29	1.60328
n_d	587.56	1.60342
n_e	546.07	1.60718
n_F	486.13	1.61461
$n_{F'}$	479.99	1.61556
n_g	435.83	1.62380
n_h	404.66	1.63174
n_i	365.01	1.64602
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	2.5059651E+00
A_1	-7.8686119E-03
A_2	2.1574214E-02
A_3	5.9867966E-04
A_4	-9.5194606E-07
A_5	2.9024858E-06

折射率温度系数常数 Constants of dn/dt	
D_0	
D_1	
D_2	
E_0	
E_1	
λ_{TK}(μm)	

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$		$P'_{s,t}$	
$P_{C,s}$		$P'_{C',s}$	
$P_{d,C}$	0.2947	$P'_{d,C'}$	0.2452
$P_{e,d}$	0.2372	$P'_{e,d}$	0.2341
$P_{g,F}$	0.5788	$P'_{g,F'}$	0.5125
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$		$\Delta P_{C,s}$	
$\Delta P_{F,e}$	-0.0006	$\Delta P_{g,F}$	-0.0022

着色度 Color Code	
λ_{80}/λ_5	350/320
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	420
T_s (℃)	460
$T_{10}^{14.5}$ (℃)	405
T_{10}^{13} (℃)	430
$T_{10}^{7.6}$(℃)	
$\alpha_{-30/70℃}$(10^{-7}/K)	92
$\alpha_{100/300℃}$(10^{-7}/K)	114
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	2
D_A	1
CR	3
RC(S)	3
RA(S)	1

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.927	0.860
2200	0.950	0.903
2000	0.980	0.960
1800	0.985	0.970
1600	0.990	0.980
1400	0.998	0.996
1200	0.998	0.996
1060	0.998	0.997
1000	0.998	0.997
950	0.999	0.998
900	0.999	0.999
850	0.999	0.999
800	0.999	0.999
700	0.999	0.999
650	0.999	0.999
600	0.999	0.999
550	0.999	0.999
500	0.999	0.999
480	0.999	0.999
460	0.999	0.999
440	0.998	0.997
420	0.998	0.996
400	0.998	0.996
390	0.995	0.990
380	0.992	0.985
370	0.989	0.979
360	0.979	0.958
350	0.950	0.900
340	0.870	0.750
330	0.640	0.400
320	0.230	0.050
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	445
F_A	85
E (10^7Pa)	5730
G (10^7Pa)	2340
μ	0.224
B (10^{-12}/Pa)	

其他性质 Other Properties	
ρ (g/cm^3)	3.43

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20						
-20～0						
0～20						
20～40						
40～60						
60～80						
80～100						
100～120						
120～140						

CDGM

H-F2	613370	n_d = 1.61293	υ_d = 37.00	$n_F - n_C$ = 0.016564
		n_e = 1.61685	υ_e = 36.73	$n_{F'} - n_{C'}$ = 0.016792

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.59590
n_s	852.11	1.59987
n_r	706.52	1.60536
n_C	656.27	1.60806
$n_{C'}$	643.85	1.60883
n_{He-Ne}	632.8	1.60954
n_D	589.29	1.61279
n_d	587.56	1.61293
n_e	546.07	1.61685
n_F	486.13	1.62463
$n_{F'}$	479.99	1.62562
n_g	435.83	1.63432
n_h	404.66	1.64283
n_i	365.01	1.65859
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	2.5360648E+00
A_1	-1.0592280E-02
A_2	2.1518011E-02
A_3	8.7655888E-04
A_4	-4.3936258E-05
A_5	7.5438308E-06

折射率温度系数常数 Constants of dn/dt	
D_0	5.89E-07
D_1	1.15E-08
D_2	-3.15E-11
E_0	6.95E-07
E_1	2.04E-09
λ_{TK}(μm)	0.271

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2397	$P'_{s,t}$	0.2364
$P_{C,s}$	0.4944	$P'_{C',s}$	0.5336
$P_{d,C}$	0.2938	$P'_{d,C'}$	0.2443
$P_{e,d}$	0.2368	$P'_{e,d}$	0.2336
$P_{g,F}$	0.5850	$P'_{g,F'}$	0.5181
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0135	$\Delta P_{C,s}$	0.0052
$\Delta P_{F,e}$	0.0000	$\Delta P_{g,F}$	0.0023

着色度 Color Code	
λ_{80}/λ_5	385/355
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	601
T_s (℃)	642
$T_{10}^{14.5}$ (℃)	542
T_{10}^{13} (℃)	579
$T_{10}^{7.6}$(℃)	717
$\alpha_{-30/70℃}$(10^{-7}/K)	78
$\alpha_{100/300℃}$(10^{-7}/K)	94
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	1
CR	1
RC(S)	1
RA(S)	1

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.948	0.899
2200	0.959	0.920
2000	0.986	0.972
1800	0.992	0.985
1600	0.999	0.998
1400	0.997	0.994
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.998	0.997
800	0.998	0.997
700	0.998	0.995
650	0.997	0.994
600	0.997	0.994
550	0.996	0.993
500	0.994	0.987
480	0.992	0.984
460	0.990	0.981
440	0.988	0.976
420	0.983	0.965
400	0.963	0.927
390	0.931	0.866
380	0.850	0.730
370	0.660	0.430
360	0.270	0.070
350		
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	563
F_A	105
E (10^7Pa)	8125
G (10^7Pa)	3337
μ	0.217
B (10^{-12}/Pa)	2.90

其他性质 Other Properties	
ρ (g/cm^3)	2.65

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	2.1	2.5	2.6	2.7	3.6	4.2
-20～0	2.1	2.5	2.8	3.1	3.5	4.4
0～20	1.9	2.9	3.1	3.2	3.9	4.5
20～40	2.0	3.0	3.3	3.4	4.1	5.4
40～60	2.2	3.0	3.3	3.5	4.4	5.5
60～80	2.4	3.3	3.5	3.6	4.9	5.6
80～100						
100～120						
120～140						

F2	613370	n_d = 1.61293	υ_d = 36.96	$n_F - n_C$ = 0.016582
		n_e = 1.61686	υ_e = 36.70	$n_{F'} - n_{C'}$ = 0.016806

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.59614
n_s	852.11	1.59995
n_r	706.52	1.60537
n_C	656.27	1.60805
$n_{C'}$	643.85	1.60882
n_{He-Ne}	632.8	1.60953
n_D	589.29	1.61278
n_d	587.56	1.61293
n_e	546.07	1.61686
n_F	486.13	1.62463
$n_{F'}$	479.99	1.62562
n_g	435.83	1.63427
n_h	404.66	1.64262
n_i	365.01	1.65768
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

A_0	2.5326598E+00
A_1	-7.7382535E-03
A_2	2.3173143E-02
A_3	4.0936286E-04
A_4	3.7804683E-05
A_5	1.0346435E-06

折射率温度系数常数 Constants of dn/dt

D_0	-3.84E-06
D_1	1.63E-08
D_2	-7.71E-11
E_0	9.44E-07
E_1	8.73E-10
λ_{TK}(μm)	0.251

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2298	$P'_{s,t}$	0.2267
$P_{C,s}$	0.4885	$P'_{C',s}$	0.5278
$P_{d,C}$	0.2942	$P'_{d,C'}$	0.2448
$P_{e,d}$	0.2370	$P'_{e,d}$	0.2339
$P_{g,F}$	0.5814	$P'_{g,F'}$	0.5147
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	-0.0022	$\Delta P_{C,s}$	-0.0006
$\Delta P_{F,e}$	-0.0006	$\Delta P_{g,F}$	-0.0014

着色度 Color Code

λ_{80}/λ_5	350/320
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	400
T_s (℃)	450
$T_{10}^{14.5}$ (℃)	410
T_{10}^{13} (℃)	435
$T_{10}^{7.6}$(℃)	
$\alpha_{-30/70℃}$(10^{-7}/K)	101
$\alpha_{100/300℃}$(10^{-7}/K)	121
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	2
D_A	1
CR	1
RC(S)	3
RA(S)	2

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.915	0.837
2200	0.940	0.884
2000	0.970	0.941
1800	0.982	0.964
1600	0.994	0.988
1400	0.998	0.997
1200	0.999	0.998
1060	0.999	0.999
1000	0.999	0.999
950	0.999	0.999
900	0.999	0.999
850	0.999	0.999
800	0.999	0.999
700	0.999	0.999
650	0.999	0.999
600	0.999	0.999
550	0.999	0.999
500	0.999	0.999
480	0.999	0.999
460	0.999	0.998
440	0.999	0.998
420	0.999	0.998
400	0.997	0.995
390	0.996	0.991
380	0.993	0.985
370	0.989	0.977
360	0.978	0.956
350	0.950	0.900
340	0.870	0.760
330	0.630	0.390
320	0.180	0.030
310		
300		
290		
280		

机械性质 Mechanical Properties

H_K (10^7Pa)	440
F_A	94
E (10^7Pa)	5740
G (10^7Pa)	2350
μ	0.221
B (10^{-12}/Pa)	2.53

其他性质 Other Properties

ρ (g/cm^3)	3.50

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	-0.6	0.6	0.8	1.1	1.6	2.5
-20～0	-0.1	0.6	0.8	1.2	2.2	2.8
0～20	-0.1	0.9	1.2	1.6	2.4	3.2
20～40	0.2	1.0	1.2	1.7	2.6	3.7
40～60	0.4	0.8	1.1	1.9	2.6	3.7
60～80	0.4	1.3	1.4	2.5	2.6	3.7
80～100						
100～120						
120～140						

H-F3	617367	n_d = 1.616590	υ_d = 36.65	$n_F - n_C$ = 0.016823
		n_e = 1.620571	υ_e = 36.38	$n_{F'} - n_{C'}$ = 0.017058

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	1.579001
$n_{1970.09}$	1970.09	1.584748
$n_{1529.58}$	1529.58	1.591117
$n_{1060.0}$	1060.0	1.598459
n_t	1013.98	1.599378
n_s	852.11	1.603375
n_r	706.52	1.608917
n_C	656.27	1.611652
$n_{C'}$	643.85	1.612427
n_{He-Ne}	632.8	1.613155
n_D	589.29	1.616443
n_d	587.56	1.616590
n_e	546.07	1.620571
n_F	486.13	1.628475
$n_{F'}$	479.99	1.629485
n_g	435.83	1.638361
n_h	404.66	1.647032
n_i	365.01	1.663023
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
K_1	1.40512926E+00
L_1	1.03407899E-02
K_2	1.40987722E-01
L_2	5.61355281E-02
K_3	1.52292764E+00
L_3	1.49776911E+02

折射率温度系数常数 Constants of dn/dt	
D_0	1.01E-07
D_1	1.60E-08
D_2	-4.83E-11
E_0	7.01E-07
E_1	7.11E-10
λ_{TK}(μm)	0.277

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2376	$P'_{s,t}$	0.2343
$P_{C,s}$	0.4920	$P'_{C',s}$	0.5307
$P_{d,C}$	0.2935	$P'_{d,C'}$	0.2440
$P_{e,d}$	0.2366	$P'_{e,d}$	0.2334
$P_{g,F}$	0.5876	$P'_{g,F'}$	0.5203
$P_{i,h}$	0.9505	$P'_{i,h}$	0.9374

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0107	$\Delta P_{C,s}$	0.0036
$\Delta P_{F,e}$	0.0003	$\Delta P_{g,F}$	0.0044

着色度 Color Code	
λ_{80}/λ_5	385/355
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	610
T_s (℃)	640
$T_{10^{14.5}}$ (℃)	532
$T_{10^{13}}$ (℃)	574
$T_{10^{7.6}}$(℃)	728
$\alpha_{-30/70℃}$(10^{-7}/K)	74
$\alpha_{100/300℃}$(10^{-7}/K)	95
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	2
D_A	1
CR	1
RC(S)	3
RA(S)	1

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.934	0.873
2200	0.944	0.892
2000	0.978	0.957
1800	0.988	0.976
1600	0.996	0.992
1400	0.996	0.991
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.999	0.998
650	0.999	0.997
600	0.998	0.996
550	0.997	0.995
500	0.996	0.992
480	0.996	0.992
460	0.995	0.991
440	0.993	0.987
420	0.992	0.984
400	0.984	0.969
390	0.969	0.939
380	0.925	0.855
370	0.788	0.621
360	0.430	0.185
350		
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	604
F_A	121
E (10^7Pa)	7980
G (10^7Pa)	3245
μ	0.230
B (10^{-12}/Pa)	

其他性质 Other Properties	
ρ (g/cm^3)	2.68

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	1.4	2.2	2.5	2.7	3.3	3.9
-40～-20	1.4	2.2	2.5	2.8	3.4	4.1
-20～0	1.5	2.3	2.6	2.8	3.4	4.4
0～20	1.9	2.6	2.8	3.1	3.9	4.6
20～40	2.1	2.7	3.1	3.4	4.1	5.1
40～60	2.1	2.8	3.1	3.4	4.2	5.1
60～80	2.1	2.8	3.1	3.5	4.2	5.1
80～100	2.1	2.8	3.1	3.5	4.3	5.5
100～120	2.1	3.0	3.3	3.6	4.6	5.6
120～140	2.2	3.1	3.6	3.8	4.7	5.9

CDGM

F3	617366	n_d = 1.61659	υ_d = 36.61	$n_F - n_C$ = 0.016840
		n_e = 1.62058	υ_e = 36.35	$n_{F'} - n_{C'}$ = 0.017071

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.59954
n_s	852.11	1.60341
n_r	706.52	1.60891
n_C	656.27	1.61164
$n_{C'}$	643.85	1.61242
n_{He-Ne}	632.8	1.61315
n_D	589.29	1.61644
n_d	587.56	1.61659
n_e	546.07	1.62058
n_F	486.13	1.62848
$n_{F'}$	479.99	1.62949
n_g	435.83	1.63826
n_h	404.66	1.64673
n_i	365.01	1.66202
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	2.5442823E+00
A_1	-8.3530761E-03
A_2	2.2823181E-02
A_3	6.7021492E-04
A_4	1.0429482E-06
A_5	3.0329738E-06

折射率温度系数常数 Constants of dn/dt	
D_0	3.64E-07
D_1	1.78E-08
D_2	-2.72E-11
E_0	9.68E-07
E_1	1.31E-09
λ_{TK}(μm)	0.235

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2298	$P'_{s,t}$	0.2267
$P_{C,s}$	0.4887	$P'_{C',s}$	0.5278
$P_{d,C}$	0.2938	$P'_{d,C'}$	0.2444
$P_{e,d}$	0.2370	$P'_{e,d}$	0.2338
$P_{g,F}$	0.5808	$P'_{g,F'}$	0.5137
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	-0.0002	$\Delta P_{C,s}$	0.0004
$\Delta P_{F,e}$	-0.0004	$\Delta P_{g,F}$	-0.0026

着色度 Color Code	
λ_{80}/λ_5	350/320
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	430
T_s (℃)	490
$T_{10^{14.5}}$ (℃)	379
$T_{10^{13}}$ (℃)	418
$T_{10^{7.6}}$(℃)	589
$\alpha_{-30/70℃}$(10^{-7}/K)	85
$\alpha_{100/300℃}$(10^{-7}/K)	100
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	2
D_A	1
CR	
RC(S)	3
RA(S)	1

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.915	0.837
2200	0.940	0.884
2000	0.970	0.941
1800	0.982	0.964
1600	0.994	0.988
1400	0.998	0.996
1200	0.998	0.996
1060	0.998	0.996
1000	0.998	0.996
950	0.998	0.996
900	0.998	0.996
850	0.998	0.996
800	0.998	0.996
700	0.999	0.998
650	0.999	0.998
600	0.999	0.998
550	0.999	0.998
500	0.999	0.998
480	0.998	0.996
460	0.998	0.996
440	0.997	0.994
420	0.996	0.992
400	0.994	0.989
390	0.989	0.979
380	0.982	0.965
370	0.977	0.955
360	0.962	0.925
350	0.929	0.863
340	0.850	0.720
330	0.630	0.400
320	0.220	0.050
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	430
F_A	89
E (10^7Pa)	5608
G (10^7Pa)	2307
μ	0.215
B (10^{-12}/Pa)	

其他性质 Other Properties	
ρ (g/cm^3)	3.57

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	1.3	2.3	2.9	3.2	4.1	4.7
-20～0	1.9	2.8	3.2	3.4	4.2	4.9
0～20	2.1	2.8	3.2	3.4	4.7	5.8
20～40	2.3	3.1	3.4	3.7	4.7	5.8
40～60	2.5	3.3	3.5	4.3	5.1	5.9
60～80	2.6	3.4	3.7	4.5	5.2	6.2
80～100						
100～120						
120～140						

CDGM

H-F4	620364	n_d = 1.62005	υ_d = 36.35	$n_F - n_C$ = 0.017060
		n_e = 1.62408	υ_e = 36.09	$n_{F'} - n_{C'}$ = 0.017291

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.60259
n_s	852.11	1.60667
n_r	706.52	1.61227
n_C	656.27	1.61504
$n_{C'}$	643.85	1.61582
n_{He-Ne}	632.8	1.61656
n_D	589.29	1.61990
n_d	587.56	1.62005
n_e	546.07	1.62408
n_F	486.13	1.63210
$n_{F'}$	479.99	1.63312
n_g	435.83	1.64210
n_h	404.66	1.65089
n_i	365.01	
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	2.5621638E+00
A_1	-1.3077536E-02
A_2	1.8108472E-02
A_3	2.3157306E-03
A_4	-2.6496140E-04
A_5	2.0745805E-05

折射率温度系数常数 Constants of dn/dt	
D_0	-6.54E-08
D_1	1.13E-08
D_2	2.48E-11
E_0	5.72E-07
E_1	4.48E-10
λ_{TK}(μm)	0.305

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2392	$P'_{s,t}$	0.2360
$P_{C,s}$	0.4906	$P'_{C',s}$	0.5292
$P_{d,C}$	0.2938	$P'_{d,C'}$	0.2443
$P_{e,d}$	0.2365	$P'_{e,d}$	0.2334
$P_{g,F}$	0.5862	$P'_{g,F'}$	0.5193
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0123	$\Delta P_{C,s}$	0.0030
$\Delta P_{F,e}$	0.0000	$\Delta P_{g,F}$	0.0024

着色度 Color Code	
λ_{80}/λ_5	390/355
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	584
T_s (℃)	630
$T_{10}^{14.5}$ (℃)	528
T_{10}^{13} (℃)	562
$T_{10}^{7.6}$(℃)	712
$\alpha_{-30/70℃}$(10^{-7}/K)	76
$\alpha_{100/300℃}$(10^{-7}/K)	90
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	2
D_A	1
CR	1
RC(S)	1
RA(S)	1

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.922	0.850
2200	0.936	0.876
2000	0.977	0.954
1800	0.986	0.973
1600	0.994	0.989
1400	0.992	0.985
1200	0.998	0.997
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.998	0.997
650	0.998	0.996
600	0.998	0.996
550	0.997	0.995
500	0.995	0.991
480	0.994	0.988
460	0.993	0.986
440	0.991	0.983
420	0.988	0.976
400	0.977	0.955
390	0.959	0.919
380	0.907	0.822
370	0.756	0.572
360	0.387	0.150
350		
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	607
F_A	128
E (10^7Pa)	8344
G (10^7Pa)	3393
μ	0.229
B (10^{-12}/Pa)	2.92

其他性质 Other Properties	
ρ (g/cm^3)	2.67

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	1.8	2.5	2.7	3.1	3.7	4.8
-20～0	1.8	2.6	2.7	2.9	3.4	4.6
0～20	1.7	2.4	2.7	2.7	3.4	4.5
20～40	1.9	2.4	2.7	2.9	4.0	4.6
40～60	1.8	2.4	2.7	2.9	4.0	4.7
60～80	1.9	2.7	2.9	3.4	4.0	5.3
80～100						
100～120						
120～140						

F4	620364	n_d = 1.62005	υ_d = 36.35	$n_F - n_C$ = 0.017060
		n_e = 1.62408	υ_e = 36.09	$n_{F'} - n_{C'}$ = 0.017291

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.60280
n_s	852.11	1.60672
n_r	706.52	1.61228
n_C	656.27	1.61504
$n_{C'}$	643.85	1.61582
n_{He-Ne}	632.8	1.61656
n_D	589.29	1.61990
n_d	587.56	1.62005
n_e	546.07	1.62408
n_F	486.13	1.63210
$n_{F'}$	479.99	1.63312
n_g	435.83	1.64205
n_h	404.66	1.65068
n_i	365.01	1.66629
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	2.5544667E+00
A_1	-8.4784780E-03
A_2	2.3283289E-02
A_3	5.8380948E-04
A_4	2.1963001E-05
A_5	1.9653771E-06

折射率温度系数常数 Constants of dn/dt	
D_0	-2.90E-06
D_1	2.24E-08
D_2	-2.95E-11
E_0	9.73E-07
E_1	8.74E-10
λ_{TK}(μm)	0.246

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2298	$P'_{s,t}$	0.2267
$P_{C,s}$	0.4877	$P'_{C',s}$	0.5263
$P_{d,C}$	0.2938	$P'_{d,C'}$	0.2443
$P_{e,d}$	0.2365	$P'_{e,d}$	0.2334
$P_{g,F}$	0.5837	$P'_{g,F'}$	0.5170
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0000	$\Delta P_{C,s}$	0.0000
$\Delta P_{F,e}$	0.0000	$\Delta P_{g,F}$	0.0000

着色度 Color Code	
λ_{80}/λ_5	350/320
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	417
T_s (℃)	470
$T_{10}^{14.5}$ (℃)	364
T_{10}^{13} (℃)	402
$T_{10}^{7.6}$(℃)	562
$\alpha_{-30/70℃}$(10^{-7}/K)	91
$\alpha_{100/300℃}$(10^{-7}/K)	114
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	2
CR	1
RC(S)	3
RA(S)	2

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.890	0.790
2200	0.918	0.842
2000	0.958	0.917
1800	0.980	0.961
1600	0.996	0.992
1400	0.997	0.995
1200	0.999	0.998
1060	0.999	0.999
1000	0.999	0.999
950	0.999	0.999
900	0.999	0.998
850	0.999	0.998
800	0.997	0.994
700	0.997	0.994
650	0.997	0.994
600	0.997	0.994
550	0.997	0.994
500	0.996	0.993
480	0.996	0.992
460	0.995	0.991
440	0.994	0.989
420	0.994	0.988
400	0.992	0.985
390	0.990	0.980
380	0.985	0.970
370	0.979	0.959
360	0.965	0.931
350	0.931	0.867
340	0.840	0.710
330	0.600	0.360
320	0.160	0.030
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	381
F_A	86
E (10^7Pa)	5854
G (10^7Pa)	2375
μ	0.232
B (10^{-12}/Pa)	2.36

其他性质 Other Properties	
ρ (g/cm^3)	3.57

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	-0.2	0.9	0.9	1.5	2.5	3.1
-20～0	0.3	1.0	1.6	1.6	2.5	3.5
0～20	0.3	1.3	1.6	1.6	2.5	3.6
20～40	0.9	1.6	1.9	2.5	3.2	4.2
40～60	1.9	1.7	2.0	2.7	3.6	4.5
60～80	1.0	2.0	2.6	2.8	3.7	4.8
80～100						
100～120						
120～140						

H-F5	624359	n_d = 1.624350	υ_d = 35.92	$n_F - n_C$ = 0.017380
		n_e = 1.628462	υ_e = 35.66	$n_{F'} - n_{C'}$ = 0.017626

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	1.586062
$n_{1970.09}$	1970.09	1.591856
$n_{1529.58}$	1529.58	1.598269
$n_{1060.0}$	1060.0	1.605708
n_t	1013.98	1.606645
n_s	852.11	1.610737
n_r	706.52	1.616436
n_C	656.27	1.619255
$n_{C'}$	643.85	1.620054
n_{He-Ne}	632.8	1.620805
n_D	589.29	1.624198
n_d	587.56	1.624350
n_e	546.07	1.628462
n_F	486.13	1.636635
$n_{F'}$	479.99	1.637680
n_g	435.83	1.646874
n_h	404.66	1.655875
n_i	365.01	1.672538
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
K_1	1.43541709E+00
L_1	1.08394789E-02
K_2	1.33104631E-01
L_2	5.81528460E-02
K_3	1.22151860E+00
L_3	1.20768299E+02

折射率温度系数常数 Constants of dn/dt	
D_0	-7.35E-07
D_1	1.37E-08
D_2	-1.86E-11
E_0	7.71E-07
E_1	6.53E-10
λ_{TK}(μm)	0.265

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2354	$P'_{s,t}$	0.2322
$P_{C,s}$	0.4901	$P'_{C',s}$	0.5286
$P_{d,C}$	0.2932	$P'_{d,C'}$	0.2437
$P_{e,d}$	0.2366	$P'_{e,d}$	0.2333
$P_{g,F}$	0.5891	$P'_{g,F'}$	0.5216
$P_{i,h}$	0.9587	$P'_{i,h}$	0.9454

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0100	$\Delta P_{C,s}$	0.0034
$\Delta P_{F,e}$	0.0003	$\Delta P_{g,F}$	0.0046

着色度 Color Code	
λ_{80}/λ_5	385/355
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	610
T_s (℃)	637
$T_{10^{14.5}}$ (℃)	535
$T_{10^{13}}$ (℃)	575
$T_{10^{7.6}}$(℃)	722
$\alpha_{-30/70℃}$(10^{-7}/K)	78
$\alpha_{100/300℃}$(10^{-7}/K)	97
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	2
D_A	1
CR	1
RC(S)	2
RA(S)	1

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.940	0.883
2200	0.949	0.901
2000	0.980	0.960
1800	0.989	0.977
1600	0.996	0.992
1400	0.996	0.992
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.999	0.998
650	0.999	0.997
600	0.998	0.996
550	0.997	0.995
500	0.997	0.994
480	0.996	0.993
460	0.996	0.992
440	0.995	0.990
420	0.994	0.988
400	0.985	0.970
390	0.969	0.938
380	0.920	0.846
370	0.770	0.593
360	0.390	0.152
350		
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	526
F_A	148
E (10^7Pa)	8057
G (10^7Pa)	3268
μ	0.233
B (10^{-12}/Pa)	

其他性质 Other Properties	
ρ (g/cm^3)	2.69

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	1.4	2.1	2.4	2.6	3.3	4.0
-40～-20	1.4	2.2	2.5	2.7	3.4	4.2
-20～0	1.5	2.2	2.5	2.7	3.4	4.3
0～20	1.5	2.2	2.5	2.7	3.5	4.5
20～40	1.5	2.3	2.6	2.8	3.7	4.6
40～60	1.6	2.4	2.7	3.0	3.9	4.8
60～80	1.7	2.6	2.9	3.2	4.1	5.0
80～100	1.9	2.7	3.1	3.5	4.3	5.3
100～120	2.0	2.7	3.2	3.6	4.4	5.4
120～140	2.0	2.9	3.2	3.7	4.5	5.5

F5	624359	n_d = 1.62435	υ_d = 35.92	$n_F - n_C$ = 0.017380
		n_e = 1.62847	υ_e = 35.65	$n_{F'} - n_{C'}$ = 0.017631

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.60682
n_s	852.11	1.61080
n_r	706.52	1.61645
n_C	656.27	1.61925
$n_{C'}$	643.85	1.62005
n_{He-Ne}	632.8	1.62080
n_D	589.29	1.62420
n_d	587.56	1.62435
n_e	546.07	1.62847
n_F	486.13	1.63663
$n_{F'}$	479.99	1.63768
n_g	435.83	1.64673
n_h	404.66	1.65550
n_i	365.01	1.67131
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	2.5683752E+00
A_1	-9.1404623E-03
A_2	2.2597964E-02
A_3	9.9985349E-04
A_4	-3.6633071E-05
A_5	4.9332480E-06

折射率温度系数常数 Constants of dn/dt	
D_0	2.39E-06
D_1	1.01E-08
D_2	-5.90E-11
E_0	1.05E-06
E_1	2.13E-09
λ_{TK}(μm)	0.231

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2290	$P'_{s,t}$	0.2257
$P_{C,s}$	0.4862	$P'_{C',s}$	0.5246
$P_{d,C}$	0.2934	$P'_{d,C'}$	0.2439
$P_{e,d}$	0.2371	$P'_{e,d}$	0.2337
$P_{g,F}$	0.5812	$P'_{g,F'}$	0.5133
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	-0.0003	$\Delta P_{C,s}$	-0.0005
$\Delta P_{F,e}$	-0.0005	$\Delta P_{g,F}$	-0.0034

着色度 Color Code	
λ_{80}/λ_5	360/320
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	430
T_s (℃)	473
$T_{10}^{14.5}$ (℃)	374
T_{10}^{13} (℃)	413
$T_{10}^{7.6}$(℃)	604
$\alpha_{-30/70℃}$(10^{-7}/K)	84
$\alpha_{100/300℃}$(10^{-7}/K)	100
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	1
CR	1
RC(S)	2
RA(S)	1

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.914	0.836
2200	0.934	0.873
2000	0.968	0.937
1800	0.985	0.970
1600	0.998	0.997
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.999	0.998
650	0.999	0.998
600	0.999	0.998
550	0.999	0.998
500	0.999	0.998
480	0.998	0.997
460	0.998	0.996
440	0.997	0.994
420	0.995	0.991
400	0.994	0.988
390	0.990	0.980
380	0.984	0.968
370	0.977	0.955
360	0.960	0.921
350	0.921	0.849
340	0.820	0.680
330	0.570	0.320
320	0.160	0.030
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	380
F_A	81
E (10^7Pa)	5785
G (10^7Pa)	2360
μ	0.226
B (10^{-12}/Pa)	2.71

其他性质 Other Properties	
ρ (g/cm^3)	3.64

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	3.1	3.6	3.9	4.3	4.8	5.8
-20～0	3.1	3.9	4.2	4.8	5.3	6.4
0～20	3.2	4.2	4.5	4.8	5.9	6.7
20～40	3.1	4.2	4.5	4.8	6.1	6.9
40～60	2.9	4.2	4.5	4.9	6.2	7.3
60～80	3.5	4.9	5.1	5.3	6.4	7.3
80～100						
100～120						
120～140						

CDGM

F6	625356	n_d = 1.62495	υ_d = 35.57	$n_F - n_C$ = 0.017570
		n_e = 1.62911	υ_e = 35.31	$n_{F'} - n_{C'}$ = 0.017818

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.60732
n_s	852.11	1.61130
n_r	706.52	1.61697
n_C	656.27	1.61981
$n_{C'}$	643.85	1.62061
n_{He-Ne}	632.8	1.62137
n_D	589.29	1.62480
n_d	587.56	1.62495
n_e	546.07	1.62911
n_F	486.13	1.63738
$n_{F'}$	479.99	1.63843
n_g	435.83	1.64764
n_h	404.66	1.65656
n_i	365.01	1.67274
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	2.5684972E+00
A_1	-8.3623212E-03
A_2	2.3444829E-02
A_3	8.2892434E-04
A_4	-1.1835548E-05
A_5	4.0956166E-06

折射率温度系数常数 Constants of dn/dt	
D_0	-4.05E-06
D_1	1.51E-08
D_2	-6.65E-11
E_0	1.00E-06
E_1	9.43E-10
λ_{TK}(μm)	0.240

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2265	$P'_{s,t}$	0.2234
$P_{C,s}$	0.4843	$P'_{C',s}$	0.5225
$P_{d,C}$	0.2929	$P'_{d,C'}$	0.2437
$P_{e,d}$	0.2368	$P'_{e,d}$	0.2335
$P_{g,F}$	0.5840	$P'_{g,F'}$	0.5169
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	-0.0030	$\Delta P_{C,s}$	-0.0015
$\Delta P_{F,e}$	0.0005	$\Delta P_{g,F}$	-0.0011

着色度 Color Code	
λ_{80}/λ_5	350/320
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	403
T_s (℃)	452
$T_{10}^{14.5}$ (℃)	349
T_{10}^{13} (℃)	384
$T_{10}^{7.6}$(℃)	
$\alpha_{-30/70℃}$(10^{-7}/K)	98
$\alpha_{100/300℃}$(10^{-7}/K)	122
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	3
CR	
RC(S)	3
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.870	0.760
2200	0.909	0.826
2000	0.952	0.907
1800	0.978	0.956
1600	0.997	0.994
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.997
700	0.997	0.995
650	0.996	0.993
600	0.996	0.993
550	0.996	0.992
500	0.995	0.990
480	0.994	0.989
460	0.994	0.988
440	0.993	0.987
420	0.993	0.986
400	0.991	0.983
390	0.988	0.977
380	0.984	0.968
370	0.978	0.956
360	0.962	0.925
350	0.927	0.859
340	0.830	0.690
330	0.570	0.330
320	0.150	0.020
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	399
F_A	88
E (10^7Pa)	5807
G (10^7Pa)	2347
μ	0.237
B (10^{-12}/Pa)	

其他性质 Other Properties	
ρ (g/cm^3)	3.60

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	-0.6	-0.1	0.6	0.1	1.8	2.8
-20～0	-0.3	0.9	1.1	1.2	2.0	3.0
0～20	0.0	1.0	1.2	1.5	2.2	3.3
20～40	0.1	1.0	1.3	1.5	2.4	3.4
40～60	0.1	1.1	1.4	1.9	2.9	3.7
60～80	0.2	1.1	1.5	2.0	3.0	4.1
80～100						
100～120						
120～140						

F7	636354	n_d = 1.63636	υ_d = 35.35	$n_F - n_C$ = 0.018001
		n_e = 1.64062	υ_e = 35.11	$n_{F'} - n_{C'}$ = 0.018244

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.61825
n_s	852.11	1.62234
n_r	706.52	1.62818
n_C	656.27	1.63108
$n_{C'}$	643.85	1.63191
n_{He-Ne}	632.8	1.63269
n_D	589.29	1.63621
n_d	587.56	1.63636
n_e	546.07	1.64062
n_F	486.13	1.64908
$n_{F'}$	479.99	1.65015
n_g	435.83	1.65956
n_h	404.66	1.66869
n_i	365.01	1.68527
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

A_0	2.6027537E+00
A_1	-8.4678903E-03
A_2	2.4659617E-02
A_3	7.4451296E-04
A_4	-4.8532841E-06
A_5	4.2592011E-06

折射率温度系数常数 Constants of dn/dt

D_0	1.17E-06
D_1	2.08E-08
D_2	-1.11E-10
E_0	1.16E-06
E_1	2.78E-10
λ_{TK}(μm)	0.217

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2272	$P'_{s,t}$	0.2242
$P_{C,s}$	0.4855	$P'_{C',s}$	0.5246
$P_{d,C}$	0.2933	$P'_{d,C'}$	0.2439
$P_{e,d}$	0.2367	$P'_{e,d}$	0.2335
$P_{g,F}$	0.5822	$P'_{g,F'}$	0.5158
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	-0.0001	$\Delta P_{C,s}$	0.0002
$\Delta P_{F,e}$	-0.0003	$\Delta P_{g,F}$	-0.0033

着色度 Color Code

λ_{80}/λ_5	360/330
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	441
T_s (℃)	500
$T_{10}^{14.5}$ (℃)	382
T_{10}^{13} (℃)	425
$T_{10}^{7.6}$(℃)	
$\alpha_{-30/70℃}$(10^{-7}/K)	85
$\alpha_{100/300℃}$(10^{-7}/K)	97
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	2
CR	1
RC(S)	2
RA(S)	2

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.940	0.883
2200	0.954	0.910
2000	0.980	0.960
1800	0.988	0.977
1600	0.996	0.993
1400	0.995	0.991
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.997
700	0.998	0.997
650	0.998	0.996
600	0.998	0.996
550	0.998	0.996
500	0.997	0.995
480	0.997	0.995
460	0.997	0.994
440	0.997	0.994
420	0.996	0.992
400	0.994	0.988
390	0.988	0.976
380	0.982	0.964
370	0.973	0.946
360	0.946	0.895
350	0.877	0.769
340	0.688	0.474
330	0.298	0.089
320		
310		
300		
290		
280		

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	2.1	2.8	3.1	3.7	4.2	4.7
-20～0	2.2	3.3	3.8	4.0	5.0	6.5
0～20	2.2	3.7	4.0	4.5	5.3	6.3
20～40	2.7	3.7	4.2	4.4	5.5	6.3
40～60	3.0	3.9	4.3	4.6	5.7	7.0
60～80	3.4	4.0	4.6	5.1	5.9	7.2
80～100						
100～120						
120～140						

机械性质 Mechanical Properties

H_K (10^7Pa)	382
F_A	97
E (10^7Pa)	5744
G (10^7Pa)	2340
μ	0.227
B (10^{-12}/Pa)	1.74

其他性质 Other Properties

ρ (g/cm^3)	3.73

备注 Remarks

CDGM

H-F13	626357	n_d = 1.62588	υ_d = 35.70	$n_F - n_C$ = 0.017532
		n_e = 1.63003	υ_e = 35.43	$n_{F'} - n_{C'}$ = 0.017780

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.60798
n_s	852.11	1.61212
n_r	706.52	1.61790
n_C	656.27	1.62074
$n_{C'}$	643.85	1.62155
n_{He-Ne}	632.8	1.62231
n_D	589.29	1.62573
n_d	587.56	1.62588
n_e	546.07	1.63003
n_F	486.13	1.63828
$n_{F'}$	479.99	1.63933
n_g	435.83	1.64860
n_h	404.66	1.65769
n_i	365.01	1.67432
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	2.5701640E+00
A_1	-9.2794803E-03
A_2	2.5625856E-02
A_3	-5.7248580E-05
A_4	1.2008657E-04
A_5	-1.7284484E-06

折射率温度系数常数 Constants of dn/dt	
D_0	-1.57E-06
D_1	1.11E-08
D_2	5.97E-11
E_0	1.09E-06
E_1	2.45E-09
λ_{TK}(μm)	0.195

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2361	$P'_{s,t}$	0.2328
$P_{C,s}$	0.4917	$P'_{C',s}$	0.5304
$P_{d,C}$	0.2933	$P'_{d,C'}$	0.2436
$P_{e,d}$	0.2367	$P'_{e,d}$	0.2334
$P_{g,F}$	0.5888	$P'_{g,F'}$	0.5215
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0134	$\Delta P_{C,s}$	0.0055
$\Delta P_{F,e}$	0.0004	$\Delta P_{g,F}$	0.0039

着色度 Color Code	
λ_{80}/λ_5	390/360
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	588
T_s (℃)	626
$T_{10^{14.5}}$ (℃)	536
$T_{10^{13}}$ (℃)	569
$T_{10^{7.6}}$(℃)	692
$\alpha_{-30/70℃}$(10^{-7}/K)	80
$\alpha_{100/300℃}$(10^{-7}/K)	99
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	1
CR	1
RC(S)	1
RA(S)	1

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.918	0.843
2200	0.938	0.879
2000	0.977	0.955
1800	0.988	0.976
1600	0.998	0.996
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.996	0.993
650	0.995	0.991
600	0.996	0.992
550	0.996	0.992
500	0.993	0.986
480	0.991	0.983
460	0.989	0.979
440	0.987	0.974
420	0.982	0.965
400	0.961	0.924
390	0.928	0.861
380	0.840	0.710
370	0.630	0.400
360	0.240	0.060
350		
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	586
F_A	122
E (10^7Pa)	8354
G (10^7Pa)	3394
μ	0.231
B (10^{-12}/Pa)	2.83

其他性质 Other Properties	
ρ (g/cm^3)	2.69

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	2.0	2.6	2.7	2.6	3.1	3.6
-20～0	1.3	2.1	2.4	2.7	3.4	4.3
0～20	1.1	1.9	2.2	2.8	3.5	4.4
20～40	1.1	2.1	2.5	3.0	3.9	4.8
40～60	1.3	3.0	3.7	3.3	4.5	5.2
60～80	2.0	2.8	3.3	3.5	4.0	5.3
80～100						
100～120						
120～140						

CDGM

F13	626357	n_d = 1.62588	υ_d = 35.70	$n_F - n_C$ = 0.017530
		n_e = 1.63004	υ_e = 35.45	$n_{F'} - n_{C'}$ = 0.017773

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.60823
n_s	852.11	1.61221
n_r	706.52	1.61791
n_C	656.27	1.62074
$n_{C'}$	643.85	1.62154
n_{He-Ne}	632.8	1.62230
n_D	589.29	1.62573
n_d	587.56	1.62588
n_e	546.07	1.63004
n_F	486.13	1.63827
$n_{F'}$	479.99	1.63932
n_g	435.83	1.64851
n_h	404.66	1.65742
n_i	365.01	1.67355
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

A_0	2.5695708E+00
A_1	-7.6040314E-03
A_2	2.4968071E-02
A_3	3.3450195E-04
A_4	5.6815438E-05
A_5	6.0732629E-07

折射率温度系数常数 Constants of dn/dt

D_0	-1.89E-06
D_1	2.03E-08
D_2	-1.74E-10
E_0	1.05E-06
E_1	9.12E-10
λ_{TK}(μm)	0.237

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2270	$P'_{s,t}$	0.2239
$P_{C,s}$	0.4866	$P'_{C',s}$	0.5250
$P_{d,C}$	0.2932	$P'_{d,C'}$	0.2441
$P_{e,d}$	0.2373	$P'_{e,d}$	0.2340
$P_{g,F}$	0.5840	$P'_{g,F'}$	0.5169
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	-0.0008	$\Delta P_{C,s}$	0.0005
$\Delta P_{F,e}$	-0.0006	$\Delta P_{g,F}$	-0.0009

着色度 Color Code

λ_{80}/λ_5	350/320
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	416
T_s (℃)	465
$T_{10^{14.5}}$ (℃)	371
$T_{10^{13}}$ (℃)	409
$T_{10^{7.6}}$(℃)	567
$\alpha_{-30/70℃}$(10^{-7}/K)	94
$\alpha_{100/300℃}$(10^{-7}/K)	111
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	3
CR	2
RC(S)	1
RA(S)	1

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.915	0.837
2200	0.940	0.884
2000	0.970	0.941
1800	0.982	0.964
1600	0.994	0.988
1400	0.998	0.997
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.999	0.998
650	0.999	0.998
600	0.999	0.998
550	0.999	0.998
500	0.999	0.998
480	0.999	0.998
460	0.999	0.998
440	0.998	0.997
420	0.997	0.995
400	0.994	0.989
390	0.990	0.981
380	0.984	0.969
370	0.978	0.957
360	0.960	0.922
350	0.917	0.842
340	0.810	0.650
330	0.520	0.270
320	0.100	0.010
310		
300		
290		
280		

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	-2.7	-1.8	-1.1	-1.1	-0.1	0.4
-20～0	-1.0	-0.2	0.0	0.4	1.2	2.4
0～20	-0.4	0.2	0.7	1.1	1.9	2.8
20～40	-0.4	0.5	1.0	1.4	2.2	3.2
40～60	-0.2	0.8	1.3	1.8	2.6	3.5
60～80	0.5	1.3	1.6	2.0	3.0	4.2
80～100						
100～120						
120～140						

机械性质 Mechanical Properties

H_K (10^7Pa)	365
F_A	84
E (10^7Pa)	5580
G (10^7Pa)	2270
μ	0.229
B (10^{-12}/Pa)	2.66

其他性质 Other Properties

ρ (g/cm^3)	3.63

备注 Remarks

CDGM

H-F51	640345	n_d = 1.639800	υ_d = 34.46	$n_F - n_C$ = 0.018564
		n_e = 1.644189	υ_e = 34.20	$n_{F'} - n_{C'}$ = 0.018836

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	1.600289
$n_{1970.09}$	1970.09	1.605973
$n_{1529.58}$	1529.58	1.612410
$n_{1060.0}$	1060.0	1.620080
n_t	1013.98	1.621059
n_s	852.11	1.625358
n_r	706.52	1.631384
n_C	656.27	1.634376
$n_{C'}$	643.85	1.635226
n_{He-Ne}	632.8	1.636025
n_D	589.29	1.639638
n_d	587.56	1.639800
n_e	546.07	1.644189
n_F	486.13	1.652940
$n_{F'}$	479.99	1.654062
n_g	435.83	1.663953
n_h	404.66	1.673672
n_i	365.01	1.691743
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
K_1	1.68241262E-01
L_1	5.68206298E-02
K_2	1.44553442E+00
L_2	1.05664479E-02
K_3	3.84023735E+00
L_3	3.66768464E+02

折射率温度系数常数 Constants of dn/dt	
D_0	-1.68E-06
D_1	1.62E-08
D_2	-2.28E-11
E_0	6.19E-07
E_1	8.36E-10
λ_{TK}(μm)	0.302

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2316	$P'_{s,t}$	0.2282
$P_{C,s}$	0.4858	$P'_{C',s}$	0.5239
$P_{d,C}$	0.2922	$P'_{d,C'}$	0.2428
$P_{e,d}$	0.2364	$P'_{e,d}$	0.2330
$P_{g,F}$	0.5932	$P'_{g,F'}$	0.5251
$P_{i,h}$	0.9734	$P'_{i,h}$	0.9594

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0087	$\Delta P_{C,s}$	0.0026
$\Delta P_{F,e}$	0.0006	$\Delta P_{g,F}$	0.0062

着色度 Color Code	
λ_{80}/λ_5	390/360
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	597
T_s (℃)	632
$T_{10^{14.5}}$ (℃)	535
$T_{10^{13}}$ (℃)	571
$T_{10^{7.6}}$(℃)	701
$\alpha_{-30/70℃}$(10^{-7}/K)	84
$\alpha_{100/300℃}$(10^{-7}/K)	102
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	1
CR	1
RC(S)	2
RA(S)	1

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.922	0.851
2200	0.940	0.884
2000	0.975	0.950
1800	0.987	0.975
1600	0.998	0.997
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.998	0.996
650	0.997	0.995
600	0.997	0.995
550	0.997	0.995
500	0.996	0.992
480	0.995	0.990
460	0.993	0.987
440	0.991	0.983
420	0.986	0.972
400	0.962	0.925
390	0.923	0.852
380	0.830	0.690
370	0.590	0.350
360	0.200	0.040
350		
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	567
F_A	127
E (10^7Pa)	8078
G (10^7Pa)	3265
μ	0.237
B (10^{-12}/Pa)	2.82

其他性质 Other Properties	
ρ (g/cm^3)	2.76

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	0.5	1.3	1.5	1.9	2.6	3.5
-20～0	0.8	1.4	1.6	1.9	2.7	3.6
0～20	1.1	1.5	1.7	2.0	3.0	3.7
20～40	1.2	1.7	1.9	2.2	3.3	4.2
40～60	1.2	1.9	2.2	2.6	3.5	4.6
60～80	1.3	1.9	2.3	2.8	3.7	4.7
80～100						
100～120						
120～140						

H-BaF2	570495	n_d = 1.56970	υ_d = 49.45	$n_F - n_C$ = 0.011520
		n_e = 1.57244	υ_e = 49.12	$n_{F'} - n_{C'}$ = 0.011654

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.55726
n_s	852.11	1.56026
n_r	706.52	1.56430
n_C	656.27	1.56625
$n_{C'}$	643.85	1.56679
n_{He-Ne}	632.8	1.56730
n_D	589.29	1.56960
n_d	587.56	1.56970
n_e	546.07	1.57244
n_F	486.13	1.57777
$n_{F'}$	479.99	1.57844
n_g	435.83	1.58424
n_h	404.66	1.58974
n_i	365.01	1.59942
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	2.4171173E+00
A_1	-8.2317727E-03
A_2	1.6854480E-02
A_3	-3.4735050E-05
A_4	5.1538978E-05
A_5	-1.3311744E-06

折射率温度系数常数 Constants of dn/dt	
D_0	-2.16E-06
D_1	1.57E-08
D_2	-3.10E-11
E_0	4.71E-07
E_1	6.41E-10
λ_{TK}(μm)	0.268

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2604	$P'_{s,t}$	0.2574
$P_{C,s}$	0.5200	$P'_{C',s}$	0.5603
$P_{d,C}$	0.2995	$P'_{d,C'}$	0.2500
$P_{e,d}$	0.2378	$P'_{e,d}$	0.2351
$P_{g,F}$	0.5616	$P'_{g,F'}$	0.4976
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0011	$\Delta P_{C,s}$	0.0013
$\Delta P_{F,e}$	0.0000	$\Delta P_{g,F}$	0.0001

着色度 Color Code	
λ_{80}/λ_5	370/340
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	574
T_s (℃)	633
$T_{10^{14.5}}$ (℃)	518
$T_{10^{13}}$ (℃)	555
$T_{10^{7.6}}$(℃)	713
$\alpha_{-30/70℃}$(10^{-7}/K)	82
$\alpha_{100/300℃}$(10^{-7}/K)	98
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	2
D_A	1
CR	1
RC(S)	1
RA(S)	1

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.913	0.833
2200	0.930	0.875
2000	0.972	0.947
1800	0.986	0.972
1600	0.995	0.991
1400	0.994	0.989
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.998	0.997
650	0.998	0.996
600	0.998	0.996
550	0.998	0.996
500	0.997	0.995
480	0.997	0.995
460	0.997	0.994
440	0.996	0.993
420	0.996	0.992
400	0.992	0.984
390	0.986	0.973
380	0.973	0.946
370	0.941	0.886
360	0.854	0.729
350	0.624	0.389
340	0.226	0.051
330		
320		
310		
300		
290		
280		

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	0.5	0.8	1.0	1.1	1.5	1.9
-20～0	0.5	1.0	1.1	1.2	1.7	2.1
0～20	0.6	1.1	1.2	1.3	1.9	2.2
20～40	0.8	1.2	1.3	1.5	2.0	2.5
40～60	0.8	1.3	1.4	1.6	2.1	2.7
60～80	0.9	1.4	1.6	1.9	2.3	2.8
80～100						
100～120						
120～140						

机械性质 Mechanical Properties	
H_K (10^7Pa)	484
F_A	123
E (10^7Pa)	7437
G (10^7Pa)	3003
μ	0.238
B (10^{-12}/Pa)	2.74

其他性质 Other Properties	
ρ (g/cm^3)	2.82

备注 Remarks

CDGM

H-BaF3	580537	n_d = 1.57957	υ_d = 53.71	$n_F - n_C$ = 0.010790
		n_e = 1.58213	υ_e = 53.42	$n_{F'} - n_{C'}$ = 0.010898

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.56778
n_s	852.11	1.57065
n_r	706.52	1.57448
n_C	656.27	1.57631
$n_{C'}$	643.85	1.57683
n_{He-Ne}	632.8	1.57731
n_D	589.29	1.57947
n_d	587.56	1.57957
n_e	546.07	1.58213
n_F	486.13	1.58710
$n_{F'}$	479.99	1.58773
n_g	435.83	1.59307
n_h	404.66	1.59806
n_i	365.01	1.60670
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	2.4516840E+00
A_1	-8.6208267E-03
A_2	1.5349780E-02
A_3	1.8255503E-04
A_4	1.4144995E-05
A_5	-1.6815996E-07

折射率温度系数常数 Constants of dn/dt	
D_0	3.07E-06
D_1	1.10E-08
D_2	8.58E-11
E_0	5.69E-07
E_1	1.29E-09
λ_{TK}(μm)	0.205

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2660	$P'_{s,t}$	0.2634
$P_{C,s}$	0.5246	$P'_{C',s}$	0.5671
$P_{d,C}$	0.3021	$P'_{d,C'}$	0.2514
$P_{e,d}$	0.2373	$P'_{e,d}$	0.2349
$P_{g,F}$	0.5533	$P'_{g,F'}$	0.4900
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	-0.0088	$\Delta P_{C,s}$	-0.0042
$\Delta P_{F,e}$	0.0003	$\Delta P_{g,F}$	-0.0009

着色度 Color Code	
λ_{80}/λ_5	360/330
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	595
T_s (℃)	653
$T_{10^{14.5}}$ (℃)	546
$T_{10^{13}}$ (℃)	584
$T_{10^{7.6}}$(℃)	750
$\alpha_{-30/70℃}$(10^{-7}/K)	67
$\alpha_{100/300℃}$(10^{-7}/K)	84
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	1
CR	1
RC(S)	1
RA(S)	1

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.931	0.867
2200	0.953	0.908
2000	0.984	0.968
1800	0.990	0.981
1600	0.995	0.993
1400	0.994	0.988
1200	0.999	0.998
1060	0.999	0.999
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.999	0.998
650	0.999	0.998
600	0.999	0.998
550	0.998	0.997
500	0.998	0.996
480	0.998	0.996
460	0.997	0.994
440	0.996	0.993
420	0.995	0.991
400	0.995	0.990
390	0.992	0.984
380	0.987	0.974
370	0.976	0.953
360	0.947	0.896
350	0.871	0.759
340	0.682	0.465
330	0.321	0.103
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	523
F_A	90
E (10^7Pa)	7619
G (10^7Pa)	3001
μ	0.269
B (10^{-12}/Pa)	2.95

其他性质 Other Properties	
ρ (g/cm^3)	3.14

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	3.2	3.7	4.0	4.2	4.5	5.1
-20～0	3.3	3.7	3.8	4.2	4.5	4.8
0～20	3.2	3.5	3.6	4.1	4.2	4.6
20～40	2.9	3.8	4.0	4.1	4.5	5.1
40～60	3.5	3.8	4.3	4.3	4.9	5.3
60～80	3.8	4.1	4.3	4.3	5.0	5.4
80～100						
100～120						
120～140						

CDGM

H-BaF4	583466	n_d = 1.582670	υ_d = 46.60	$n_F - n_C$ = 0.012504
		n_e = 1.585640	υ_e = 46.30	$n_{F'} - n_{C'}$ = 0.012648

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	1.552244
$n_{1970.09}$	1970.09	1.557215
$n_{1529.58}$	1529.58	1.562639
$n_{1060.0}$	1060.0	1.568677
n_t	1013.98	1.569413
n_s	852.11	1.572569
n_r	706.52	1.576855
n_C	656.27	1.578942
$n_{C'}$	643.85	1.579531
n_{He-Ne}	632.8	1.580082
n_D	589.29	1.582560
n_d	587.56	1.582670
n_e	546.07	1.585640
n_F	486.13	1.591446
$n_{F'}$	479.99	1.592179
n_g	435.83	1.598534
n_h	404.66	1.604583
n_i	365.01	1.615291
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
K_1	1.32811418E+00
L_1	8.68510750E-03
K_2	1.26865199E-01
L_2	4.40786174E-02
K_3	1.04004826E+00
L_3	1.20899619E+02

折射率温度系数常数 Constants of dn/dt	
D_0	-2.86E-06
D_1	1.78E-08
D_2	-4.50E-11
E_0	8.39E-07
E_1	4.60E-10
λ_{TK}(μm)	0.153

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2524	$P'_{s,t}$	0.2495
$P_{C,s}$	0.5097	$P'_{C',s}$	0.5504
$P_{d,C}$	0.2981	$P'_{d,C'}$	0.2482
$P_{e,d}$	0.2375	$P'_{e,d}$	0.2348
$P_{g,F}$	0.5669	$P'_{g,F'}$	0.5025
$P_{i,h}$	0.8564	$P'_{i,h}$	0.8466

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	-0.0037	$\Delta P_{C,s}$	-0.0022
$\Delta P_{F,e}$	0.0001	$\Delta P_{g,F}$	0.0005

着色度 Color Code	
λ_{80}/λ_5	375/345
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	577
T_s (℃)	625
$T_{10}^{14.5}$ (℃)	516
T_{10}^{13} (℃)	555
$T_{10}^{7.6}$(℃)	726
$\alpha_{-30/70℃}$(10^{-7}/K)	82
$\alpha_{100/300℃}$(10^{-7}/K)	100
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	1
CR	1
RC(S)	1
RA(S)	1

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.912	0.832
2200	0.932	0.869
2000	0.969	0.938
1800	0.984	0.968
1600	0.995	0.991
1400	0.996	0.993
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.996
700	0.998	0.996
650	0.998	0.996
600	0.997	0.995
550	0.997	0.995
500	0.997	0.995
480	0.997	0.995
460	0.996	0.993
440	0.995	0.991
420	0.995	0.990
400	0.990	0.981
390	0.983	0.967
380	0.966	0.934
370	0.925	0.855
360	0.806	0.649
350	0.506	0.256
340	0.158	0.025
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	479
F_A	120
E (10^7Pa)	7276
G (10^7Pa)	2931
μ	0.241
B (10^{-12}/Pa)	2.59

其他性质 Other Properties	
ρ (g/cm^3)	2.91

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	0.2	0.8	1.0	1.1	1.7	2.2
-20～0	0.3	0.9	1.1	1.2	1.8	2.3
0～20	0.3	1.1	1.2	1.6	2.0	2.4
20～40	0.5	1.3	1.4	1.7	2.2	2.6
40～60	0.7	1.4	1.6	1.8	2.3	2.8
60～80	0.9	1.4	1.7	1.9	2.4	3.0
80～100						
100～120						
120～140						

BaF4	583465	n_d = 1.58271	υ_d = 46.47	$n_F - n_C$ = 0.012540
		n_e = 1.58569	υ_e = 46.07	$n_{F'} - n_{C'}$ = 0.012714

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	
n_s	852.11	
n_r	706.52	1.57687
n_C	656.27	1.57897
$n_{C'}$	643.85	1.57955
n_{He-Ne}	632.8	1.58011
n_D	589.29	1.58260
n_d	587.56	1.58271
n_e	546.07	1.58569
n_F	486.13	1.59151
$n_{F'}$	479.99	1.59227
n_g	435.83	1.59862
n_h	404.66	1.60468
n_i	365.01	1.61535
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

A_0	2.4514720E+00
A_1	-6.5118879E-03
A_2	1.9377342E-02
A_3	-3.0637647E-04
A_4	1.0174985E-04
A_5	-3.9270356E-06

折射率温度系数常数 Constants of dn/dt

D_0	
D_1	
D_2	
E_0	
E_1	
λ_{TK}(μm)	

相对部分色散 Relative Partial Dispersions

$P_{s,t}$		$P'_{s,t}$	
$P_{C,s}$		$P'_{C',s}$	
$P_{d,C}$	0.2986	$P'_{d,C'}$	0.2485
$P_{e,d}$	0.2374	$P'_{e,d}$	0.2342
$P_{g,F}$	0.5673	$P'_{g,F'}$	0.4999
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$		$\Delta P_{C,s}$	
$\Delta P_{F,e}$	-0.0002	$\Delta P_{g,F}$	0.0007

着色度 Color Code

λ_{80}/λ_5	350/320
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	528
T_s (℃)	606
$T_{10}^{14.5}$ (℃)	475
T_{10}^{13} (℃)	518
$T_{10}^{7.6}$(℃)	
$\alpha_{-30/70℃}$(10^{-7}/K)	78
$\alpha_{100/300℃}$(10^{-7}/K)	91
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	1
CR	
RC(S)	1
RA(S)	1

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.931	0.867
2200	0.945	0.893
2000	0.973	0.947
1800	0.986	0.973
1600	0.997	0.994
1400	0.998	0.996
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.998	0.997
650	0.998	0.997
600	0.998	0.997
550	0.998	0.996
500	0.997	0.995
480	0.997	0.994
460	0.996	0.993
440	0.996	0.992
420	0.995	0.991
400	0.994	0.989
390	0.992	0.984
380	0.988	0.976
370	0.985	0.971
360	0.975	0.951
350	0.949	0.901
340	0.890	0.790
330	0.720	0.520
320	0.360	0.130
310		
300		
290		
280		

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20						
-20～0						
0～20						
20～40						
40～60						
60～80						
80～100						
100～120						
120～140						

机械性质 Mechanical Properties

H_K (10^7Pa)	442
F_A	97
E (10^7Pa)	6477
G (10^7Pa)	2619
μ	0.237
B (10^{-12}/Pa)	

其他性质 Other Properties

ρ (g/cm^3)	3.28

备注 Remarks

CDGM

H-BaF5	606439	n_d = 1.60562	υ_d = 43.88	$n_F - n_C$ = 0.013803
		n_e = 1.60890	υ_e = 43.57	$n_{F'} - n_{C'}$ = 0.013974

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.59106
n_s	852.11	1.59454
n_r	706.52	1.59924
n_C	656.27	1.60153
$n_{C'}$	643.85	1.60217
n_{He-Ne}	632.8	1.60278
n_D	589.29	1.60550
n_d	587.56	1.60562
n_e	546.07	1.60890
n_F	486.13	1.61533
$n_{F'}$	479.99	1.61615
n_g	435.83	1.62323
n_h	404.66	1.63002
n_i	365.01	1.64220
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	2.5242061E+00
A_1	-1.0552624E-02
A_2	1.7984739E-02
A_3	6.8026845E-04
A_4	-2.3542034E-05
A_5	3.3567097E-06

折射率温度系数常数 Constants of dn/dt	
D_0	-8.44E-07
D_1	2.08E-08
D_2	-7.18E-11
E_0	7.13E-07
E_1	6.88E-10
λ_{TK}(μm)	0.231

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2521	$P'_{s,t}$	0.2490
$P_{C,s}$	0.5064	$P'_{C',s}$	0.5460
$P_{d,C}$	0.2963	$P'_{d,C'}$	0.2469
$P_{e,d}$	0.2376	$P'_{e,d}$	0.2347
$P_{g,F}$	0.5723	$P'_{g,F'}$	0.5067
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0055	$\Delta P_{C,s}$	0.0009
$\Delta P_{F,e}$	0.0002	$\Delta P_{g,F}$	0.0014

着色度 Color Code	
λ_{80}/λ_5	380/350
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	576
T_s (℃)	624
$T_{10}^{14.5}$ (℃)	520
T_{10}^{13} (℃)	554
$T_{10}^{7.6}$(℃)	692
$\alpha_{-30/70℃}$(10^{-7}/K)	82
$\alpha_{100/300℃}$(10^{-7}/K)	97
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	1
CR	1
RC(S)	1
RA(S)	1

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.914	0.835
2200	0.937	0.878
2000	0.976	0.952
1800	0.987	0.973
1600	0.995	0.991
1400	0.994	0.988
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.998	0.997
650	0.998	0.996
600	0.997	0.995
550	0.997	0.995
500	0.996	0.993
480	0.996	0.993
460	0.995	0.991
440	0.993	0.987
420	0.991	0.983
400	0.984	0.968
390	0.973	0.947
380	0.948	0.899
370	0.882	0.778
360	0.698	0.487
350	0.302	0.091
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	556
F_A	168
E (10^7Pa)	8210
G (10^7Pa)	3303
μ	0.243
B (10^{-12}/Pa)	2.63

其他性质 Other Properties	
ρ (g/cm^3)	2.97

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	0.6	1.6	1.8	1.8	2.1	2.9
-20～0	0.6	1.8	1.8	1.9	2.6	3.0
0～20	1.6	1.8	2.2	2.7	3.0	3.7
20～40	1.6	1.8	2.2	2.7	3.2	3.9
40～60	1.6	2.4	2.6	2.8	3.5	4.2
60～80	2.0	2.6	2.9	3.0	3.5	4.3
80～100						
100～120						
120～140						

H-BaF6	608462	n_d = 1.60801	υ_d = 46.20	$n_F - n_C$ = 0.013160
		n_e = 1.61114	υ_e = 45.92	$n_{F'} - n_{C'}$ = 0.013310

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.59409
n_s	852.11	1.59739
n_r	706.52	1.60190
n_C	656.27	1.60409
$n_{C'}$	643.85	1.60471
n_{He-Ne}	632.8	1.60529
n_D	589.29	1.60790
n_d	587.56	1.60801
n_e	546.07	1.61114
n_F	486.13	1.61725
$n_{F'}$	479.99	1.61802
n_g	435.83	1.62470
n_h	404.66	1.63106
n_i	365.01	1.64238
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

A_0	2.5324222E+00
A_1	-9.1374479E-03
A_2	1.8161344E-02
A_3	4.6488999E-04
A_4	-9.7702362E-06
A_5	2.4656267E-06

折射率温度系数常数 Constants of dn/dt

D_0	-3.02E-06
D_1	1.55E-08
D_2	-1.32E-10
E_0	6.09E-07
E_1	9.44E-10
λ_{TK}(μm)	0.233

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2508	$P'_{s,t}$	0.2479
$P_{C,s}$	0.5091	$P'_{C',s}$	0.5500
$P_{d,C}$	0.2979	$P'_{d,C'}$	0.2479
$P_{e,d}$	0.2378	$P'_{e,d}$	0.2352
$P_{g,F}$	0.5661	$P'_{g,F'}$	0.5019
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	-0.0041	$\Delta P_{C,s}$	-0.0018
$\Delta P_{F,e}$	-0.0001	$\Delta P_{g,F}$	-0.0009

着色度 Color Code

λ_{80}/λ_5	380/345
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	597
T_s (℃)	649
$T_{10^{14.5}}$ (℃)	538
$T_{10^{13}}$ (℃)	576
$T_{10^{7.6}}$(℃)	726
$\alpha_{-30/70℃}$(10^{-7}/K)	82
$\alpha_{100/300℃}$(10^{-7}/K)	94
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	2
D_A	1
CR	1
RC(S)	1
RA(S)	1

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.909	0.825
2200	0.936	0.877
2000	0.973	0.947
1800	0.986	0.972
1600	0.995	0.991
1400	0.994	0.989
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.997	0.995
700	0.996	0.992
650	0.996	0.992
600	0.996	0.993
550	0.996	0.993
500	0.996	0.992
480	0.995	0.991
460	0.995	0.991
440	0.993	0.987
420	0.992	0.984
400	0.985	0.970
390	0.974	0.949
380	0.952	0.906
370	0.897	0.804
360	0.748	0.559
350	0.412	0.170
340	0.176	0.031
330		
320		
310		
300		
290		
280		

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	-0.6	-0.2	-0.2	0.0	0.4	1.2
-20～0	0.2	0.7	1.0	1.1	1.6	2.0
0～20	0.3	0.7	1.1	1.1	1.6	2.0
20～40	0.3	0.7	1.1	1.1	1.7	2.1
40～60	0.3	0.9	1.1	1.5	1.8	2.6
60～80	0.4	1.2	1.2	1.5	2.0	2.7
80～100						
100～120						
120～140						

机械性质 Mechanical Properties

H_K (10^7Pa)	538
F_A	146
E (10^7Pa)	7765
G (10^7Pa)	3105
μ	0.250
B (10^{-12}/Pa)	2.30

其他性质 Other Properties

ρ (g/cm^3)	3.11

备注 Remarks

CDGM

H-BaF7	614400	n_d = 1.614130	υ_d = 39.99	$n_F - n_C$ = 0.015359
		n_e = 1.617771	υ_e = 39.71	$n_{F'} - n_{C'}$ = 0.015559

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	1.579434
$n_{1970.09}$	1970.09	1.584760
$n_{1529.58}$	1529.58	1.590639
$n_{1060.0}$	1060.0	1.597416
n_t	1013.98	1.598264
n_s	852.11	1.601960
n_r	706.52	1.607077
n_C	656.27	1.609596
$n_{C'}$	643.85	1.610309
n_{He-Ne}	632.8	1.610978
n_D	589.29	1.613995
n_d	587.56	1.614130
n_e	546.07	1.617771
n_F	486.13	1.624955
$n_{F'}$	479.99	1.625868
n_g	435.83	1.633849
n_h	404.66	1.641560
n_i	365.01	1.655529
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
K_1	1.08754258E+00
L_1	1.17535981E+02
K_2	1.41618001E+00
L_2	1.00875311E-02
K_3	1.26987130E-01
L_3	5.26006682E-02

折射率温度系数常数 Constants of dn/dt	
D_0	-1.75E-06
D_1	1.92E-08
D_2	-3.75E-11
E_0	9.38E-07
E_1	3.34E-10
λ_{TK}(μm)	0.198

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2406	$P'_{s,t}$	0.2375
$P_{C,s}$	0.4972	$P'_{C',s}$	0.5366
$P_{d,C}$	0.2952	$P'_{d,C'}$	0.2456
$P_{e,d}$	0.2371	$P'_{e,d}$	0.2340
$P_{g,F}$	0.5791	$P'_{g,F'}$	0.5130
$P_{i,h}$	0.9095	$P'_{i,h}$	0.8978

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0032	$\Delta P_{C,s}$	0.0009
$\Delta P_{F,e}$	0.0000	$\Delta P_{g,F}$	0.0015

着色度 Color Code	
λ_{80}/λ_5	380/350
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	587
T_s (℃)	628
$T_{10^{14.5}}$ (℃)	530
$T_{10^{13}}$ (℃)	566
$T_{10^{7.6}}$(℃)	712
$\alpha_{-30/70℃}$(10^{-7}/K)	83
$\alpha_{100/300℃}$(10^{-7}/K)	103
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	1
CR	1
RC(S)	1
RA(S)	1

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.942	0.888
2200	0.954	0.911
2000	0.980	0.961
1800	0.989	0.978
1600	0.996	0.993
1400	0.997	0.994
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.997
700	0.998	0.996
650	0.998	0.996
600	0.997	0.995
550	0.997	0.994
500	0.996	0.992
480	0.995	0.991
460	0.995	0.990
440	0.994	0.988
420	0.991	0.982
400	0.981	0.963
390	0.966	0.934
380	0.929	0.863
370	0.830	0.689
360	0.567	0.321
350	0.161	0.026
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	507
F_A	131
E (10^7Pa)	7894
G (10^7Pa)	3180
μ	0.241
B (10^{-12}/Pa)	2.84

其他性质 Other Properties	
ρ (g/cm^3)	2.88

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	0.6	1.5	1.8	2.1	2.6	3.2
-20～0	0.6	1.8	2.0	2.2	2.7	3.5
0～20	0.8	1.9	2.1	2.4	2.8	3.8
20～40	1.1	2.0	2.2	2.6	3.2	4.1
40～60	1.5	2.1	2.3	2.7	3.5	4.3
60～80	1.9	2.2	2.4	2.8	3.7	4.3
80～100						
100～120						
120～140						

BaF7	614400	n_d = 1.61413	υ_d = 40.03	$n_F - n_C$ = 0.015340
		n_e = 1.61777	υ_e = 39.75	$n_{F'} - n_{C'}$ = 0.015542

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	
n_s	852.11	
n_r	706.52	1.60710
n_C	656.27	1.60960
$n_{C'}$	643.85	1.61032
n_{He-Ne}	632.8	1.61098
n_D	589.29	1.61400
n_d	587.56	1.61413
n_e	546.07	1.61777
n_F	486.13	1.62494
$n_{F'}$	479.99	1.62586
n_g	435.83	1.63380
n_h	404.66	1.64142
n_i	365.01	1.65512
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

A_0	2.5436416E+00
A_1	-8.6925216E-03
A_2	2.0049192E-02
A_3	8.9795352E-04
A_4	-4.9734473E-05
A_5	5.3556000E-06

折射率温度系数常数 Constants of dn/dt

D_0	
D_1	
D_2	
E_0	
E_1	
λ_{TK}(μm)	

相对部分色散 Relative Partial Dispersions

$P_{s,t}$		$P'_{s,t}$	
$P_{C,s}$		$P'_{C',s}$	
$P_{d,C}$	0.2952	$P'_{d,C'}$	0.2451
$P_{e,d}$	0.2373	$P'_{e,d}$	0.2342
$P_{g,F}$	0.5776	$P'_{g,F'}$	0.5109
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$		$\Delta P_{C,s}$	
$\Delta P_{F,e}$	-0.0003	$\Delta P_{g,F}$	0.0001

着色度 Color Code

λ_{80}/λ_5	360/330
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	474
T_s (℃)	550
$T_{10}^{14.5}$ (℃)	420
T_{10}^{13} (℃)	467
$T_{10}^{7.6}$(℃)	
$\alpha_{-30/70℃}$(10^{-7}/K)	83
$\alpha_{100/300℃}$(10^{-7}/K)	94
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	1
CR	1
RC(S)	1
RA(S)	1

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.946	0.894
2200	0.955	0.912
2000	0.979	0.958
1800	0.988	0.977
1600	0.999	0.998
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.998	0.997
850	0.998	0.997
800	0.997	0.995
700	0.996	0.993
650	0.996	0.993
600	0.996	0.993
550	0.996	0.993
500	0.995	0.991
480	0.995	0.990
460	0.994	0.988
440	0.993	0.987
420	0.992	0.985
400	0.989	0.979
390	0.985	0.970
380	0.978	0.956
370	0.970	0.940
360	0.945	0.893
350	0.890	0.790
340	0.750	0.560
330	0.420	0.180
320		
310		
300		
290		
280		

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20						
-20～0						
0～20						
20～40						
40～60						
60～80						
80～100						
100～120						
120～140						

机械性质 Mechanical Properties

H_K (10^7Pa)	416
F_A	90
E (10^7Pa)	6217
G (10^7Pa)	2514
μ	0.237
B (10^{-12}/Pa)	

其他性质 Other Properties

ρ (g/cm^3)	3.56

备注 Remarks

CDGM

H-BaF8	626391	n_d = 1.626040	υ_d = 39.07	$n_F - n_C$ = 0.016023
		n_e = 1.629837	υ_e = 38.79	$n_{F'} - n_{C'}$ = 0.016236

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	1.590705
$n_{1970.09}$	1970.09	1.595982
$n_{1529.58}$	1529.58	1.601852
$n_{1060.0}$	1060.0	1.608723
n_t	1013.98	1.609593
n_s	852.11	1.613399
n_r	706.52	1.618701
n_C	656.27	1.621319
$n_{C'}$	643.85	1.622061
n_{He-Ne}	632.8	1.622757
n_D	589.29	1.625900
n_d	587.56	1.626040
n_e	546.07	1.629837
n_F	486.13	1.637342
$n_{F'}$	479.99	1.638297
n_g	435.83	1.646653
n_h	404.66	1.654739
n_i	365.01	1.669422
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
K_1	1.18828507E+00
L_1	1.28446962E+02
K_2	1.43848614E+00
L_2	1.01637552E-02
K_3	1.40002385E-01
L_3	5.24582573E-02

折射率温度系数常数 Constants of dn/dt	
D_0	-1.90E-06
D_1	1.29E-08
D_2	-7.27E-11
E_0	8.04E-07
E_1	1.10E-09
λ_{TK}(μm)	0.238

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2375	$P'_{s,t}$	0.2344
$P_{C,s}$	0.4943	$P'_{C',s}$	0.5335
$P_{d,C}$	0.2946	$P'_{d,C'}$	0.2451
$P_{e,d}$	0.2370	$P'_{e,d}$	0.2339
$P_{g,F}$	0.5811	$P'_{g,F'}$	0.5147
$P_{i,h}$	0.9164	$P'_{i,h}$	0.9043

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0015	$\Delta P_{C,s}$	0.0002
$\Delta P_{F,e}$	0.0001	$\Delta P_{g,F}$	0.0019

着色度 Color Code	
λ_{80}/λ_5	385/350
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	570
T_s (℃)	623
$T_{10^{14.5}}$ (℃)	521
$T_{10^{13}}$ (℃)	555
$T_{10^{7.6}}$(℃)	702
$\alpha_{-30/70℃}$(10^{-7}/K)	86
$\alpha_{100/300℃}$(10^{-7}/K)	113
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	2
D_A	1
CR	1
RC(S)	1
RA(S)	1

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.921	0.848
2200	0.941	0.886
2000	0.974	0.948
1800	0.985	0.970
1600	0.995	0.991
1400	0.996	0.993
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.997	0.995
700	0.997	0.995
650	0.996	0.992
600	0.996	0.992
550	0.996	0.992
500	0.994	0.989
480	0.994	0.989
460	0.993	0.987
440	0.991	0.983
420	0.989	0.978
400	0.979	0.958
390	0.961	0.924
380	0.923	0.852
370	0.816	0.666
360	0.544	0.296
350	0.145	0.021
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	487
F_A	136
E (10^7Pa)	7947
G (10^7Pa)	3185
μ	0.247
B (10^{-12}/Pa)	2.75

其他性质 Other Properties	
ρ (g/cm^3)	2.96

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	0.4	1.1	1.5	1.8	2.3	3.3
-20～0	0.9	1.5	1.7	1.9	2.3	3.3
0～20	0.9	1.7	2.0	2.2	3.0	3.5
20～40	0.9	1.7	2.1	2.1	3.0	3.8
40～60	1.0	1.8	2.1	2.6	3.2	4.0
60～80	1.1	1.8	2.1	2.5	3.2	4.1
80～100						
100～120						
120～140						

H-ZBaF1	622532	n_d = 1.62230	υ_d = 53.17	$n_F - n_C$ = 0.011704
		n_e = 1.62508	υ_e = 52.88	$n_{F'} - n_{C'}$ = 0.011821

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.60954
n_s	852.11	1.61262
n_r	706.52	1.61678
n_C	656.27	1.61877
$n_{C'}$	643.85	1.61933
n_{He-Ne}	632.8	1.61985
n_D	589.29	1.62219
n_d	587.56	1.62230
n_e	546.07	1.62508
n_F	486.13	1.63047
$n_{F'}$	479.99	1.63115
n_g	435.83	1.63698
n_h	404.66	1.64245
n_i	365.01	1.65178
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

A_0	2.5794300E+00
A_1	-7.5775305E-03
A_2	2.0178605E-02
A_3	-8.4583280E-04
A_4	1.7812694E-04
A_5	-9.1923266E-06

折射率温度系数常数 Constants of dn/dt

D_0	3.71E-06
D_1	2.12E-08
D_2	-1.14E-10
E_0	4.62E-07
E_1	6.87E-11
λ_{TK}(μm)	0.246

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2632	$P'_{s,t}$	0.2606
$P_{C,s}$	0.5255	$P'_{C',s}$	0.5676
$P_{d,C}$	0.3016	$P'_{d,C'}$	0.2512
$P_{e,d}$	0.2375	$P'_{e,d}$	0.2352
$P_{g,F}$	0.5562	$P'_{g,F'}$	0.4932
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	-0.0082	$\Delta P_{C,s}$	-0.0020
$\Delta P_{F,e}$	-0.0001	$\Delta P_{g,F}$	0.0011

着色度 Color Code

λ_{80}/λ_5	370/335
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	672
T_s (℃)	719
$T_{10^{14.5}}$ (℃)	606
$T_{10^{13}}$ (℃)	648
$T_{10^{7.6}}$(℃)	802
$\alpha_{-30/70℃}$(10^{-7}/K)	60
$\alpha_{100/300℃}$(10^{-7}/K)	72
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	4
CR	
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.928	0.860
2200	0.955	0.913
2000	0.986	0.972
1800	0.992	0.984
1600	0.997	0.993
1400	0.994	0.989
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.996
700	0.997	0.995
650	0.997	0.995
600	0.997	0.994
550	0.997	0.995
500	0.997	0.994
480	0.996	0.993
460	0.995	0.991
440	0.995	0.990
420	0.994	0.988
400	0.990	0.981
390	0.986	0.973
380	0.976	0.952
370	0.954	0.910
360	0.900	0.810
350	0.771	0.595
340	0.491	0.241
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties

H_K (10^7Pa)	562
F_A	129
E (10^7Pa)	8044
G (10^7Pa)	3177
μ	0.266
B (10^{-12}/Pa)	

其他性质 Other Properties

ρ (g/cm^3)	3.57

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	2.9	3.2	3.5	3.6	3.8	4.5
-20～0	3.1	3.6	3.9	4.1	4.3	4.9
0～20	3.4	3.8	4.0	4.2	4.4	5.2
20～40	3.7	4.2	4.3	4.5	4.9	5.5
40～60	3.8	4.2	4.3	4.5	5.2	5.4
60～80	3.9	4.2	4.3	4.4	5.2	5.4
80～100						
100～120						
120～140						

ZBaF2	640483	n_d = 1.63962	υ_d = 48.27	$n_F - n_C$ = 0.013250
		n_e = 1.64277	υ_e = 47.90	$n_{F'} - n_{C'}$ = 0.013418

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	
n_s	852.11	
n_r	706.52	1.63342
n_C	656.27	1.63566
$n_{C'}$	643.85	1.63627
n_{He-Ne}	632.8	1.63686
n_D	589.29	1.63950
n_d	587.56	1.63962
n_e	546.07	1.64277
n_F	486.13	1.64891
$n_{F'}$	479.99	1.64969
n_g	435.83	1.65635
n_h	404.66	1.66268
n_i	365.01	1.67382
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

A_0	2.6324147E+00
A_1	-8.7251762E-03
A_2	1.9124302E-02
A_3	4.4859331E-04
A_4	-1.7473295E-05
A_5	2.8601145E-06

折射率温度系数常数 Constants of dn/dt

D_0	
D_1	
D_2	
E_0	
E_1	
λ_{TK}(μm)	

相对部分色散 Relative Partial Dispersions

$P_{s,t}$		$P'_{s,t}$	
$P_{C,s}$		$P'_{C',s}$	
$P_{d,C}$	0.2989	$P'_{d,C'}$	0.2497
$P_{e,d}$	0.2376	$P'_{e,d}$	0.2346
$P_{g,F}$	0.5615	$P'_{g,F'}$	0.4963
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$		$\Delta P_{C,s}$	
$\Delta P_{F,e}$	0.0001	$\Delta P_{g,F}$	-0.0020

着色度 Color Code

λ_{80}/λ_5	370/330
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	621
T_s (℃)	670
$T_{10}^{14.5}$ (℃)	562
T_{10}^{13} (℃)	601
$T_{10}^{7.6}$(℃)	
$\alpha_{-30/70℃}$(10^{-7}/K)	61
$\alpha_{100/300℃}$(10^{-7}/K)	75
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	3
CR	
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.924	0.854
2200	0.959	0.919
2000	0.985	0.971
1800	0.992	0.985
1600	0.997	0.995
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.998	0.997
950	0.998	0.996
900	0.998	0.996
850	0.997	0.995
800	0.996	0.993
700	0.996	0.992
650	0.995	0.991
600	0.995	0.991
550	0.996	0.992
500	0.995	0.990
480	0.994	0.988
460	0.993	0.986
440	0.992	0.984
420	0.990	0.980
400	0.983	0.967
390	0.975	0.951
380	0.962	0.925
370	0.936	0.877
360	0.880	0.780
350	0.780	0.610
340	0.570	0.330
330	0.240	0.060
320		
310		
300		
290		
280		

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20						
-20～0						
0～20						
20～40						
40～60						
60～80						
80～100						
100～120						
120～140						

机械性质 Mechanical Properties

H_K (10^7Pa)	482
F_A	128
E (10^7Pa)	7731
G (10^7Pa)	3052
μ	0.266
B (10^{-12}/Pa)	

其他性质 Other Properties

ρ (g/cm^3)	3.83

备注 Remarks

CDGM

H-ZBaF3	657511	n_d = 1.65691	υ_d = 51.12	$n_F - n_C$ = 0.012850
		n_e = 1.65996	υ_e = 50.88	$n_{F'} - n_{C'}$ = 0.012970

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.64308
n_s	852.11	1.64641
n_r	706.52	1.65089
n_C	656.27	1.65306
$n_{C'}$	643.85	1.65368
n_{He-Ne}	632.8	1.65424
n_D	589.29	1.65680
n_d	587.56	1.65691
n_e	546.07	1.65996
n_F	486.13	1.66591
$n_{F'}$	479.99	1.66665
n_g	435.83	1.67307
n_h	404.66	1.67911
n_i	365.01	1.68964
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	2.6916522E+00
A_1	-1.0136334E-02
A_2	1.8648124E-02
A_3	3.5804079E-04
A_4	6.1668889E-06
A_5	5.7554576E-07

折射率温度系数常数 Constants of dn/dt	
D_0	-8.53E-07
D_1	1.64E-08
D_2	-5.14E-11
E_0	4.62E-07
E_1	2.21E-10
λ_{TK}(μm)	0.257

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2591	$P'_{s,t}$	0.2567
$P_{C,s}$	0.5175	$P'_{C',s}$	0.5605
$P_{d,C}$	0.2996	$P'_{d,C'}$	0.2490
$P_{e,d}$	0.2374	$P'_{e,d}$	0.2352
$P_{g,F}$	0.5572	$P'_{g,F'}$	0.4950
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	-0.0105	$\Delta P_{C,s}$	-0.0051
$\Delta P_{F,e}$	0.0013	$\Delta P_{g,F}$	-0.0014

着色度 Color Code	
λ_{80}/λ_5	380/340
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	652
T_s (℃)	693
$T_{10}^{14.5}$ (℃)	589
T_{10}^{13} (℃)	626
$T_{10}^{7.6}$(℃)	757
$\alpha_{-30/70℃}$(10^{-7}/K)	75
$\alpha_{100/300℃}$(10^{-7}/K)	90
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	3
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.906	0.820
2200	0.956	0.914
2000	0.982	0.965
1800	0.991	0.982
1600	0.996	0.993
1400	0.997	0.995
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.998	0.996
800	0.997	0.994
700	0.996	0.992
650	0.995	0.991
600	0.995	0.991
550	0.995	0.991
500	0.994	0.988
480	0.992	0.985
460	0.991	0.982
440	0.989	0.979
420	0.987	0.974
400	0.977	0.954
390	0.963	0.928
380	0.938	0.880
370	0.880	0.780
360	0.760	0.580
350	0.540	0.290
340	0.210	0.050
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	508
F_A	170
E (10^7Pa)	8592
G (10^7Pa)	3359
μ	0.279
B (10^{-12}/Pa)	

其他性质 Other Properties	
ρ (g/cm^3)	3.77

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	0.9	1.4	1.7	1.9	2.5	2.7
-20～0	0.9	1.4	1.7	1.9	2.4	2.7
0～20	1.3	1.7	2.0	2.1	2.4	3.1
20～40	1.4	1.8	2.1	2.3	2.6	3.4
40～60	1.5	2.0	2.1	2.3	2.9	3.3
60～80	1.5	2.0	2.2	2.3	3.0	3.4
80～100						
100～120						
120～140						

H-ZBaF4	664355	n_d = 1.664260	υ_d = 35.48	$n_F - n_C$ = 0.018720
		n_e = 1.668690	υ_e = 35.22	$n_{F'} - n_{C'}$ = 0.018987

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	1.624962
$n_{1970.09}$	1970.09	1.630561
$n_{1529.58}$	1529.58	1.636844
$n_{1060.0}$	1060.0	1.644393
n_t	1013.98	1.645369
n_s	852.11	1.649677
n_r	706.52	1.655756
n_C	656.27	1.658780
$n_{C'}$	643.85	1.659639
n_{He-Ne}	632.8	1.660446
n_D	589.29	1.664097
n_d	587.56	1.664260
n_e	546.07	1.668690
n_F	486.13	1.677500
$n_{F'}$	479.99	1.678626
n_g	435.83	1.688535
n_h	404.66	1.698223
n_i	365.01	1.716106
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

K_1	1.51466661E-01
L_1	5.71831045E-02
K_2	1.54020133E+00
L_2	1.11587138E-02
K_3	1.18737385E+00
L_3	1.20128948E+02

折射率温度系数常数 Constants of dn/dt

D_0	3.08E-07
D_1	1.96E-08
D_2	-1.32E-10
E_0	7.30E-07
E_1	5.23E-10
λ_{TK}(μm)	0.276

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2301	$P'_{s,t}$	0.2269
$P_{C,s}$	0.4863	$P'_{C',s}$	0.5247
$P_{d,C}$	0.2927	$P'_{d,C'}$	0.2434
$P_{e,d}$	0.2366	$P'_{e,d}$	0.2333
$P_{g,F}$	0.5895	$P'_{g,F'}$	0.5219
$P_{i,h}$	0.9553	$P'_{i,h}$	0.9419

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	0.0030	$\Delta P_{C,s}$	0.0007
$\Delta P_{F,e}$	0.0004	$\Delta P_{g,F}$	0.0042

着色度 Color Code

λ_{80}/λ_5	395/360
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	605
T_s (℃)	653
$T_{10^{14.5}}$ (℃)	541
$T_{10^{13}}$ (℃)	577
$T_{10^{7.6}}$(℃)	724
$\alpha_{-30/70℃}$(10^{-7}/K)	79
$\alpha_{100/300℃}$(10^{-7}/K)	95
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	1
CR	1
RC(S)	1
RA(S)	1

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.931	0.866
2200	0.947	0.897
2000	0.978	0.957
1800	0.987	0.973
1600	0.995	0.991
1400	0.996	0.992
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.996
700	0.997	0.995
650	0.997	0.995
600	0.998	0.996
550	0.998	0.996
500	0.997	0.994
480	0.996	0.993
460	0.995	0.991
440	0.992	0.985
420	0.988	0.976
400	0.969	0.939
390	0.942	0.888
380	0.876	0.768
370	0.708	0.501
360	0.342	0.117
350		
340		
330		
320		
310		
300		
290		
280		

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	0.9	1.8	2.1	2.6	3.2	3.9
-20～0	1.9	2.4	2.8	3.1	4.0	4.8
0～20	2.0	2.5	3.0	3.2	4.1	5.0
20～40	2.2	2.9	3.2	3.7	4.6	5.4
40～60	2.2	3.0	3.2	3.7	4.6	5.6
60～80	2.2	3.1	3.4	3.7	4.7	5.7
80～100						
100～120						
120～140						

机械性质 Mechanical Properties

H_K (10^7Pa)	602
F_A	180
E (10^7Pa)	8553
G (10^7Pa)	3423
μ	0.249
B (10^{-12}/Pa)	2.80

其他性质 Other Properties

ρ (g/cm^3)	3.11

备注 Remarks

CDGM

H-ZBaF5	671473	n_d = 1.671030	υ_d = 47.29	$n_F - n_C$ = 0.014190
		n_e = 1.674404	υ_e = 47.00	$n_{F'} - n_{C'}$ = 0.014350

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	1.638014
$n_{1970.09}$	1970.09	1.643084
$n_{1529.58}$	1529.58	1.648727
$n_{1060.0}$	1060.0	1.655242
n_t	1013.98	1.656055
n_s	852.11	1.659581
n_r	706.52	1.664425
n_C	656.27	1.666794
$n_{C'}$	643.85	1.667463
n_{He-Ne}	632.8	1.668089
n_D	589.29	1.670905
n_d	587.56	1.671030
n_e	546.07	1.674404
n_F	486.13	1.680984
$n_{F'}$	479.99	1.681813
n_g	435.83	1.688975
n_h	404.66	1.695743
n_i	365.01	1.707578
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
K_1	2.65135611E-01
L_1	3.42928637E-02
K_2	1.46645391E+00
L_2	7.99326644E-03
K_3	1.68212208E+00
L_3	1.79124162E+02

折射率温度系数常数 Constants of dn/dt	
D_0	3.26E-06
D_1	1.49E-08
D_2	-2.95E-11
E_0	6.99E-07
E_1	6.95E-10
λ_{TK}(μm)	0.209

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2485	$P'_{s,t}$	0.2457
$P_{C,s}$	0.5083	$P'_{C',s}$	0.5493
$P_{d,C}$	0.2985	$P'_{d,C'}$	0.2486
$P_{e,d}$	0.2378	$P'_{e,d}$	0.2351
$P_{g,F}$	0.5631	$P'_{g,F'}$	0.4991
$P_{i,h}$	0.8340	$P'_{i,h}$	0.8247

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	-0.0123	$\Delta P_{C,s}$	-0.0052
$\Delta P_{F,e}$	-0.0001	$\Delta P_{g,F}$	-0.0020

着色度 Color Code	
λ_{80}/λ_5	375/340
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	583
T_s (℃)	652
$T_{10^{14.5}}$ (℃)	540
$T_{10^{13}}$ (℃)	580
$T_{10^{7.6}}$(℃)	728
$\alpha_{-30/70℃}$(10^{-7}/K)	68
$\alpha_{100/300℃}$(10^{-7}/K)	85
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	2
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.943	0.889
2200	0.971	0.942
2000	0.986	0.972
1800	0.992	0.984
1600	0.998	0.997
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.998	0.997
850	0.998	0.996
800	0.995	0.991
700	0.995	0.990
650	0.995	0.990
600	0.994	0.989
550	0.994	0.989
500	0.992	0.985
480	0.991	0.983
460	0.990	0.980
440	0.988	0.976
420	0.985	0.971
400	0.976	0.953
390	0.964	0.930
380	0.941	0.886
370	0.890	0.800
360	0.790	0.630
350	0.580	0.340
340	0.230	0.060
330		
320		
310		
300		
290		
280		

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	3.3	4.0	4.2	4.4	4.9	5.5
-40～-20	3.3	4.0	4.2	4.5	5.0	5.6
-20～0	3.5	4.1	4.3	4.5	5.1	5.7
0～20	3.6	4.2	4.5	4.7	5.3	5.8
20～40	3.7	4.4	4.6	4.9	5.5	6.2
40～60	3.8	4.4	4.8	5.2	5.7	6.4
60～80	3.9	4.7	4.9	5.3	5.8	6.5
80～100	3.9	4.7	5.0	5.3	5.9	6.6
100～120	4.1	4.9	5.1	5.4	6.1	6.8
120～140	4.3	5.0	5.4	5.7	6.4	7.2

机械性质 Mechanical Properties	
H_K (10^7Pa)	626
F_A	150
E (10^7Pa)	9696
G (10^7Pa)	3807
μ	0.273
B (10^{-12}/Pa)	

其他性质 Other Properties	
ρ (g/cm^3)	3.58

备注 Remarks

CDGM

H-ZBaF16	667484	n_d = 1.666720	υ_d = 48.42	$n_F - n_C$ = 0.013769
		n_e = 1.669995	υ_e = 48.13	$n_{F'} - n_{C'}$ = 0.013921

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	1.634308
$n_{1970.09}$	1970.09	1.639354
$n_{1529.58}$	1529.58	1.644932
$n_{1060.0}$	1060.0	1.651329
n_t	1013.98	1.652124
n_s	852.11	1.655571
n_r	706.52	1.660295
n_C	656.27	1.662602
$n_{C'}$	643.85	1.663252
n_{He-Ne}	632.8	1.663862
n_D	589.29	1.666598
n_d	587.56	1.666720
n_e	546.07	1.669995
n_F	486.13	1.676371
$n_{F'}$	479.99	1.677173
n_g	435.83	1.684091
n_h	404.66	1.690614
n_i	365.01	1.701988
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

K_1	1.82247640E-01
L_1	3.68484589E-02
K_2	1.53664805E+00
L_2	8.85647420E-03
K_3	1.23072170E+00
L_3	1.34124694E+02

折射率温度系数常数 Constants of dn/dt

D_0	2.86E-06
D_1	1.56E-08
D_2	-3.67E-11
E_0	7.03E-07
E_1	3.95E-10
λ_{TK}(μm)	0.198

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2503	$P'_{s,t}$	0.2476
$P_{C,s}$	0.5106	$P'_{C',s}$	0.5518
$P_{d,C}$	0.2991	$P'_{d,C'}$	0.2491
$P_{e,d}$	0.2379	$P'_{e,d}$	0.2353
$P_{g,F}$	0.5607	$P'_{g,F'}$	0.4969
$P_{i,h}$	0.8261	$P'_{i,h}$	0.8170

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	-0.0134	$\Delta P_{C,s}$	-0.0056
$\Delta P_{F,e}$	-0.0001	$\Delta P_{g,F}$	-0.0026

着色度 Color Code

λ_{80}/λ_5	370/330
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	589
T_s (℃)	644
$T_{10^{14.5}}$ (℃)	536
$T_{10^{13}}$ (℃)	576
$T_{10^{7.6}}$(℃)	724
$\alpha_{-30/70℃}$(10^{-7}/K)	71
$\alpha_{100/300℃}$(10^{-7}/K)	88
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	3
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.943	0.890
2200	0.971	0.943
2000	0.986	0.973
1800	0.992	0.985
1600	0.998	0.996
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.998	0.996
650	0.997	0.995
600	0.997	0.995
550	0.997	0.995
500	0.996	0.992
480	0.994	0.989
460	0.992	0.985
440	0.991	0.982
420	0.989	0.978
400	0.980	0.960
390	0.969	0.938
380	0.948	0.898
370	0.904	0.817
360	0.810	0.650
350	0.620	0.390
340	0.320	0.100
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties

H_K (10^7Pa)	577
F_A	163
E (10^7Pa)	7648
G (10^7Pa)	3000
μ	0.275
B (10^{-12}/Pa)	

其他性质 Other Properties

ρ (g/cm^3)	3.59

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	3.2	3.8	3.9	4.3	4.8	5.3
-40～-20	3.2	3.8	4.0	4.3	4.8	5.3
-20～0	3.2	3.8	4.1	4.3	4.8	5.4
0～20	3.2	3.9	4.1	4.4	4.9	5.5
20～40	3.4	4.2	4.3	4.6	5.2	5.8
40～60	3.5	4.3	4.5	4.8	5.3	5.9
60～80	3.7	4.4	4.7	5.0	5.6	6.1
80～100	3.9	4.4	4.7	5.0	5.6	6.2
100～120	3.9	4.4	4.7	5.0	5.6	6.3
120～140	3.9	4.4	4.8	5.0	5.6	6.3

ZBaF17	668419	n_d = 1.66755	υ_d = 41.93	$n_F - n_C$ = 0.015921
		n_e = 1.67133	υ_e = 41.64	$n_{F'} - n_{C'}$ = 0.016123

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.65116
n_s	852.11	1.65493
n_r	706.52	1.66023
n_C	656.27	1.66284
$n_{C'}$	643.85	1.66358
n_{He-Ne}	632.8	1.66428
n_D	589.29	1.66741
n_d	587.56	1.66755
n_e	546.07	1.67133
n_F	486.13	1.67876
$n_{F'}$	479.99	1.67970
n_g	435.83	1.68788
n_h	404.66	1.69574
n_i	365.01	1.70978
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

A_0	2.7114815E+00
A_1	-8.3031047E-03
A_2	2.3733195E-02
A_3	2.8197729E-04
A_4	3.9409899E-05
A_5	7.1756265E-07

折射率温度系数常数 Constants of dn/dt

D_0	3.29E-08
D_1	1.54E-08
D_2	-1.58E-11
E_0	7.94E-07
E_1	1.05E-09
λ_{TK}(μm)	0.240

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2368	$P'_{s,t}$	0.2338
$P_{C,s}$	0.4968	$P'_{C',s}$	0.5365
$P_{d,C}$	0.2958	$P'_{d,C'}$	0.2462
$P_{e,d}$	0.2374	$P'_{e,d}$	0.2344
$P_{g,F}$	0.5728	$P'_{g,F'}$	0.5074
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	-0.0102	$\Delta P_{C,s}$	-0.0040
$\Delta P_{F,e}$	0.0001	$\Delta P_{g,F}$	-0.0014

着色度 Color Code

λ_{80}/λ_5	400/350
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	584
T_s (℃)	633
$T_{10}^{14.5}$ (℃)	540
T_{10}^{13} (℃)	582
$T_{10}^{7.6}$(℃)	
$\alpha_{-30/70℃}$(10^{-7}/K)	78
$\alpha_{100/300℃}$(10^{-7}/K)	91
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	2
D_A	3
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.922	0.850
2200	0.954	0.911
2000	0.983	0.967
1800	0.990	0.981
1600	0.996	0.993
1400	0.995	0.990
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.998	0.997
900	0.996	0.993
850	0.994	0.988
800	0.996	0.992
700	0.995	0.990
650	0.995	0.990
600	0.995	0.990
550	0.996	0.992
500	0.994	0.989
480	0.993	0.987
460	0.991	0.983
440	0.989	0.978
420	0.982	0.965
400	0.960	0.922
390	0.931	0.866
380	0.872	0.760
370	0.750	0.570
360	0.510	0.260
350	0.200	0.040
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties

H_K (10^7Pa)	510
F_A	175
E (10^7Pa)	8043
G (10^7Pa)	3198
μ	0.257
B (10^{-12}/Pa)	1.88

其他性质 Other Properties

ρ (g/cm^3)	3.80

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	1.4	2.1	2.8	3.2	3.5	4.4
-20～0	1.9	2.4	2.6	3.0	3.5	4.3
0～20	2.0	2.6	3.0	3.5	4.1	4.8
20～40	2.0	3.0	3.2	3.4	4.2	4.9
40～60	2.2	3.2	3.3	3.5	4.4	5.6
60～80	2.3	3.3	3.7	4.1	4.9	5.7
80～100						
100～120						
120～140						

H-ZBaF20	702412	n_d = 1.70154	υ_d = 41.15	$n_F - n_C$ = 0.017049
		n_e = 1.70559	υ_e = 40.86	$n_{F'} - n_{C'}$ = 0.017270

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.68393
n_s	852.11	1.68801
n_r	706.52	1.69370
n_C	656.27	1.69651
$n_{C'}$	643.85	1.69730
n_{He-Ne}	632.8	1.69804
n_D	589.29	1.70139
n_d	587.56	1.70154
n_e	546.07	1.70559
n_F	486.13	1.71356
$n_{F'}$	479.99	1.71457
n_g	435.83	1.72341
n_h	404.66	1.73190
n_i	365.01	1.74719
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

A_0	2.8208194E+00
A_1	-1.0082365E-02
A_2	2.5508463E-02
A_3	3.2956767E-04
A_4	5.0256538E-05
A_5	6.0043240E-07

折射率温度系数常数 Constants of dn/dt

D_0	3.06E-06
D_1	2.07E-08
D_2	-8.31E-12
E_0	7.29E-07
E_1	-1.31E-10
λ_{TK}(μm)	0.250

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2393	$P'_{s,t}$	0.2362
$P_{C,s}$	0.4986	$P'_{C',s}$	0.5379
$P_{d,C}$	0.2953	$P'_{d,C'}$	0.2457
$P_{e,d}$	0.2372	$P'_{e,d}$	0.2342
$P_{g,F}$	0.5777	$P'_{g,F'}$	0.5119
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	-0.0023	$\Delta P_{C,s}$	-0.0005
$\Delta P_{F,e}$	0.0004	$\Delta P_{g,F}$	0.0021

着色度 Color Code

λ_{80}/λ_5	390/350
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	594
T_s (℃)	657
$T_{10^{14.5}}$ (℃)	550
$T_{10^{13}}$ (℃)	591
$T_{10^{7.6}}$(℃)	736
$\alpha_{-30/70℃}$(10^{-7}/K)	69
$\alpha_{100/300℃}$(10^{-7}/K)	85
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	2
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.931	0.867
2200	0.967	0.933
2000	0.986	0.973
1800	0.992	0.985
1600	0.997	0.994
1400	0.997	0.994
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.999	0.999
650	0.998	0.997
600	0.999	0.998
550	0.999	0.998
500	0.997	0.995
480	0.996	0.992
460	0.994	0.988
440	0.992	0.984
420	0.988	0.977
400	0.977	0.954
390	0.964	0.929
380	0.933	0.871
370	0.860	0.740
360	0.681	0.464
350	0.315	0.099
340		
330		
320		
310		
300		
290		
280		

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	2.7	3.9	4.6	5.0	5.7	6.3
-20～0	2.9	4.1	4.7	4.8	5.6	6.2
0～20	3.6	4.3	4.8	4.9	5.5	6.2
20～40	4.0	4.7	5.0	5.0	5.8	6.9
40～60	4.3	4.6	4.9	5.3	6.0	7.1
60～80	4.5	4.8	5.0	5.3	6.6	7.8
80～100						
100～120						
120～140						

机械性质 Mechanical Properties

H_K (10^7Pa)	594
F_A	170
E (10^7Pa)	9679
G (10^7Pa)	3820
μ	0.267
B (10^{-12}/Pa)	

其他性质 Other Properties

ρ (g/cm^3)	3.64

备注 Remarks

CDGM

H-ZBaF21	723380	n_d = 1.723410	υ_d = 37.99	$n_F - n_C$ = 0.019041
		n_e = 1.727921	υ_e = 37.71	$n_{F'} - n_{C'}$ = 0.019302

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	1.682757
$n_{1970.09}$	1970.09	1.688612
$n_{1529.58}$	1529.58	1.695177
$n_{1060.0}$	1060.0	1.703022
n_t	1013.98	1.704030
n_s	852.11	1.708474
n_r	706.52	1.714717
n_C	656.27	1.717813
$n_{C'}$	643.85	1.718691
n_{He-Ne}	632.8	1.719516
n_D	589.29	1.723243
n_d	587.56	1.723410
n_e	546.07	1.727921
n_F	486.13	1.736854
$n_{F'}$	479.99	1.737993
n_g	435.83	1.747970
n_h	404.66	1.757650
n_i	365.01	1.775298
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

K_1	1.71447483E+00
L_1	1.06695401E-02
K_2	1.72919641E-01
L_2	5.36257488E-02
K_3	1.37586664E+00
L_3	1.27687623E+02

折射率温度系数常数 Constants of dn/dt

D_0	1.42E-06
D_1	1.45E-08
D_2	-2.30E-11
E_0	7.19E-07
E_1	8.37E-10
λ_{TK}(μm)	0.256

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2334	$P'_{s,t}$	0.2302
$P_{C,s}$	0.4905	$P'_{C',s}$	0.5293
$P_{d,C}$	0.2939	$P'_{d,C'}$	0.2445
$P_{e,d}$	0.2369	$P'_{e,d}$	0.2337
$P_{g,F}$	0.5838	$P'_{g,F'}$	0.5169
$P_{i,h}$	0.9268	$P'_{i,h}$	0.9143

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	-0.0014	$\Delta P_{C,s}$	-0.0011
$\Delta P_{F,e}$	0.0003	$\Delta P_{g,F}$	0.0028

着色度 Color Code

λ_{80}/λ_5	400/350
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	607
T_s (℃)	670
$T_{10^{14.5}}$ (℃)	557
$T_{10^{13}}$ (℃)	591
$T_{10^{7.6}}$(℃)	738
$\alpha_{-30/70℃}$(10^{-7}/K)	76
$\alpha_{100/300℃}$(10^{-7}/K)	88
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	2
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.935	0.873
2200	0.968	0.937
2000	0.987	0.974
1800	0.993	0.986
1600	0.997	0.994
1400	0.997	0.994
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.997
700	0.998	0.996
650	0.997	0.994
600	0.997	0.994
550	0.997	0.994
500	0.994	0.988
480	0.992	0.985
460	0.989	0.979
440	0.986	0.973
420	0.980	0.961
400	0.962	0.926
390	0.940	0.883
380	0.889	0.791
370	0.772	0.596
360	0.502	0.252
350	0.141	0.020
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties

H_K (10^7Pa)	585
F_A	171
E (10^7Pa)	10053
G (10^7Pa)	3973
μ	0.266
B (10^{-12}/Pa)	

其他性质 Other Properties

ρ (g/cm^3)	3.62

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	2.4	3.2	3.5	3.7	4.4	5.3
-40～-20	2.5	3.3	3.5	3.8	4.4	5.4
-20～0	2.7	3.3	3.6	3.9	4.8	5.5
0～20	2.9	3.4	3.8	4.2	4.8	5.7
20～40	2.9	3.5	4.0	4.2	5.1	6.0
40～60	3.1	3.8	4.1	4.5	5.4	6.2
60～80	3.1	4.1	4.5	4.8	5.5	6.5
80～100	3.2	4.3	4.6	5.0	5.9	7.1
100～120	3.3	4.3	4.7	5.2	6.0	7.3
120～140	3.3	4.4	4.8	5.2	6.1	7.3

H-ZBaF50	658509	n_d = 1.65844	υ_d = 50.85	$n_F - n_C$ = 0.012948
		n_e = 1.66152	υ_e = 50.57	$n_{F'} - n_{C'}$ = 0.013082

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.64449
n_s	852.11	1.64780
n_r	706.52	1.65235
n_C	656.27	1.65454
$n_{C'}$	643.85	1.65516
n_{He-Ne}	632.8	1.65574
n_D	589.29	1.65832
n_d	587.56	1.65844
n_e	546.07	1.66152
n_F	486.13	1.66749
$n_{F'}$	479.99	1.66824
n_g	435.83	1.67473
n_h	404.66	1.68085
n_i	365.01	1.69151
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

A_0	2.6904519E+00
A_1	-7.3635669E-03
A_2	2.2699213E-02
A_3	-7.9459458E-04
A_4	1.6107512E-04
A_5	-6.9296954E-06

折射率温度系数常数 Constants of dn/dt

D_0	-1.31E-06
D_1	1.42E-08
D_2	-3.27E-11
E_0	5.21E-07
E_1	3.53E-10
λ_{TK}(μm)	0.234

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2556	$P'_{s,t}$	0.2530
$P_{C,s}$	0.5205	$P'_{C',s}$	0.5626
$P_{d,C}$	0.3012	$P'_{d,C'}$	0.2507
$P_{e,d}$	0.2379	$P'_{e,d}$	0.2354
$P_{g,F}$	0.5592	$P'_{g,F'}$	0.4961
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	-0.0097	$\Delta P_{C,s}$	-0.0014
$\Delta P_{F,e}$	-0.0008	$\Delta P_{g,F}$	0.0001

着色度 Color Code

λ_{80}/λ_5	375/340
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	652
T_s (℃)	693
$T_{10}^{14.5}$ (℃)	589
T_{10}^{13} (℃)	626
$T_{10}^{7.6}$(℃)	781
$\alpha_{-30/70℃}$(10^{-7}/K)	75
$\alpha_{100/300℃}$(10^{-7}/K)	90
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	3
CR	2
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.906	0.820
2200	0.956	0.914
2000	0.982	0.965
1800	0.991	0.982
1600	0.996	0.993
1400	0.997	0.995
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.998	0.996
800	0.997	0.994
700	0.996	0.992
650	0.995	0.991
600	0.995	0.991
550	0.995	0.991
500	0.994	0.988
480	0.992	0.985
460	0.991	0.982
440	0.989	0.979
420	0.987	0.974
400	0.977	0.954
390	0.963	0.928
380	0.938	0.880
370	0.880	0.780
360	0.760	0.580
350	0.540	0.290
340	0.210	0.050
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties

H_K (10^7Pa)	508
F_A	156
E (10^7Pa)	8592
G (10^7Pa)	3359
μ	0.279
B (10^{-12}/Pa)	1.71

其他性质 Other Properties

ρ (g/cm^3)	3.77

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	0.9	1.3	1.7	1.9	2.0	2.7
-20～0	1.0	1.4	1.6	1.9	2.2	2.7
0～20	1.0	1.7	1.8	2.0	2.3	3.0
20～40	1.1	1.7	1.8	2.0	2.7	3.1
40～60	1.2	1.7	2.0	2.2	2.8	3.1
60～80	1.4	1.6	1.9	2.3	2.7	3.4
80～100						
100～120						
120～140						

ZBaF51	683445	n_d = 1.68273	υ_d = 44.50	$n_F - n_C$ = 0.015341
		n_e = 1.68637	υ_e = 44.23	$n_{F'} - n_{C'}$ = 0.015519

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.66684
n_s	852.11	1.67046
n_r	706.52	1.67563
n_C	656.27	1.67816
$n_{C'}$	643.85	1.67888
n_{He-Ne}	632.8	1.67955
n_D	589.29	1.68259
n_d	587.56	1.68273
n_e	546.07	1.68637
n_F	486.13	1.69350
$n_{F'}$	479.99	1.69440
n_g	435.83	1.70225
n_h	404.66	1.70974
n_i	365.01	1.72299
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	2.7590164E+00
A_1	-5.8180526E-03
A_2	2.6609946E-02
A_3	-7.5485994E-04
A_4	1.7640459E-04
A_5	-6.7271173E-06

折射率温度系数常数 Constants of dn/dt	
D_0	-1.51E-06
D_1	1.79E-08
D_2	-4.04E-11
E_0	7.85E-07
E_1	6.90E-11
λ_{TK}(μm)	0.221

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2360	$P'_{s,t}$	0.2333
$P_{C,s}$	0.5019	$P'_{C',s}$	0.5426
$P_{d,C}$	0.2978	$P'_{d,C'}$	0.2480
$P_{e,d}$	0.2377	$P'_{e,d}$	0.2349
$P_{g,F}$	0.5703	$P'_{g,F'}$	0.5057
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	-0.0181	$\Delta P_{C,s}$	-0.0050
$\Delta P_{F,e}$	-0.0008	$\Delta P_{g,F}$	0.0004

着色度 Color Code	
λ_{80}/λ_5	380/340
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	601
T_s (℃)	655
$T_{10}^{14.5}$ (℃)	566
T_{10}^{13} (℃)	609
$T_{10}^{7.6}$(℃)	
$\alpha_{-30/70℃}$(10^{-7}/K)	78
$\alpha_{100/300℃}$(10^{-7}/K)	89
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	6
CR	
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.917	0.840
2200	0.954	0.910
2000	0.980	0.960
1800	0.990	0.981
1600	0.998	0.996
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.998	0.997
850	0.999	0.998
800	0.998	0.997
700	0.998	0.996
650	0.997	0.995
600	0.997	0.995
550	0.998	0.996
500	0.997	0.995
480	0.996	0.993
460	0.996	0.992
440	0.994	0.989
420	0.992	0.985
400	0.984	0.968
390	0.974	0.948
380	0.954	0.910
370	0.911	0.830
360	0.810	0.650
350	0.600	0.360
340	0.260	0.070
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	464
F_A	198
E (10^7Pa)	7832
G (10^7Pa)	3054
μ	0.282
B (10^{-12}/Pa)	

其他性质 Other Properties	
ρ (g/cm^3)	4.14

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	0.5	1.6	1.9	2.0	2.7	3.1
-20～0	1.0	1.8	2.0	2.2	2.8	3.6
0～20	1.1	1.8	2.0	2.2	3.1	3.9
20～40	1.2	2.0	2.2	2.4	3.3	4.0
40～60	1.4	2.1	2.5	2.9	3.5	4.0
60～80	1.5	2.3	2.6	3.0	3.5	4.3
80～100						
100～120						
120～140						

CDGM

H-ZBaF52	670472	n_d = 1.670030	υ_d = 47.20	$n_F - n_C$ = 0.014197
		n_e = 1.673406	υ_e = 46.90	$n_{F'} - n_{C'}$ = 0.014357

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	1.636851
$n_{1970.09}$	1970.09	1.641991
$n_{1529.58}$	1529.58	1.647684
$n_{1060.0}$	1060.0	1.654226
n_t	1013.98	1.655041
n_s	852.11	1.658573
n_r	706.52	1.663422
n_C	656.27	1.665792
$n_{C'}$	643.85	1.666461
n_{He-Ne}	632.8	1.667088
n_D	589.29	1.669905
n_d	587.56	1.670030
n_e	546.07	1.673406
n_F	486.13	1.679989
$n_{F'}$	479.99	1.680818
n_g	435.83	1.687986
n_h	404.66	1.694764
n_i	365.01	1.706632
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
K_1	1.51688354E+00
L_1	8.57006565E-03
K_2	2.11371553E-01
L_2	3.70160061E-02
K_3	1.35763017E+00
L_3	1.44349229E+02

折射率温度系数常数 Constants of dn/dt	
D_0	3.40E-06
D_1	1.49E-08
D_2	-3.46E-11
E_0	6.98E-07
E_1	6.04E-10
λ_{TK}(μm)	0.212

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2488	$P'_{s,t}$	0.2460
$P_{C,s}$	0.5085	$P'_{C',s}$	0.5494
$P_{d,C}$	0.2985	$P'_{d,C'}$	0.2486
$P_{e,d}$	0.2378	$P'_{e,d}$	0.2351
$P_{g,F}$	0.5633	$P'_{g,F'}$	0.4993
$P_{i,h}$	0.8360	$P'_{i,h}$	0.8266

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	-0.0114	$\Delta P_{C,s}$	-0.0048
$\Delta P_{F,e}$	-0.0002	$\Delta P_{g,F}$	-0.0020

着色度 Color Code	
λ_{80}/λ_5	380/340
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	583
T_s (℃)	652
$T_{10^{14.5}}$ (℃)	539
$T_{10^{13}}$ (℃)	580
$T_{10^{7.6}}$(℃)	728
$\alpha_{-30/70℃}$(10^{-7}/K)	70
$\alpha_{100/300℃}$(10^{-7}/K)	88
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	2
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.941	0.886
2200	0.971	0.942
2000	0.986	0.972
1800	0.991	0.982
1600	0.998	0.996
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.998	0.997
850	0.998	0.996
800	0.995	0.991
700	0.995	0.990
650	0.995	0.990
600	0.994	0.989
550	0.994	0.989
500	0.992	0.985
480	0.991	0.983
460	0.990	0.980
440	0.988	0.976
420	0.985	0.971
400	0.976	0.953
390	0.964	0.930
380	0.941	0.886
370	0.890	0.800
360	0.790	0.630
350	0.580	0.340
340	0.230	0.060
330		
320		
310		
300		
290		
280		

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	3.4	4.0	4.3	4.5	5.1	5.6
-40～-20	3.4	4.1	4.3	4.6	5.1	5.7
-20～0	3.5	4.2	4.4	4.7	5.1	5.8
0～20	3.5	4.3	4.6	4.8	5.2	5.9
20～40	3.7	4.5	4.7	5.0	5.6	6.2
40～60	3.9	4.5	4.9	5.2	5.8	6.4
60～80	4.0	4.7	5.0	5.2	5.8	6.6
80～100	4.1	4.8	5.0	5.2	5.9	6.7
100～120	4.1	4.8	5.1	5.4	6.1	6.9
120～140	4.2	4.9	5.2	5.6	6.3	7.1

机械性质 Mechanical Properties	
H_K (10^7Pa)	626
F_A	159
E (10^7Pa)	9448
G (10^7Pa)	3704
μ	0.275
B (10^{-12}/Pa)	2.09

其他性质 Other Properties	
ρ (g/cm^3)	3.57

备注 Remarks

CDGM

H-ZF1	648338	n_d = 1.64769	υ_d = 33.84	$n_F - n_C$ = 0.019140
		n_e = 1.65222	υ_e = 33.58	$n_{F'} - n_{C'}$ = 0.019421

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.62849
n_s	852.11	1.63284
n_r	706.52	1.63902
n_C	656.27	1.64209
$n_{C'}$	643.85	1.64298
n_{He-Ne}	632.8	1.64380
n_D	589.29	1.64752
n_d	587.56	1.64769
n_e	546.07	1.65222
n_F	486.13	1.66124
$n_{F'}$	479.99	1.66240
n_g	435.83	1.67257
n_h	404.66	1.68257
n_i	365.01	1.70122
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	2.6361870E+00
A_1	-9.7034146E-03
A_2	2.5550262E-02
A_3	1.0061041E-03
A_4	-4.2521904E-05
A_5	9.0637539E-06

折射率温度系数常数 Constants of dn/dt	
D_0	-4.73E-06
D_1	1.27E-08
D_2	-8.17E-11
E_0	8.61E-07
E_1	9.43E-10
λ_{TK}(μm)	0.263

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2273	$P'_{s,t}$	0.2240
$P_{C,s}$	0.4833	$P'_{C',s}$	0.5221
$P_{d,C}$	0.2926	$P'_{d,C'}$	0.2425
$P_{e,d}$	0.2367	$P'_{e,d}$	0.2333
$P_{g,F}$	0.5920	$P'_{g,F'}$	0.5237
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0049	$\Delta P_{C,s}$	0.0016
$\Delta P_{F,e}$	0.0002	$\Delta P_{g,F}$	0.0039

着色度 Color Code	
λ_{80}/λ_5	390/360
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	546
T_s (℃)	579
$T_{10}^{14.5}$ (℃)	480
T_{10}^{13} (℃)	516
$T_{10}^{7.6}$(℃)	644
$\alpha_{-30/70℃}$(10^{-7}/K)	91
$\alpha_{100/300℃}$(10^{-7}/K)	117
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	2
D_A	1
CR	1
RC(S)	2
RA(S)	1

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.917	0.841
2200	0.940	0.884
2000	0.972	0.944
1800	0.984	0.969
1600	0.995	0.991
1400	0.996	0.993
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.998	0.997
650	0.998	0.997
600	0.999	0.998
550	0.998	0.997
500	0.997	0.995
480	0.996	0.992
460	0.995	0.990
440	0.994	0.988
420	0.991	0.983
400	0.981	0.962
390	0.961	0.923
380	0.908	0.824
370	0.744	0.553
360	0.361	0.130
350		
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	507
F_A	96
E (10^7Pa)	8050
G (10^7Pa)	3228
μ	0.247
B (10^{-12}/Pa)	

其他性质 Other Properties	
ρ (g/cm^3)	2.73

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	-0.8	-0.2	0.0	0.2	1.2	2.2
-20～0	-0.7	0.1	0.5	1.1	1.4	2.5
0～20	-0.6	0.5	0.8	1.0	1.6	2.8
20～40	-0.5	0.5	0.8	1.0	1.9	2.8
40～60	-0.4	0.5	0.7	1.0	2.2	3.2
60～80	-0.2	0.5	0.7	1.1	2.4	3.4
80～100						
100～120						
120～140						

CDGM

H-ZF1A	648339	n_d = 1.647690	υ_d = 33.89	$n_F - n_C$ = 0.019113
		n_e = 1.652209	υ_e = 33.63	$n_{F'} - n_{C'}$ = 0.019394

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	1.607271
$n_{1970.09}$	1970.09	1.613141
$n_{1529.58}$	1529.58	1.619690
$n_{1060.0}$	1060.0	1.627464
n_t	1013.98	1.628461
n_s	852.11	1.632852
n_r	706.52	1.639034
n_C	656.27	1.642110
$n_{C'}$	643.85	1.642984
n_{He-Ne}	632.8	1.643805
n_D	589.29	1.647524
n_d	587.56	1.647690
n_e	546.07	1.652209
n_F	486.13	1.661223
$n_{F'}$	479.99	1.662378
n_g	435.83	1.672573
n_h	404.66	1.682600
n_i	365.01	1.701284
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
K_1	1.57527094E-01
L_1	5.85466694E-02
K_2	1.47922850E+00
L_2	1.11805229E-02
K_3	1.18166385E+00
L_3	1.15153843E+02

折射率温度系数常数 Constants of dn/dt	
D_0	-2.07E-06
D_1	1.38E-08
D_2	-4.21E-11
E_0	7.78E-07
E_1	1.01E-09
λ_{TK}(μm)	0.278

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2297	$P'_{s,t}$	0.2264
$P_{C,s}$	0.4844	$P'_{C',s}$	0.5224
$P_{d,C}$	0.2919	$P'_{d,C'}$	0.2427
$P_{e,d}$	0.2364	$P'_{e,d}$	0.2330
$P_{g,F}$	0.5938	$P'_{g,F'}$	0.5257
$P_{i,h}$	0.9776	$P'_{i,h}$	0.9634

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0082	$\Delta P_{C,s}$	0.0025
$\Delta P_{F,e}$	0.0005	$\Delta P_{g,F}$	0.0058

着色度 Color Code	
λ_{80}/λ_5	390/360
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	601
T_s (℃)	625
$T_{10^{14.5}}$ (℃)	537
$T_{10^{13}}$ (℃)	572
$T_{10^{7.6}}$(℃)	694
$\alpha_{-30/70℃}$(10^{-7}/K)	85
$\alpha_{100/300℃}$(10^{-7}/K)	103
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	1
CR	1
RC(S)	1
RA(S)	1

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.923	0.852
2200	0.943	0.889
2000	0.975	0.950
1800	0.986	0.972
1600	0.995	0.991
1400	0.997	0.995
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.996
700	0.998	0.996
650	0.997	0.995
600	0.997	0.994
550	0.996	0.993
500	0.995	0.990
480	0.994	0.988
460	0.993	0.986
440	0.990	0.981
420	0.987	0.974
400	0.972	0.944
390	0.944	0.891
380	0.872	0.761
370	0.667	0.445
360	0.251	0.063
350		
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	523
F_A	147
E (10^7Pa)	8262
G (10^7Pa)	3338
μ	0.237
B (10^{-12}/Pa)	2.72

其他性质 Other Properties	
ρ (g/cm^3)	2.79

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	0.5	1.2	1.3	1.7	2.3	3.4
-40～-20	0.7	1.4	1.5	1.9	2.5	3.7
-20～0	0.8	1.4	1.7	2.0	2.8	3.8
0～20	0.9	1.5	1.9	2.2	3.2	3.9
20～40	0.9	1.7	2.0	2.4	3.4	4.3
40～60	1.0	1.9	2.1	2.6	3.5	4.6
60～80	1.0	2.0	2.2	2.8	3.7	4.8
80～100	1.1	2.0	2.4	2.8	3.8	5.0
100～120	1.1	2.1	2.5	2.9	3.8	5.2
120～140	1.2	2.1	2.5	3.0	3.9	5.3

CDGM

ZF1	648338	n_d = 1.64769	υ_d = 33.84	$n_F - n_C$ = 0.019142
		n_e = 1.65223	υ_e = 33.59	$n_{F'} - n_{C'}$ = 0.019419

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	
n_s	852.11	
n_r	706.52	1.63902
n_C	656.27	1.64210
$n_{C'}$	643.85	1.64297
n_{He-Ne}	632.8	1.64380
n_D	589.29	1.64753
n_d	587.56	1.64769
n_e	546.07	1.65223
n_F	486.13	1.66124
$n_{F'}$	479.99	1.66239
n_g	435.83	1.67251
n_h	404.66	1.68236
n_i	365.01	1.70035
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

A_0	2.6356161E+00
A_1	-8.8396420E-03
A_2	2.5644781E-02
A_3	9.6522374E-04
A_4	-1.8304798E-05
A_5	5.5563517E-06

折射率温度系数常数 Constants of dn/dt

D_0	
D_1	
D_2	
E_0	
E_1	
λ_{TK}(μm)	

相对部分色散 Relative Partial Dispersions

$P_{s,t}$		$P'_{s,t}$	
$P_{C,s}$		$P'_{C',s}$	
$P_{d,C}$	0.2923	$P'_{d,C'}$	0.2430
$P_{e,d}$	0.2368	$P'_{e,d}$	0.2334
$P_{g,F}$	0.5887	$P'_{g,F'}$	0.5210
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$		$\Delta P_{C,s}$	
$\Delta P_{F,e}$	-0.0001	$\Delta P_{g,F}$	0.0006

着色度 Color Code

λ_{80}/λ_5	360/330
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	430
T_s (℃)	480
$T_{10}^{14.5}$ (℃)	425
T_{10}^{13} (℃)	437
$T_{10}^{7.6}$(℃)	571
$\alpha_{-30/70℃}$(10^{-7}/K)	89
$\alpha_{100/300℃}$(10^{-7}/K)	104
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	2
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.949	0.900
2200	0.960	0.922
2000	0.970	0.941
1800	0.988	0.976
1600	0.996	0.992
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.999	0.998
650	0.999	0.998
600	0.999	0.998
550	0.999	0.998
500	0.998	0.997
480	0.998	0.996
460	0.997	0.994
440	0.996	0.992
420	0.994	0.989
400	0.990	0.981
390	0.984	0.969
380	0.976	0.953
370	0.963	0.928
360	0.930	0.870
350	0.850	0.730
340	0.660	0.430
330	0.280	0.080
320		
310		
300		
290		
280		

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20						
-20～0						
0～20						
20～40						
40～60						
60～80						
80～100						
100～120						
120～140						

机械性质 Mechanical Properties

H_K (10^7Pa)	410
F_A	97
E (10^7Pa)	5330
G (10^7Pa)	2160
μ	0.235
B (10^{-12}/Pa)	

其他性质 Other Properties

ρ (g/cm^3)	3.84

备注 Remarks

CDGM

H-ZF2	673322	n_d = 1.672700	υ_d = 32.17	$n_F - n_C$ = 0.020910
		n_e = 1.677640	υ_e = 31.92	$n_{F'} - n_{C'}$ = 0.021230

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	1.630241
$n_{1970.09}$	1970.09	1.636125
$n_{1529.58}$	1529.58	1.642757
$n_{1060.0}$	1060.0	1.650842
n_t	1013.98	1.651899
n_s	852.11	1.656595
n_r	706.52	1.663276
n_C	656.27	1.666617
$n_{C'}$	643.85	1.667568
n_{He-Ne}	632.8	1.668463
n_D	589.29	1.672518
n_d	587.56	1.672700
n_e	546.07	1.677640
n_F	486.13	1.687527
$n_{F'}$	479.99	1.688798
n_g	435.83	1.700036
n_h	404.66	1.711143
n_i	365.01	1.732003
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

K_1	1.67643380E-01
L_1	6.05177711E-02
K_2	1.54335076E+00
L_2	1.18524273E-02
K_3	1.17313123E+00
L_3	1.13671100E+02

折射率温度系数常数 Constants of dn/dt

D_0	-3.63E-06
D_1	1.35E-08
D_2	-5.31E-11
E_0	8.33E-07
E_1	8.40E-10
λ_{TK}(μm)	0.278

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2246	$P'_{s,t}$	0.2212
$P_{C,s}$	0.4793	$P'_{C',s}$	0.5169
$P_{d,C}$	0.2909	$P'_{d,C'}$	0.2417
$P_{e,d}$	0.2363	$P'_{e,d}$	0.2327
$P_{g,F}$	0.5982	$P'_{g,F'}$	0.5293
$P_{i,h}$	0.9976	$P'_{i,h}$	0.9826

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	0.0061	$\Delta P_{C,s}$	0.0015
$\Delta P_{F,e}$	0.0008	$\Delta P_{g,F}$	0.0073

着色度 Color Code

λ_{80}/λ_5	395/360
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	589
T_s (℃)	629
$T_{10^{14.5}}$ (℃)	526
$T_{10^{13}}$ (℃)	563
$T_{10^{7.6}}$(℃)	691
$\alpha_{-30/70℃}$(10^{-7}/K)	85
$\alpha_{100/300℃}$(10^{-7}/K)	106
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	1
CR	1
RC(S)	1
RA(S)	1

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.922	0.851
2200	0.942	0.888
2000	0.974	0.948
1800	0.985	0.970
1600	0.995	0.990
1400	0.996	0.993
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.997	0.994
700	0.996	0.993
650	0.996	0.993
600	0.996	0.993
550	0.996	0.993
500	0.994	0.989
480	0.993	0.987
460	0.991	0.983
440	0.988	0.977
420	0.985	0.970
400	0.967	0.933
390	0.935	0.874
380	0.850	0.723
370	0.623	0.388
360	0.202	0.041
350		
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties

H_K (10^7Pa)	552
F_A	143
E (10^7Pa)	8321
G (10^7Pa)	3352
μ	0.241
B (10^{-12}/Pa)	

其他性质 Other Properties

ρ (g/cm^3)	2.90

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	-0.3	0.5	0.8	1.1	1.8	3.0
-40～-20	-0.3	0.5	0.9	1.2	2.2	3.0
-20～0	-0.2	0.7	1.0	1.4	2.3	3.2
0～20	0.1	0.9	1.3	1.6	2.5	3.6
20～40	0.2	1.1	1.4	1.8	2.6	3.9
40～60	0.2	1.1	1.5	1.9	2.8	4.0
60～80	0.2	1.1	1.5	1.9	2.9	4.2
80～100	0.1	1.1	1.5	1.9	3.0	4.3
100～120	0.0	1.1	1.5	1.9	3.1	4.5
120～140	0.0	1.1	1.6	2.0	3.2	4.7

ZF2	673322	n_d = 1.67270	υ_d = 32.17	$n_F - n_C$ = 0.020909
		n_e = 1.67765	υ_e = 31.93	$n_{F'} - n_{C'}$ = 0.021221

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.65206
n_s	852.11	1.65662
n_r	706.52	1.66326
n_C	656.27	1.66661
$n_{C'}$	643.85	1.66756
n_{He-Ne}	632.8	1.66846
n_D	589.29	1.67252
n_d	587.56	1.67270
n_e	546.07	1.67765
n_F	486.13	1.68752
$n_{F'}$	479.99	1.68878
n_g	435.83	1.69985
n_h	404.66	1.71066
n_i	365.01	1.73049
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	2.7082044E+00
A_1	-7.9417116E-03
A_2	2.9222478E-02
A_3	8.8493162E-04
A_4	6.6862056E-07
A_5	5.6590277E-06

折射率温度系数常数 Constants of dn/dt	
D_0	7.92E-07
D_1	2.05E-08
D_2	2.60E-11
E_0	1.28E-06
E_1	3.74E-10
λ_{TK}(μm)	0.232

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2181	$P'_{s,t}$	0.2149
$P_{C,s}$	0.4778	$P'_{C',s}$	0.5155
$P_{d,C}$	0.2914	$P'_{d,C'}$	0.2423
$P_{e,d}$	0.2367	$P'_{e,d}$	0.2332
$P_{g,F}$	0.5896	$P'_{g,F'}$	0.5215
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	-0.0020	$\Delta P_{C,s}$	0.0000
$\Delta P_{F,e}$	0.0000	$\Delta P_{g,F}$	-0.0014

着色度 Color Code	
λ_{80}/λ_5	375/335
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	430
T_s (℃)	480
$T_{10^{14.5}}$ (℃)	414
$T_{10^{13}}$ (℃)	434
$T_{10^{7.6}}$(℃)	586
$\alpha_{-30/70℃}$(10^{-7}/K)	85
$\alpha_{100/300℃}$(10^{-7}/K)	95
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	2
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.963	0.928
2200	0.970	0.941
2000	0.979	0.958
1800	0.990	0.980
1600	0.996	0.992
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.999
700	0.999	0.999
650	0.999	0.999
600	0.999	0.999
550	0.998	0.997
500	0.998	0.996
480	0.998	0.996
460	0.997	0.994
440	0.997	0.994
420	0.994	0.989
400	0.989	0.977
390	0.983	0.967
380	0.979	0.958
370	0.948	0.899
360	0.890	0.790
350	0.730	0.530
340	0.380	0.140
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	400
F_A	95
E (10^7Pa)	5548
G (10^7Pa)	2256
μ	0.229
B (10^{-12}/Pa)	

其他性质 Other Properties	
ρ (g/cm^3)	4.08

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	2.3	3.3	3.6	3.9	4.7	6.1
-20～0	2.5	3.5	4.3	4.7	5.8	7.4
0～20	2.4	4.0	4.4	4.8	6.0	7.3
20～40	2.5	3.9	4.4	4.7	5.8	7.3
40～60	3.1	4.1	4.8	5.5	6.6	7.5
60～80	3.8	5.1	5.5	6.0	7.3	8.8
80～100						
100～120						
120～140						

CDGM

H-ZF3	717295	n_d = 1.717360	υ_d = 29.50	$n_F - n_C$ = 0.024318
		n_e = 1.723100	υ_e = 29.26	$n_{F'} - n_{C'}$ = 0.024709

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	1.670569
$n_{1970.09}$	1970.09	1.676619
$n_{1529.58}$	1529.58	1.683564
$n_{1060.0}$	1060.0	1.692361
n_t	1013.98	1.693540
n_s	852.11	1.698837
n_r	706.52	1.706476
n_C	656.27	1.710324
$n_{C'}$	643.85	1.711422
n_{He-Ne}	632.8	1.712455
n_D	589.29	1.717150
n_d	587.56	1.717360
n_e	546.07	1.723100
n_F	486.13	1.734642
$n_{F'}$	479.99	1.736131
n_g	435.83	1.749348
n_h	404.66	1.762502
n_i	365.01	1.787465
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
K_1	2.03624748E-01
L_1	6.20712732E-02
K_2	1.64202576E+00
L_2	1.27139992E-02
K_3	1.38768085E+00
L_3	1.28254467E+02

折射率温度系数常数 Constants of dn/dt	
D_0	-4.82E-06
D_1	1.32E-08
D_2	-3.85E-11
E_0	9.08E-07
E_1	1.03E-09
λ_{TK}(μm)	0.282

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2178	$P'_{s,t}$	0.2144
$P_{C,s}$	0.4724	$P'_{C',s}$	0.5093
$P_{d,C}$	0.2893	$P'_{d,C'}$	0.2403
$P_{e,d}$	0.2360	$P'_{e,d}$	0.2323
$P_{g,F}$	0.6047	$P'_{g,F'}$	0.5349
$P_{i,h}$	1.0265	$P'_{i,h}$	1.0103

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0050	$\Delta P_{C,s}$	0.0009
$\Delta P_{F,e}$	0.0012	$\Delta P_{g,F}$	0.0093

着色度 Color Code	
λ_{80}/λ_5	400/360
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	591
T_s (℃)	628
$T_{10^{14.5}}$ (℃)	531
$T_{10^{13}}$ (℃)	566
$T_{10^{7.6}}$(℃)	683
$\alpha_{-30/70℃}$(10^{-7}/K)	90
$\alpha_{100/300℃}$(10^{-7}/K)	112
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	1
CR	1
RC(S)	1
RA(S)	1

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.900	0.810
2200	0.933	0.871
2000	0.967	0.935
1800	0.981	0.963
1600	0.994	0.988
1400	0.996	0.992
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.997
700	0.998	0.996
650	0.998	0.996
600	0.997	0.994
550	0.996	0.993
500	0.994	0.989
480	0.993	0.986
460	0.990	0.981
440	0.985	0.971
420	0.976	0.953
400	0.944	0.892
390	0.899	0.809
380	0.793	0.629
370	0.530	0.281
360	0.141	0.020
350		
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	520
F_A	189
E (10^7Pa)	8826
G (10^7Pa)	3518
μ	0.254
B (10^{-12}/Pa)	2.50

其他性质 Other Properties	
ρ (g/cm^3)	3.06

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	-0.9	-0.1	0.2	0.7	1.6	2.8
-40～-20	-0.9	-0.1	0.2	0.7	1.8	2.8
-20～0	-0.7	0.0	0.6	0.9	1.9	3.2
0～20	-0.5	0.4	0.9	1.1	2.2	3.6
20～40	-0.5	0.6	0.9	1.3	2.5	3.8
40～60	-0.4	0.6	1.0	1.6	2.7	4.1
60～80	-0.3	0.7	1.1	1.6	2.9	4.2
80～100	-0.3	0.8	1.3	1.8	3.1	4.5
100～120	-0.3	0.8	1.4	1.9	3.3	4.8
120～140	-0.3	0.8	1.5	1.9	3.4	5.2

CDGM

ZF3	717295	n_d = 1.71736	υ_d = 29.50	$n_F - n_C$ = 0.024317
		n_e = 1.72311	υ_e = 29.27	$n_{F'} - n_{C'}$ = 0.024703

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.69375
n_s	852.11	1.69892
n_r	706.52	1.70649
n_C	656.27	1.71032
$n_{C'}$	643.85	1.71142
n_{He-Ne}	632.8	1.71245
n_D	589.29	1.71715
n_d	587.56	1.71736
n_e	546.07	1.72311
n_F	486.13	1.73464
$n_{F'}$	479.99	1.73612
n_g	435.83	1.74915
n_h	404.66	1.76195
n_i	365.01	1.78568
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	2.8475852E+00
A_1	-1.0508828E-02
A_2	3.0945093E-02
A_3	2.1369640E-03
A_4	-1.3104012E-04
A_5	1.4242887E-05

折射率温度系数常数 Constants of dn/dt	
D_0	3.61E-06
D_1	2.44E-08
D_2	-3.11E-10
E_0	1.38E-06
E_1	1.20E-09
λ_{TK}(μm)	0.261

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2126	$P'_{s,t}$	0.2093
$P_{C,s}$	0.4688	$P'_{C',s}$	0.5060
$P_{d,C}$	0.2894	$P'_{d,C'}$	0.2405
$P_{e,d}$	0.2364	$P'_{e,d}$	0.2327
$P_{g,F}$	0.5967	$P'_{g,F'}$	0.5275
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	-0.0038	$\Delta P_{C,s}$	-0.0027
$\Delta P_{F,e}$	0.0009	$\Delta P_{g,F}$	0.0012

着色度 Color Code	
λ_{80}/λ_5	390/340
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	435
T_s (℃)	475
$T_{10^{14.5}}$ (℃)	418
$T_{10^{13}}$ (℃)	440
$T_{10^{7.6}}$(℃)	574
$\alpha_{-30/70℃}$(10^{-7}/K)	83
$\alpha_{100/300℃}$(10^{-7}/K)	95
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	2
CR	1
RC(S)	1
RA(S)	2

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.930	0.865
2200	0.955	0.912
2000	0.978	0.956
1800	0.985	0.970
1600	0.990	0.980
1400	0.999	0.998
1200	0.999	0.998
1060	0.998	0.997
1000	0.998	0.997
950	0.998	0.997
900	0.998	0.997
850	0.999	0.998
800	0.999	0.998
700	0.999	0.999
650	0.998	0.997
600	0.998	0.997
550	0.998	0.997
500	0.998	0.997
480	0.996	0.993
460	0.994	0.988
440	0.992	0.984
420	0.985	0.970
400	0.969	0.939
390	0.950	0.900
380	0.920	0.840
370	0.860	0.740
360	0.720	0.520
350	0.420	0.180
340	0.070	0.010
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	390
F_A	107
E (10^7Pa)	5460
G (10^7Pa)	2210
μ	0.235
B (10^{-12}/Pa)	

其他性质 Other Properties	
ρ (g/cm^3)	4.46

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	3.0	3.5	3.7	4.9	6.3	7.1
-20～0	3.5	4.4	5.3	6.1	7.7	9.4
0～20	4.1	5.3	6.1	7.4	8.3	10.2
20～40	4.6	6.1	7.0	7.5	8.8	10.9
40～60	4.1	6.1	6.3	6.2	8.9	10.5
60～80	4.2	6.3	6.4	7.0	9.5	10.7
80～100						
100～120						
120～140						

H-ZF4A	728283	n_d = 1.728250	υ_d = 28.32	$n_F - n_C$ = 0.025716
		n_e = 1.734316	υ_e = 28.09	$n_{F'} - n_{C'}$ = 0.026140

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	1.679677
$n_{1970.09}$	1970.09	1.685822
$n_{1529.58}$	1529.58	1.692905
$n_{1060.0}$	1060.0	1.701988
n_t	1013.98	1.703216
n_s	852.11	1.708753
n_r	706.52	1.716776
n_C	656.27	1.720828
$n_{C'}$	643.85	1.721984
n_{He-Ne}	632.8	1.723074
n_D	589.29	1.728027
n_d	587.56	1.728250
n_e	546.07	1.734316
n_F	486.13	1.746544
$n_{F'}$	479.99	1.748124
n_g	435.83	1.762183
n_h	404.66	1.776236
n_i	365.01	1.803116
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

K_1	1.67238093E+00
L_1	1.33653851E-02
K_2	1.34134437E+00
L_2	1.22464022E+02
K_3	2.04305471E-01
L_3	6.41192325E-02

折射率温度系数常数 Constants of dn/dt

D_0	-5.36E-06
D_1	1.47E-08
D_2	-3.86E-11
E_0	1.02E-06
E_1	8.24E-10
λ_{TK}(μm)	0.276

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2153	$P'_{s,t}$	0.2118
$P_{C,s}$	0.4696	$P'_{C',s}$	0.5062
$P_{d,C}$	0.2886	$P'_{d,C'}$	0.2397
$P_{e,d}$	0.2359	$P'_{e,d}$	0.2321
$P_{g,F}$	0.6081	$P'_{g,F'}$	0.5378
$P_{i,h}$	1.0453	$P'_{i,h}$	1.0283

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	0.0052	$\Delta P_{C,s}$	0.0009
$\Delta P_{F,e}$	0.0014	$\Delta P_{g,F}$	0.0107

着色度 Color Code

λ_{80}/λ_5	410/370
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	593
T_s (℃)	629
$T_{10^{14.5}}$ (℃)	537
$T_{10^{13}}$ (℃)	571
$T_{10^{7.6}}$(℃)	684
$\alpha_{-30/70℃}$(10^{-7}/K)	93
$\alpha_{100/300℃}$(10^{-7}/K)	112
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	1
CR	1
RC(S)	1
RA(S)	1

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.934	0.872
2200	0.956	0.914
2000	0.979	0.958
1800	0.987	0.975
1600	0.996	0.992
1400	0.997	0.995
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.997
700	0.998	0.996
650	0.997	0.995
600	0.996	0.993
550	0.996	0.993
500	0.992	0.985
480	0.991	0.982
460	0.988	0.976
440	0.982	0.965
420	0.971	0.942
400	0.934	0.873
390	0.883	0.779
380	0.758	0.574
370	0.462	0.213
360		
350		
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties

H_K (10^7Pa)	524
F_A	192
E (10^7Pa)	8774
G (10^7Pa)	3496
μ	0.255
B (10^{-12}/Pa)	2.73

其他性质 Other Properties

ρ (g/cm^3)	3.05

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	-1.2	-0.3	0.3	0.7	1.7	2.9
-40～-20	-1.2	-0.1	0.4	0.7	1.7	3.2
-20～0	-1.1	-0.1	0.6	0.8	1.9	3.3
0～20	-1.1	0.2	0.7	1.0	2.2	3.7
20～40	-0.8	0.4	0.9	1.3	2.4	4.0
40～60	-0.6	0.6	1.0	1.4	2.8	4.2
60～80	-0.5	0.6	1.1	1.6	3.1	4.5
80～100	-0.4	0.7	1.1	1.7	3.2	4.7
100～120	-0.4	0.7	1.2	1.9	3.3	4.9
120～140	-0.4	0.8	1.3	2.0	3.3	5.2

H-ZF4AGT	728283	n_d = 1.728250	υ_d = 28.32	$n_F - n_C$ = 0.025716
		n_e = 1.734316	υ_e = 28.09	$n_{F'} - n_{C'}$ = 0.026140

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	1.679677
$n_{1970.09}$	1970.09	1.685822
$n_{1529.58}$	1529.58	1.692905
$n_{1060.0}$	1060.0	1.701988
n_t	1013.98	1.703216
n_s	852.11	1.708753
n_r	706.52	1.716776
n_C	656.27	1.720828
$n_{C'}$	643.85	1.721984
n_{He-Ne}	632.8	1.723074
n_D	589.29	1.728027
n_d	587.56	1.728250
n_e	546.07	1.734316
n_F	486.13	1.746544
$n_{F'}$	479.99	1.748124
n_g	435.83	1.762183
n_h	404.66	1.776236
n_i	365.01	1.803116
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

K_1	1.67238093E+00
L_1	1.33653851E-02
K_2	1.34134437E+00
L_2	1.22464022E+02
K_3	2.04305471E-01
L_3	6.41192325E-02

折射率温度系数常数 Constants of dn/dt

D_0	-5.36E-06
D_1	1.47E-08
D_2	-3.86E-11
E_0	1.02E-06
E_1	8.24E-10
λ_{TK}(μm)	0.276

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2153	$P'_{s,t}$	0.2118
$P_{C,s}$	0.4696	$P'_{C',s}$	0.5062
$P_{d,C}$	0.2886	$P'_{d,C'}$	0.2397
$P_{e,d}$	0.2359	$P'_{e,d}$	0.2321
$P_{g,F}$	0.6081	$P'_{g,F'}$	0.5378
$P_{i,h}$	1.0453	$P'_{i,h}$	1.0283

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	0.0052	$\Delta P_{C,s}$	0.0009
$\Delta P_{F,e}$	0.0014	$\Delta P_{g,F}$	0.0107

着色度 Color Code

λ_{80}/λ_5	410/365
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	593
T_s (℃)	629
$T_{10^{14.5}}$ (℃)	537
$T_{10^{13}}$ (℃)	571
$T_{10^{7.6}}$(℃)	684
$\alpha_{-30/70℃}$(10^{-7}/K)	93
$\alpha_{100/300℃}$(10^{-7}/K)	112
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	1
CR	1
RC(S)	1
RA(S)	1

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.931	0.867
2200	0.955	0.911
2000	0.978	0.957
1800	0.987	0.974
1600	0.995	0.991
1400	0.997	0.994
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.997
700	0.998	0.996
650	0.997	0.995
600	0.997	0.995
550	0.996	0.993
500	0.993	0.987
480	0.992	0.984
460	0.990	0.981
440	0.986	0.972
420	0.977	0.955
400	0.946	0.894
390	0.897	0.804
380	0.776	0.602
370	0.483	0.233
360		
350		
340		
330		
320		
310		
300		
290		
280		

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	-1.2	-0.3	0.3	0.7	1.7	2.9
-40～-20	-1.2	-0.1	0.4	0.7	1.7	3.2
-20～0	-1.1	-0.1	0.6	0.8	1.9	3.3
0～20	-1.1	0.2	0.7	1.0	2.2	3.7
20～40	-0.8	0.4	0.9	1.3	2.4	4.0
40～60	-0.6	0.6	1.0	1.4	2.8	4.2
60～80	-0.5	0.6	1.1	1.6	3.1	4.5
80～100	-0.4	0.7	1.1	1.7	3.2	4.7
100～120	-0.4	0.7	1.2	1.9	3.3	4.9
120～140	-0.4	0.8	1.3	2.0	3.3	5.2

机械性质 Mechanical Properties

H_K (10^7Pa)	524
F_A	192
E (10^7Pa)	8774
G (10^7Pa)	3496
μ	0.255
B (10^{-12}/Pa)	2.73

其他性质 Other Properties

ρ (g/cm^3)	3.05

备注 Remarks

CDGM

ZF4	728283	n_d = 1.72825	υ_d = 28.32	$n_F - n_C$ = 0.025716
		n_e = 1.73432	υ_e = 28.10	$n_{F'} - n_{C'}$ = 0.026133

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.70324
n_s	852.11	1.70882
n_r	706.52	1.71679
n_C	656.27	1.72082
$n_{C'}$	643.85	1.72198
n_{He-Ne}	632.8	1.72307
n_D	589.29	1.72803
n_d	587.56	1.72825
n_e	546.07	1.73432
n_F	486.13	1.74654
$n_{F'}$	479.99	1.74811
n_g	435.83	1.76207
n_h	404.66	1.77601
n_i	365.01	
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	2.8923490E+00
A_1	-1.7933942E-02
A_2	2.3009472E-02
A_3	5.6390617E-03
A_4	-6.9815495E-04
A_5	5.2528998E-05

折射率温度系数常数 Constants of dn/dt	
D_0	-3.94E-06
D_1	1.20E-08
D_2	-6.11E-11
E_0	8.57E-07
E_1	1.51E-09
λ_{TK}(μm)	0.293

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2170	$P'_{s,t}$	0.2135
$P_{C,s}$	0.4666	$P'_{C',s}$	0.5036
$P_{d,C}$	0.2890	$P'_{d,C'}$	0.2401
$P_{e,d}$	0.2361	$P'_{e,d}$	0.2323
$P_{g,F}$	0.6038	$P'_{g,F'}$	0.5341
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0040	$\Delta P_{C,s}$	-0.0020
$\Delta P_{F,e}$	0.0008	$\Delta P_{g,F}$	0.0064

着色度 Color Code	
λ_{80}/λ_5	405/345
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	407
T_s (℃)	454
$T_{10}^{14.5}$ (℃)	364
T_{10}^{13} (℃)	398
$T_{10}^{7.6}$(℃)	
$\alpha_{-30/70℃}$(10^{-7}/K)	96
$\alpha_{100/300℃}$(10^{-7}/K)	111
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	6
CR	1
RC(S)	3
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.939	0.881
2200	0.958	0.918
2000	0.979	0.958
1800	0.989	0.978
1600	0.999	0.998
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.998	0.997
650	0.998	0.997
600	0.998	0.996
550	0.997	0.995
500	0.995	0.991
480	0.993	0.986
460	0.989	0.979
440	0.984	0.968
420	0.974	0.949
400	0.951	0.904
390	0.930	0.864
380	0.890	0.800
370	0.840	0.700
360	0.690	0.480
350	0.400	0.160
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	366
F_A	135
E (10^7Pa)	5295
G (10^7Pa)	2126
μ	0.245
B (10^{-12}/Pa)	

其他性质 Other Properties	
ρ (g/cm^3)	4.51

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	0.0	0.2	0.4	1.1	1.5	2.8
-20～0	0.0	0.4	0.7	1.2	2.5	4.0
0～20	-0.1	0.8	1.1	1.5	2.5	4.2
20～40	-0.2	1.1	1.4	1.9	2.8	4.2
40～60	-0.3	1.0	1.4	2.0	3.2	4.7
60～80	-0.1	1.1	1.8	2.1	3.6	5.4
80～100						
100～120						
120～140						

CDGM

H-ZF5	740283	n_d = 1.74000	υ_d = 28.30	$n_F - n_C$ = 0.026152
		n_e = 1.74617	υ_e = 28.07	$n_{F'} - n_{C'}$ = 0.026584

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.71452
n_s	852.11	1.72014
n_r	706.52	1.72831
n_C	656.27	1.73245
$n_{C'}$	643.85	1.73363
n_{He-Ne}	632.8	1.73474
n_D	589.29	1.73977
n_d	587.56	1.74000
n_e	546.07	1.74617
n_F	486.13	1.75861
$n_{F'}$	479.99	1.76021
n_g	435.83	1.77453
n_h	404.66	1.78884
n_i	365.01	
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	2.9135839E+00
A_1	-1.0593032E-02
A_2	3.6634924E-02
A_3	1.3464301E-03
A_4	-3.4696778E-05
A_5	1.5917092E-05

折射率温度系数常数 Constants of dn/dt	
D_0	-4.09E-06
D_1	1.23E-08
D_2	-2.03E-11
E_0	7.19E-07
E_1	1.12E-09
λ_{TK}(μm)	0.315

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2149	$P'_{s,t}$	0.2114
$P_{C,s}$	0.4707	$P'_{C',s}$	0.5074
$P_{d,C}$	0.2887	$P'_{d,C'}$	0.2396
$P_{e,d}$	0.2359	$P'_{e,d}$	0.2321
$P_{g,F}$	0.6087	$P'_{g,F'}$	0.5387
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0060	$\Delta P_{C,s}$	0.0021
$\Delta P_{F,e}$	0.0016	$\Delta P_{g,F}$	0.0112

着色度 Color Code	
λ_{80}/λ_5	410/360
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	612
T_s (℃)	637
$T_{10^{14.5}}$ (℃)	550
$T_{10^{13}}$ (℃)	583
$T_{10^{7.6}}$(℃)	703
$\alpha_{-30/70℃}$(10^{-7}/K)	89
$\alpha_{100/300℃}$(10^{-7}/K)	108
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	1
CR	1
RC(S)	1
RA(S)	1

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.906	0.820
2200	0.940	0.884
2000	0.971	0.942
1800	0.983	0.966
1600	0.994	0.988
1400	0.996	0.993
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.997
700	0.998	0.996
650	0.997	0.995
600	0.996	0.993
550	0.996	0.993
500	0.993	0.987
480	0.991	0.982
460	0.988	0.976
440	0.982	0.964
420	0.971	0.942
400	0.935	0.875
390	0.885	0.783
380	0.763	0.582
370	0.468	0.219
360		
350		
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	563
F_A	184
E (10^7Pa)	9061
G (10^7Pa)	3604
μ	0.257
B (10^{-12}/Pa)	2.52

其他性质 Other Properties	
ρ (g/cm^3)	3.16

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	-1.5	-0.9	0.3	1.1	1.4	3.1
-20～0	-0.1	0.8	1.2	1.9	2.1	3.6
0～20	-0.2	0.7	0.8	1.1	2.3	3.8
20～40	-0.3	0.6	0.8	1.2	2.3	4.2
40～60	0.0	0.6	1.0	1.3	2.7	4.3
60～80	-0.1	1.5	1.9	2.3	3.9	5.4
80～100						
100～120						
120～140						

CDGM

ZF5	740282	n_d = 1.74000	υ_d = 28.24	$n_F - n_C$ = 0.026200
		n_e = 1.74619	υ_e = 28.03	$n_{F'} - n_{C'}$ = 0.026623

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	
n_s	852.11	
n_r	706.52	1.72831
n_C	656.27	1.73243
$n_{C'}$	643.85	1.73361
n_{He-Ne}	632.8	1.73472
n_D	589.29	1.73977
n_d	587.56	1.74000
n_e	546.07	1.74619
n_F	486.13	1.75863
$n_{F'}$	479.99	1.76023
n_g	435.83	1.77439
n_h	404.66	1.78837
n_i	365.01	1.81447
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	2.9160432E+00
A_1	-1.0435647E-02
A_2	3.3907872E-02
A_3	2.2728802E-03
A_4	-1.3563213E-04
A_5	1.6527592E-05

折射率温度系数常数 Constants of dn/dt	
D_0	
D_1	
D_2	
E_0	
E_1	
λ_{TK}(μm)	

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$		$P'_{s,t}$	
$P_{C,s}$		$P'_{C',s}$	
$P_{d,C}$	0.2889	$P'_{d,C'}$	0.2401
$P_{e,d}$	0.2363	$P'_{e,d}$	0.2325
$P_{g,F}$	0.6015	$P'_{g,F'}$	0.5319
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$		$\Delta P_{C,s}$	
$\Delta P_{F,e}$	0.0007	$\Delta P_{g,F}$	0.0039

着色度 Color Code	
λ_{80}/λ_5	410/350
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	430
T_s (℃)	460
$T_{10}^{14.5}$ (℃)	
T_{10}^{13} (℃)	
$T_{10}^{7.6}$(℃)	
$\alpha_{-30/70℃}$(10^{-7}/K)	86
$\alpha_{100/300℃}$(10^{-7}/K)	98
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	2
CR	
RC(S)	1
RA(S)	2

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.950	0.903
2200	0.965	0.931
2000	0.980	0.960
1800	0.986	0.972
1600	0.992	0.984
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.999	0.998
650	0.999	0.998
600	0.999	0.998
550	0.999	0.998
500	0.998	0.997
480	0.998	0.997
460	0.997	0.994
440	0.994	0.988
420	0.984	0.969
400	0.956	0.914
390	0.920	0.850
380	0.860	0.740
370	0.730	0.540
360	0.480	0.230
350	0.150	0.020
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	390
F_A	
E (10^7Pa)	5440
G (10^7Pa)	2200
μ	0.236
B (10^{-12}/Pa)	

其他性质 Other Properties	
ρ (g/cm^3)	4.65

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20						
-20～0						
0～20						
20～40						
40～60						
60～80						
80～100						
100～120						
120～140						

CDGM

H-ZF6	755275	n_d = 1.755200	υ_d = 27.53	$n_F - n_C$ = 0.027432
		n_e = 1.761668	υ_e = 27.31	$n_{F'} - n_{C'}$ = 0.027892

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	1.704057
$n_{1970.09}$	1970.09	1.710406
$n_{1529.58}$	1529.58	1.717792
$n_{1060.0}$	1060.0	1.727342
n_t	1013.98	1.728638
n_s	852.11	1.734491
n_r	706.52	1.742995
n_C	656.27	1.747300
$n_{C'}$	643.85	1.748530
n_{He-Ne}	632.8	1.749689
n_D	589.29	1.754963
n_d	587.56	1.755200
n_e	546.07	1.761668
n_F	486.13	1.774732
$n_{F'}$	479.99	1.776422
n_g	435.83	1.791464
n_h	404.66	1.806488
n_i	365.01	
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

K_1	1.64768548E+00
L_1	1.18179362E-02
K_2	3.14478021E-01
L_2	5.85408205E-02
K_3	2.03864924E+00
L_3	1.73964477E+02

折射率温度系数常数 Constants of dn/dt

D_0	-4.02E-06
D_1	1.67E-08
D_2	-4.87E-12
E_0	8.17E-07
E_1	1.59E-09
λ_{TK}(μm)	0.303

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2134	$P'_{s,t}$	0.2098
$P_{C,s}$	0.4669	$P'_{C',s}$	0.5033
$P_{d,C}$	0.2880	$P'_{d,C'}$	0.2391
$P_{e,d}$	0.2358	$P'_{e,d}$	0.2319
$P_{g,F}$	0.6099	$P'_{g,F'}$	0.5393
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	0.0044	$\Delta P_{C,s}$	0.0001
$\Delta P_{F,e}$	0.0017	$\Delta P_{g,F}$	0.0111

着色度 Color Code

λ_{80}/λ_5	410/365
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	619
T_s (℃)	650
$T_{10^{14.5}}$ (℃)	560
$T_{10^{13}}$ (℃)	595
$T_{10^{7.6}}$(℃)	710
$\alpha_{-30/70℃}$(10^{-7}/K)	87
$\alpha_{100/300℃}$(10^{-7}/K)	104
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	1
CR	1
RC(S)	2
RA(S)	1

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.932	0.868
2200	0.956	0.914
2000	0.980	0.960
1800	0.988	0.975
1600	0.996	0.991
1400	0.997	0.994
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.997
700	0.998	0.996
650	0.997	0.995
600	0.996	0.993
550	0.996	0.993
500	0.992	0.985
480	0.990	0.981
460	0.988	0.976
440	0.983	0.967
420	0.974	0.948
400	0.940	0.883
390	0.889	0.791
380	0.758	0.574
370	0.436	0.190
360		
350		
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties

H_K (10^7Pa)	523
F_A	188
E (10^7Pa)	9087
G (10^7Pa)	3633
μ	0.251
B (10^{-12}/Pa)	2.60

其他性质 Other Properties

ρ (g/cm^3)	3.24

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	-1.1	-0.4	0.6	1.9	2.0	2.2
-20～0	-0.3	0.6	1.2	1.7	2.2	3.6
0～20	-0.5	0.3	1.2	0.7	2.7	4.1
20～40	-0.1	0.4	1.2	1.5	3.2	4.8
40～60	0.7	1.3	2.1	1.9	4.1	5.4
60～80	0.7	1.5	2.0	2.3	4.0	5.4
80～100						
100～120						
120～140						

ZF6	755275	n_d = 1.75520	υ_d = 27.53	$n_F - n_C$ = 0.027432
		n_e = 1.76168	υ_e = 27.32	$n_{F'} - n_{C'}$ = 0.027881

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.72888
n_s	852.11	1.73457
n_r	706.52	1.74300
n_C	656.27	1.74729
$n_{C'}$	643.85	1.74852
n_{He-Ne}	632.8	1.74968
n_D	589.29	1.75496
n_d	587.56	1.75520
n_e	546.07	1.76168
n_F	486.13	1.77472
$n_{F'}$	479.99	1.77640
n_g	435.83	1.79120
n_h	404.66	1.80585
n_i	365.01	1.83320
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	2.9628600E+00
A_1	-1.0407782E-02
A_2	3.5644124E-02
A_3	2.4569921E-03
A_4	-1.4961589E-04
A_5	1.7782775E-05

折射率温度系数常数 Constants of dn/dt	
D_0	
D_1	
D_2	
E_0	
E_1	
λ_{TK}(μm)	

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2074	$P'_{s,t}$	0.2041
$P_{C,s}$	0.4637	$P'_{C',s}$	0.5003
$P_{d,C}$	0.2884	$P'_{d,C'}$	0.2396
$P_{e,d}$	0.2363	$P'_{e,d}$	0.2325
$P_{g,F}$	0.6008	$P'_{g,F'}$	0.5308
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	-0.0048	$\Delta P_{C,s}$	-0.0031
$\Delta P_{F,e}$	0.0008	$\Delta P_{g,F}$	0.0020

着色度 Color Code	
λ_{80}/λ_5	405/350
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	420
T_s (℃)	465
$T_{10}^{14.5}$ (℃)	414
T_{10}^{13} (℃)	435
$T_{10}^{7.6}$(℃)	556
$\alpha_{-30/70℃}$(10^{-7}/K)	80
$\alpha_{100/300℃}$(10^{-7}/K)	94
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	2
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.930	0.865
2200	0.955	0.912
2000	0.978	0.956
1800	0.985	0.970
1600	0.992	0.984
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.999	0.998
650	0.999	0.998
600	0.999	0.998
550	0.999	0.998
500	0.998	0.996
480	0.997	0.994
460	0.996	0.993
440	0.992	0.984
420	0.983	0.966
400	0.960	0.920
390	0.930	0.870
380	0.880	0.780
370	0.780	0.610
360	0.530	0.290
350	0.170	0.030
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	380
F_A	148
E (10^7Pa)	5472
G (10^7Pa)	2250
μ	0.216
B (10^{-12}/Pa)	

其他性质 Other Properties	
ρ (g/cm^3)	4.78

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	3.9	5.9	6.5	6.9	7.8	9.7
-20～0	4.8	6.2	7.4	7.6	8.6	11.8
0～20	5.8	7.1	7.8	8.5	9.1	12.6
20～40	6.0	7.6	8.1	9.0	9.7	13.5
40～60	6.1	8.0	8.6	9.4	10.4	13.8
60～80	6.2	8.3	8.8	10.0	11.2	14.2
80～100						
100～120						
120～140						

H-ZF7LA	805255	n_d = 1.805180	υ_d = 25.46	$n_F - n_C$ = 0.031630
		n_e = 1.812632	υ_e = 25.25	$n_{F'} - n_{C'}$ = 0.032179

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	1.749661
$n_{1970.09}$	1970.09	1.755925
$n_{1529.58}$	1529.58	1.763376
$n_{1060.0}$	1060.0	1.773552
n_t	1013.98	1.774981
n_s	852.11	1.781525
n_r	706.52	1.791184
n_C	656.27	1.796108
$n_{C'}$	643.85	1.797518
n_{He-Ne}	632.8	1.798847
n_D	589.29	1.804907
n_d	587.56	1.805180
n_e	546.07	1.812632
n_F	486.13	1.827738
$n_{F'}$	479.99	1.829697
n_g	435.83	1.847193
n_h	404.66	1.864787
n_i	365.01	1.898671
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

K_1	1.65846092E+00
L_1	1.44874699E+02
K_2	2.98796445E-01
L_2	6.35424599E-02
K_3	1.81848340E+00
L_3	1.41908346E-02

折射率温度系数常数 Constants of dn/dt

D_0	-7.91E-06
D_1	1.24E-08
D_2	-3.12E-11
E_0	1.09E-06
E_1	1.48E-09
λ_{TK}(μm)	0.281

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2069	$P'_{s,t}$	0.2034
$P_{C,s}$	0.4610	$P'_{C',s}$	0.4970
$P_{d,C}$	0.2868	$P'_{d,C'}$	0.2381
$P_{e,d}$	0.2356	$P'_{e,d}$	0.2316
$P_{g,F}$	0.6151	$P'_{g,F'}$	0.5437
$P_{i,h}$	1.0713	$P'_{i,h}$	1.0530

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	0.0018	$\Delta P_{C,s}$	-0.0009
$\Delta P_{F,e}$	0.0020	$\Delta P_{g,F}$	0.0127

着色度 Color Code

λ_{80}/λ_5	425/365
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	580
T_s (℃)	615
$T_{10^{14.5}}$ (℃)	530
$T_{10^{13}}$ (℃)	558
$T_{10^{7.6}}$(℃)	678
$\alpha_{-30/70℃}$(10^{-7}/K)	90
$\alpha_{100/300℃}$(10^{-7}/K)	113
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	1
CR	1
RC(S)	1
RA(S)	1

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.924	0.854
2200	0.958	0.917
2000	0.976	0.953
1800	0.986	0.973
1600	0.996	0.992
1400	0.998	0.996
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.996
700	0.998	0.996
650	0.997	0.995
600	0.997	0.995
550	0.996	0.993
500	0.992	0.985
480	0.991	0.982
460	0.988	0.976
440	0.982	0.965
420	0.970	0.940
400	0.936	0.877
390	0.900	0.810
380	0.804	0.647
370	0.556	0.309
360	0.145	0.021
350		
340		
330		
320		
310		
300		
290		
280		

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	-2.3	-1.8	-0.8	-0.6	0.3	1.8
-40～-20	-3.1	-1.7	-1.4	-0.8	0.6	1.7
-20～0	-2.7	-1.5	-1.0	-0.6	0.8	2.6
0～20	-2.5	-1.1	-0.9	-0.4	0.9	2.5
20～40	-2.4	-1.1	-0.7	0.0	1.6	3.2
40～60	-2.3	-0.9	-0.3	0.1	1.9	3.8
60～80	-2.3	-0.8	-0.3	0.5	2.1	4.0
80～100	-2.0	-0.7	-0.1	0.8	2.3	4.5
100～120	-2.3	-0.4	0.1	0.5	2.2	4.3
120～140	-1.6	-0.2	0.2	1.2	3.2	5.2

机械性质 Mechanical Properties

H_K (10^7Pa)	513
F_A	192
E (10^7Pa)	8994
G (10^7Pa)	3555
μ	0.265
B (10^{-12}/Pa)	2.65

其他性质 Other Properties

ρ (g/cm^3)	3.35

备注 Remarks

CDGM

H-ZF7LAGT	805255	n_d = 1.805180	υ_d = 25.46	$n_F - n_C$ = 0.031630
		n_e = 1.812632	υ_e = 25.25	$n_{F'} - n_{C'}$ = 0.032179

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	1.749661
$n_{1970.09}$	1970.09	1.755925
$n_{1529.58}$	1529.58	1.763376
$n_{1060.0}$	1060.0	1.773552
n_t	1013.98	1.774981
n_s	852.11	1.781525
n_r	706.52	1.791184
n_C	656.27	1.796108
$n_{C'}$	643.85	1.797518
n_{He-Ne}	632.8	1.798847
n_D	589.29	1.804907
n_d	587.56	1.805180
n_e	546.07	1.812632
n_F	486.13	1.827738
$n_{F'}$	479.99	1.829697
n_g	435.83	1.847193
n_h	404.66	1.864787
n_i	365.01	1.898671
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

K_1	1.65846092E+00
L_1	1.44874699E+02
K_2	2.98796445E-01
L_2	6.35424599E-02
K_3	1.81848340E+00
L_3	1.41908346E-02

折射率温度系数常数 Constants of dn/dt

D_0	-7.91E-06
D_1	1.24E-08
D_2	-3.12E-11
E_0	1.09E-06
E_1	1.48E-09
λ_{TK}(μm)	0.281

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2069	$P'_{s,t}$	0.2034
$P_{C,s}$	0.4610	$P'_{C',s}$	0.4970
$P_{d,C}$	0.2868	$P'_{d,C'}$	0.2381
$P_{e,d}$	0.2356	$P'_{e,d}$	0.2316
$P_{g,F}$	0.6151	$P'_{g,F'}$	0.5437
$P_{i,h}$	1.0713	$P'_{i,h}$	1.0530

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	0.0018	$\Delta P_{C,s}$	-0.0009
$\Delta P_{F,e}$	0.0020	$\Delta P_{g,F}$	0.0127

着色度 Color Code

λ_{80}/λ_5	420/360
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	580
T_s (℃)	615
$T_{10^{14.5}}$ (℃)	530
$T_{10^{13}}$ (℃)	558
$T_{10^{7.6}}$(℃)	678
$\alpha_{-30/70℃}$(10^{-7}/K)	90
$\alpha_{100/300℃}$(10^{-7}/K)	113
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	1
CR	1
RC(S)	1
RA(S)	1

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.919	0.845
2200	0.955	0.911
2000	0.975	0.950
1800	0.985	0.971
1600	0.995	0.991
1400	0.998	0.995
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.997
700	0.998	0.997
650	0.998	0.996
600	0.998	0.996
550	0.997	0.994
500	0.993	0.986
480	0.990	0.981
460	0.988	0.976
440	0.982	0.964
420	0.972	0.945
400	0.944	0.891
390	0.908	0.824
380	0.812	0.659
370	0.550	0.303
360	0.134	0.018
350		
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties

H_K (10^7Pa)	513
F_A	192
E (10^7Pa)	8994
G (10^7Pa)	3555
μ	0.265
B (10^{-12}/Pa)	2.65

其他性质 Other Properties

ρ (g/cm^3)	3.35

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	-2.3	-1.8	-0.8	-0.6	0.3	1.8
-40～-20	-3.1	-1.7	-1.4	-0.8	0.6	1.7
-20～0	-2.7	-1.5	-1.0	-0.6	0.8	2.6
0～20	-2.5	-1.1	-0.9	-0.4	0.9	2.5
20～40	-2.4	-1.1	-0.7	0.0	1.6	3.2
40～60	-2.3	-0.9	-0.3	0.1	1.9	3.8
60～80	-2.3	-0.8	-0.3	0.5	2.1	4.0
80～100	-2.0	-0.7	-0.1	0.8	2.3	4.5
100～120	-2.3	-0.4	0.1	0.5	2.2	4.3
120～140	-1.6	-0.2	0.2	1.2	3.2	5.2

CDGM

ZF7	806254	n_d = 1.80627	υ_d = 25.37	$n_F - n_C$ = 0.031780
		n_e = 1.81377	υ_e = 25.18	$n_{F'} - n_{C'}$ = 0.032313

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.77620
n_s	852.11	1.78261
n_r	706.52	1.79223
n_C	656.27	1.79716
$n_{C'}$	643.85	1.79857
n_{He-Ne}	632.8	1.79991
n_D	589.29	1.80600
n_d	587.56	1.80627
n_e	546.07	1.81377
n_F	486.13	1.82894
$n_{F'}$	479.99	1.83089
n_g	435.83	1.84832
n_h	404.66	1.86567
n_i	365.01	1.89857
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

A_0	3.1221966E+00
A_1	-1.0649791E-02
A_2	4.2191871E-02
A_3	2.8937660E-03
A_4	-1.6523594E-04
A_5	2.3291810E-05

折射率温度系数常数 Constants of dn/dt

D_0	
D_1	
D_2	
E_0	
E_1	
λ_{TK}(μm)	

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2017	$P'_{s,t}$	0.1984
$P_{C,s}$	0.4578	$P'_{C',s}$	0.4939
$P_{d,C}$	0.2867	$P'_{d,C'}$	0.2383
$P_{e,d}$	0.2360	$P'_{e,d}$	0.2321
$P_{g,F}$	0.6098	$P'_{g,F'}$	0.5394
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	-0.0062	$\Delta P_{C,s}$	-0.0039
$\Delta P_{F,e}$	0.0017	$\Delta P_{g,F}$	0.0073

着色度 Color Code

λ_{80}/λ_5	425/360
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	430
T_s (℃)	467
$T_{10^{14.5}}$ (℃)	392
$T_{10^{13}}$ (℃)	423
$T_{10^{7.6}}$(℃)	549
$\alpha_{-30/70℃}$(10^{-7}/K)	79
$\alpha_{100/300℃}$(10^{-7}/K)	90
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	5
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.958	0.918
2200	0.974	0.948
2000	0.987	0.975
1800	0.994	0.988
1600	0.999	0.998
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.997
700	0.998	0.996
650	0.997	0.995
600	0.997	0.995
550	0.997	0.994
500	0.995	0.990
480	0.992	0.984
460	0.988	0.976
440	0.980	0.961
420	0.963	0.927
400	0.916	0.839
390	0.870	0.750
380	0.780	0.610
370	0.610	0.370
360	0.300	0.090
350		
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties

H_K (10^7Pa)	361
F_A	143
E (10^7Pa)	5451
G (10^7Pa)	2187
μ	0.246
B (10^{-12}/Pa)	

其他性质 Other Properties

ρ (g/cm^3)	5.19

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	4.2	6.2	7.2	8.2	10.1	12.7
-20～0	4.1	6.5	7.2	8.4	10.2	13.3
0～20	5.3	7.6	8.3	9.2	11.9	14.7
20～40	5.8	7.8	8.6	9.5	12.3	15.0
40～60	5.9	8.6	9.4	10.1	12.9	15.3
60～80	7.7	10.2	11.1	13.0	15.2	17.6
80～100						
100～120						
120～140						

CDGM

ZF7L	805255	n_d = 1.80518	υ_d = 25.46	$n_F - n_C$ = 0.031620
		n_e = 1.81265	υ_e = 25.27	$n_{F'} - n_{C'}$ = 0.032161

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.77524
n_s	852.11	1.78162
n_r	706.52	1.79120
n_C	656.27	1.79611
$n_{C'}$	643.85	1.79752
n_{He-Ne}	632.8	1.79885
n_D	589.29	1.80491
n_d	587.56	1.80518
n_e	546.07	1.81265
n_F	486.13	1.82773
$n_{F'}$	479.99	1.82968
n_g	435.83	1.84701
n_h	404.66	1.86427
n_i	365.01	1.89697
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	3.1172453E+00
A_1	-9.7795868E-03
A_2	4.3175256E-02
A_3	2.5227958E-03
A_4	-1.1739974E-04
A_5	2.0788116E-05

折射率温度系数常数 Constants of dn/dt	
D_0	4.87E-06
D_1	2.39E-08
D_2	-5.51E-11
E_0	1.91E-06
E_1	1.48E-09
λ_{TK}(μm)	0.253

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2018	$P'_{s,t}$	0.1984
$P_{C,s}$	0.4583	$P'_{C',s}$	0.4944
$P_{d,C}$	0.2870	$P'_{d,C'}$	0.2384
$P_{e,d}$	0.2360	$P'_{e,d}$	0.2320
$P_{g,F}$	0.6097	$P'_{g,F'}$	0.5389
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	-0.0062	$\Delta P_{C,s}$	-0.0037
$\Delta P_{F,e}$	0.0015	$\Delta P_{g,F}$	0.0074

着色度 Color Code	
λ_{80}/λ_5	425/360
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	430
T_s (℃)	465
$T_{10^{14.5}}$ (℃)	383
$T_{10^{13}}$ (℃)	423
$T_{10^{7.6}}$(℃)	549
$\alpha_{-30/70℃}$(10^{-7}/K)	79
$\alpha_{100/300℃}$(10^{-7}/K)	91
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	4
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.950	0.903
2200	0.965	0.931
2000	0.980	0.960
1800	0.990	0.980
1600	0.996	0.992
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.996
700	0.997	0.995
650	0.997	0.995
600	0.997	0.995
550	0.997	0.994
500	0.994	0.989
480	0.991	0.982
460	0.986	0.973
440	0.977	0.955
420	0.956	0.914
400	0.900	0.810
390	0.840	0.710
380	0.750	0.560
370	0.570	0.320
360	0.280	0.080
350		
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	330
F_A	143
E (10^7Pa)	5484
G (10^7Pa)	2237
μ	0.226
B (10^{-12}/Pa)	0.66

其他性质 Other Properties	
ρ (g/cm^3)	5.19

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	5.0	6.8	7.6	8.5	11.1	11.7
-20～0	5.2	7.4	8.0	8.6	11.1	14.5
0～20	5.6	8.0	8.9	9.8	11.6	14.9
20～40	5.7	8.5	9.3	10.4	12.2	15.1
40～60	6.0	9.0	9.6	10.8	12.8	15.6
60～80	7.0	9.2	9.7	11.2	14.1	16.6
80～100						
100～120						
120～140						

ZF7LGT	805255	n_d = 1.80518	υ_d = 25.46	$n_F - n_C$ = 0.031620
		n_e = 1.81265	υ_e = 25.27	$n_{F'} - n_{C'}$ = 0.032161

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.77524
n_s	852.11	1.78162
n_r	706.52	1.79120
n_C	656.27	1.79611
$n_{C'}$	643.85	1.79752
n_{He-Ne}	632.8	1.79885
n_D	589.29	1.80491
n_d	587.56	1.80518
n_e	546.07	1.81265
n_F	486.13	1.82773
$n_{F'}$	479.99	1.82968
n_g	435.83	1.84701
n_h	404.66	1.86427
n_i	365.01	1.89697
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	3.1172453E+00
A_1	-9.7795868E-03
A_2	4.3175256E-02
A_3	2.5227958E-03
A_4	-1.1739974E-04
A_5	2.0788116E-05

折射率温度系数常数 Constants of dn/dt	
D_0	4.87E-06
D_1	2.39E-08
D_2	-5.51E-11
E_0	1.91E-06
E_1	1.48E-09
λ_{TK}(μm)	0.253

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2018	$P'_{s,t}$	0.1984
$P_{C,s}$	0.4583	$P'_{C',s}$	0.4944
$P_{d,C}$	0.2870	$P'_{d,C'}$	0.2384
$P_{e,d}$	0.2360	$P'_{e,d}$	0.2320
$P_{g,F}$	0.6097	$P'_{g,F'}$	0.5389
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	-0.0062	$\Delta P_{C,s}$	-0.0037
$\Delta P_{F,e}$	0.0015	$\Delta P_{g,F}$	0.0074

着色度 Color Code	
λ_{80}/λ_5	420/360
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	430
T_s (℃)	465
$T_{10^{14.5}}$ (℃)	383
$T_{10^{13}}$ (℃)	423
$T_{10^{7.6}}$(℃)	549
$\alpha_{-30/70℃}$(10^{-7}/K)	79
$\alpha_{100/300℃}$(10^{-7}/K)	91
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	4
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.961	0.923
2200	0.975	0.951
2000	0.987	0.975
1800	0.993	0.987
1600	0.999	0.998
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.998	0.996
650	0.997	0.995
600	0.997	0.995
550	0.997	0.994
500	0.995	0.991
480	0.995	0.990
460	0.993	0.986
440	0.989	0.979
420	0.981	0.962
400	0.954	0.911
390	0.921	0.848
380	0.850	0.720
370	0.680	0.460
360	0.330	0.110
350		
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	330
F_A	143
E (10^7Pa)	5484
G (10^7Pa)	2237
μ	0.226
B (10^{-12}/Pa)	0.66

其他性质 Other Properties	
ρ (g/cm^3)	5.19

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	5.0	6.8	7.6	8.5	11.1	11.7
-20～0	5.2	7.4	8.0	8.6	11.1	14.5
0～20	5.6	8.0	8.9	9.8	11.6	14.9
20～40	5.7	8.5	9.3	10.4	12.2	15.1
40～60	6.0	9.0	9.6	10.8	12.8	15.6
60～80	7.0	9.2	9.7	11.2	14.1	16.6
80～100						
100～120						
120～140						

ZF8	654337	n_d = 1.65446	υ_d = 33.65	$n_F - n_C$ = 0.019447
		n_e = 1.65907	υ_e = 33.41	$n_{F'} - n_{C'}$ = 0.019728

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	
n_s	852.11	
n_r	706.52	1.64565
n_C	656.27	1.64878
$n_{C'}$	643.85	1.64967
n_{He-Ne}	632.8	1.65050
n_D	589.29	1.65429
n_d	587.56	1.65446
n_e	546.07	1.65907
n_F	486.13	1.66822
$n_{F'}$	479.99	1.66939
n_g	435.83	1.67966
n_h	404.66	1.68965
n_i	365.01	1.70788
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	2.6567173E+00
A_1	-9.1117044E-03
A_2	2.5815197E-02
A_3	1.1203564E-03
A_4	-4.1066817E-05
A_5	6.9242011E-06

折射率温度系数常数 Constants of dn/dt	
D_0	
D_1	
D_2	
E_0	
E_1	
λ_{TK}(μm)	

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$		$P'_{s,t}$	
$P_{C,s}$		$P'_{C',s}$	
$P_{d,C}$	0.2921	$P'_{d,C'}$	0.2428
$P_{e,d}$	0.2371	$P'_{e,d}$	0.2337
$P_{g,F}$	0.5883	$P'_{g,F'}$	0.5206
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$		$\Delta P_{C,s}$	
$\Delta P_{F,e}$	-0.0007	$\Delta P_{g,F}$	-0.0001

着色度 Color Code	
λ_{80}/λ_5	380/340
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	448
T_s (℃)	518
$T_{10}^{14.5}$ (℃)	393
T_{10}^{13} (℃)	436
$T_{10}^{7.6}$(℃)	617
$\alpha_{-30/70℃}$(10^{-7}/K)	76
$\alpha_{100/300℃}$(10^{-7}/K)	89
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	2
CR	1
RC(S)	1
RA(S)	2

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.948	0.898
2200	0.957	0.916
2000	0.982	0.964
1800	0.990	0.980
1600	0.998	0.997
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.997
700	0.998	0.996
650	0.997	0.995
600	0.997	0.995
550	0.997	0.995
500	0.996	0.992
480	0.995	0.990
460	0.993	0.987
440	0.991	0.983
420	0.988	0.976
400	0.979	0.958
390	0.966	0.934
380	0.947	0.897
370	0.918	0.843
360	0.850	0.720
350	0.710	0.510
340	0.420	0.180
330	0.100	0.010
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	379
F_A	102
E (10^7Pa)	5662
G (10^7Pa)	2313
μ	0.224
B (10^{-12}/Pa)	

其他性质 Other Properties	
ρ (g/cm^3)	3.91

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20						
-20～0						
0～20						
20～40						
40～60						
60～80						
80～100						
100～120						
120～140						

CDGM

H-ZF10	689312	n_d = 1.688930	υ_d = 31.16	$n_F - n_C$ = 0.022109
		n_e = 1.694152	υ_e = 30.92	$n_{F'} - n_{C'}$ = 0.022453

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	1.645355
$n_{1970.09}$	1970.09	1.651128
$n_{1529.58}$	1529.58	1.657732
$n_{1060.0}$	1060.0	1.665985
n_t	1013.98	1.667081
n_s	852.11	1.671976
n_r	706.52	1.678990
n_C	656.27	1.682510
$n_{C'}$	643.85	1.683513
n_{He-Ne}	632.8	1.684457
n_D	589.29	1.688738
n_d	587.56	1.688930
n_e	546.07	1.694152
n_F	486.13	1.704619
$n_{F'}$	479.99	1.705966
n_g	435.83	1.717885
n_h	404.66	1.729683
n_i	365.01	1.751877
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

K_1	1.50060292E+00
L_1	1.45496272E+02
K_2	1.57641199E+00
L_2	1.21805144E-02
K_3	1.83076270E-01
L_3	6.05139545E-02

折射率温度系数常数 Constants of dn/dt

D_0	-5.43E-06
D_1	1.06E-08
D_2	-9.67E-11
E_0	9.25E-07
E_1	1.66E-09
λ_{TK}(μm)	0.269

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2214	$P'_{s,t}$	0.2180
$P_{C,s}$	0.4765	$P'_{C',s}$	0.5138
$P_{d,C}$	0.2904	$P'_{d,C'}$	0.2413
$P_{e,d}$	0.2362	$P'_{e,d}$	0.2326
$P_{g,F}$	0.6000	$P'_{g,F'}$	0.5308
$P_{i,h}$	1.0038	$P'_{i,h}$	0.9885

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	0.0048	$\Delta P_{C,s}$	0.0011
$\Delta P_{F,e}$	0.0009	$\Delta P_{g,F}$	0.0074

着色度 Color Code

λ_{80}/λ_5	395/360
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	554
T_s (℃)	587
$T_{10^{14.5}}$ (℃)	490
$T_{10^{13}}$ (℃)	526
$T_{10^{7.6}}$(℃)	650
$\alpha_{-30/70℃}$(10^{-7}/K)	91
$\alpha_{100/300℃}$(10^{-7}/K)	119
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	1
CR	1
RC(S)	1
RA(S)	1

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.940	0.884
2200	0.961	0.923
2000	0.981	0.963
1800	0.991	0.983
1600	0.999	0.998
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.997
700	0.996	0.993
650	0.995	0.991
600	0.996	0.993
550	0.996	0.993
500	0.994	0.988
480	0.992	0.984
460	0.990	0.980
440	0.987	0.975
420	0.982	0.964
400	0.957	0.916
390	0.920	0.847
380	0.830	0.690
370	0.600	0.360
360	0.200	0.040
350		
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties

H_K (10^7Pa)	527
F_A	175
E (10^7Pa)	8570
G (10^7Pa)	3438
μ	0.246
B (10^{-12}/Pa)	

其他性质 Other Properties

ρ (g/cm^3)	2.92

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	-1.3	-1.1	-0.3	0.3	0.6	1.5
-20～0	-0.9	0.4	0.5	0.7	1.6	2.8
0～20	-0.9	0.1	0.3	0.6	1.3	2.9
20～40	-1.0	0.2	0.4	0.7	2.1	2.8
40～60	-0.9	0.1	0.7	1.2	2.1	3.6
60～80	-0.9	0.2	0.5	1.1	2.4	3.6
80～100						
100～120						
120～140						

ZF10	689312	n_d = 1.68893	υ_d = 31.18	$n_F - n_C$ = 0.022098
		n_e = 1.69416	υ_e = 30.95	$n_{F'} - n_{C'}$ = 0.022432

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.66724
n_s	852.11	1.67202
n_r	706.52	1.67899
n_C	656.27	1.68250
$n_{C'}$	643.85	1.68351
n_{He-Ne}	632.8	1.68445
n_D	589.29	1.68874
n_d	587.56	1.68893
n_e	546.07	1.69416
n_F	486.13	1.70460
$n_{F'}$	479.99	1.70594
n_g	435.83	1.71769
n_h	404.66	1.72917
n_i	365.01	1.75034
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

A_0	2.7592905E+00
A_1	-9.2045583E-03
A_2	2.9316434E-02
A_3	1.4874080E-03
A_4	-7.0522349E-05
A_5	9.9538848E-06

折射率温度系数常数 Constants of dn/dt

D_0	4.02E-06
D_1	3.02E-08
D_2	-2.40E-10
E_0	1.33E-06
E_1	-1.33E-10
λ_{TK}(μm)	0.247

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2163	$P'_{s,t}$	0.2131
$P_{C,s}$	0.4743	$P'_{C',s}$	0.5122
$P_{d,C}$	0.2909	$P'_{d,C'}$	0.2418
$P_{e,d}$	0.2365	$P'_{e,d}$	0.2330
$P_{g,F}$	0.5924	$P'_{g,F'}$	0.5238
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	-0.0026	$\Delta P_{C,s}$	-0.0012
$\Delta P_{F,e}$	0.0000	$\Delta P_{g,F}$	-0.0002

着色度 Color Code

λ_{80}/λ_5	390/340
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	430
T_s (℃)	495
$T_{10}^{14.5}$ (℃)	383
T_{10}^{13} (℃)	422
$T_{10}^{7.6}$(℃)	594
$\alpha_{-30/70℃}$(10^{-7}/K)	76
$\alpha_{100/300℃}$(10^{-7}/K)	92
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	2
CR	
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.954	0.911
2200	0.963	0.928
2000	0.983	0.966
1800	0.990	0.980
1600	0.997	0.994
1400	0.998	0.997
1200	0.999	0.998
1060	0.999	0.998
1000	0.998	0.997
950	0.998	0.997
900	0.998	0.997
850	0.998	0.996
800	0.997	0.995
700	0.997	0.994
650	0.996	0.993
600	0.996	0.993
550	0.996	0.993
500	0.994	0.989
480	0.993	0.987
460	0.991	0.983
440	0.989	0.978
420	0.985	0.970
400	0.974	0.948
390	0.961	0.923
380	0.940	0.883
370	0.900	0.810
360	0.810	0.650
350	0.610	0.370
340	0.240	0.060
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties

H_K (10^7Pa)	376
F_A	87
E (10^7Pa)	5562
G (10^7Pa)	2216
μ	0.230
B (10^{-12}/Pa)	

其他性质 Other Properties

ρ (g/cm^3)	4.21

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	0.1	1.4	1.9	2.2	3.4	5.2
-20～0	1.3	3.0	3.4	3.9	5.6	7.0
0～20	2.8	4.2	4.6	5.2	6.2	7.8
20～40	3.1	4.5	5.0	5.6	6.6	8.1
40～60	3.4	4.7	5.3	5.9	7.2	8.6
60～80	3.7	5.2	5.7	6.2	7.7	9.6
80～100						
100～120						
120～140						

H-ZF11	699301	n_d = 1.698940	υ_d = 30.05	$n_F - n_C$ = 0.023259
		n_e = 1.704431	υ_e = 29.81	$n_{F'} - n_{C'}$ = 0.023628

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	1.653752
$n_{1970.09}$	1970.09	1.659667
$n_{1529.58}$	1529.58	1.666431
$n_{1060.0}$	1060.0	1.674944
n_t	1013.98	1.676081
n_s	852.11	1.681178
n_r	706.52	1.688512
n_C	656.27	1.692201
$n_{C'}$	643.85	1.693253
n_{He-Ne}	632.8	1.694243
n_D	589.29	1.698738
n_d	587.56	1.698940
n_e	546.07	1.704431
n_F	486.13	1.715460
$n_{F'}$	479.99	1.716881
n_g	435.83	1.729483
n_h	404.66	1.742000
n_i	365.01	1.765684
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

K_1	1.59868051E+00
L_1	1.26057844E-02
K_2	1.89448887E-01
L_2	6.17894718E-02
K_3	1.26870155E+00
L_3	1.21376823E+02

折射率温度系数常数 Constants of dn/dt

D_0	-5.39E-06
D_1	1.28E-08
D_2	-5.25E-11
E_0	9.07E-07
E_1	9.29E-10
λ_{TK}(μm)	0.278

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2191	$P'_{s,t}$	0.2157
$P_{C,s}$	0.4739	$P'_{C',s}$	0.5110
$P_{d,C}$	0.2897	$P'_{d,C'}$	0.2407
$P_{e,d}$	0.2361	$P'_{e,d}$	0.2324
$P_{g,F}$	0.6029	$P'_{g,F'}$	0.5334
$P_{i,h}$	1.0183	$P'_{i,h}$	1.0024

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	0.0052	$\Delta P_{C,s}$	0.0012
$\Delta P_{F,e}$	0.0010	$\Delta P_{g,F}$	0.0084

着色度 Color Code

λ_{80}/λ_5	395/360
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	576
T_s (℃)	613
$T_{10^{14.5}}$ (℃)	517
$T_{10^{13}}$ (℃)	551
$T_{10^{7.6}}$(℃)	672
$\alpha_{-30/70℃}$(10^{-7}/K)	90
$\alpha_{100/300℃}$(10^{-7}/K)	113
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	1
CR	1
RC(S)	2
RA(S)	1

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.915	0.838
2200	0.943	0.889
2000	0.972	0.945
1800	0.984	0.968
1600	0.995	0.990
1400	0.996	0.993
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.998	0.996
650	0.998	0.996
600	0.998	0.996
550	0.997	0.994
500	0.995	0.990
480	0.994	0.988
460	0.992	0.984
440	0.989	0.978
420	0.984	0.969
400	0.965	0.932
390	0.935	0.875
380	0.851	0.725
370	0.615	0.378
360	0.184	0.034
350		
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties

H_K (10^7Pa)	521
F_A	175
E (10^7Pa)	8410
G (10^7Pa)	3371
μ	0.248
B (10^{-12}/Pa)	2.73

其他性质 Other Properties

ρ (g/cm^3)	2.95

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	-1.2	-0.4	0.0	0.2	1.1	2.1
-40～-20	-1.2	-0.1	0.1	0.5	1.4	2.4
-20～0	-1.1	0.0	0.2	0.7	1.6	2.8
0～20	-1.0	0.0	0.4	0.8	1.9	2.9
20～40	-0.9	0.1	0.5	1.0	2.1	3.3
40～60	-0.8	0.1	0.6	1.1	2.2	3.5
60～80	-0.7	0.4	0.7	1.3	2.3	3.8
80～100	-0.6	0.4	0.8	1.3	2.4	3.9
100～120	-0.8	0.1	0.6	1.1	2.1	3.7
120～140	-0.9	0.3	0.7	1.2	2.5	4.1

CDGM

ZF11	699301	n_d = 1.69895	υ_d = 30.07	$n_F - n_C$ = 0.023246
		n_e = 1.70445	υ_e = 29.84	$n_{F'} - n_{C'}$ = 0.023611

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	
n_s	852.11	
n_r	706.52	1.68853
n_C	656.27	1.69221
$n_{C'}$	643.85	1.69326
n_{He-Ne}	632.8	1.69425
n_D	589.29	1.69875
n_d	587.56	1.69895
n_e	546.07	1.70445
n_F	486.13	1.71546
$n_{F'}$	479.99	1.71687
n_g	435.83	1.72939
n_h	404.66	1.74174
n_i	365.01	1.76486
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

A_0	2.7906689E+00
A_1	-1.0644977E-02
A_2	2.9071854E-02
A_3	2.1286607E-03
A_4	-1.5815625E-04
A_5	1.7145247E-05

折射率温度系数常数 Constants of dn/dt

D_0	
D_1	
D_2	
E_0	
E_1	
λ_{TK}(μm)	

相对部分色散 Relative Partial Dispersions

$P_{s,t}$		$P'_{s,t}$	
$P_{C,s}$		$P'_{C',s}$	
$P_{d,C}$	0.2899	$P'_{d,C'}$	0.2409
$P_{e,d}$	0.2366	$P'_{e,d}$	0.2329
$P_{g,F}$	0.5993	$P'_{g,F'}$	0.5303
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$		$\Delta P_{C,s}$	
$\Delta P_{F,e}$	0.0006	$\Delta P_{g,F}$	0.0048

着色度 Color Code

λ_{80}/λ_5	410/370
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	467
T_s (℃)	519
$T_{10}^{14.5}$ (℃)	405
T_{10}^{13} (℃)	446
$T_{10}^{7.6}$(℃)	
$\alpha_{-30/70℃}$(10^{-7}/K)	73
$\alpha_{100/300℃}$(10^{-7}/K)	88
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	1
CR	
RC(S)	1
RA(S)	1

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.960	0.921
2200	0.967	0.935
2000	0.984	0.969
1800	0.991	0.982
1600	0.999	0.998
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.998	0.997
900	0.998	0.997
850	0.997	0.995
800	0.997	0.994
700	0.996	0.993
650	0.995	0.991
600	0.995	0.990
550	0.995	0.990
500	0.992	0.985
480	0.990	0.980
460	0.987	0.975
440	0.983	0.967
420	0.973	0.946
400	0.918	0.843
390	0.820	0.680
380	0.620	0.380
370	0.260	0.070
360		
350		
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties

H_K (10^7Pa)	405
F_A	115
E (10^7Pa)	6079
G (10^7Pa)	2466
μ	0.232
B (10^{-12}/Pa)	

其他性质 Other Properties

ρ (g/cm^3)	4.06

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20						
-20～0						
0～20						
20～40						
40～60						
60～80						
80～100						
100～120						
120～140						

CDGM

H-ZF12	762266	n_d = 1.761820	υ_d = 26.61	$n_F - n_C$ = 0.028631
		n_e = 1.768566	υ_e = 26.39	$n_{F'} - n_{C'}$ = 0.029121

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	1.708734
$n_{1970.09}$	1970.09	1.715313
$n_{1529.58}$	1529.58	1.722966
$n_{1060.0}$	1060.0	1.732864
n_t	1013.98	1.734208
n_s	852.11	1.740280
n_r	706.52	1.749115
n_C	656.27	1.753593
$n_{C'}$	643.85	1.754873
n_{He-Ne}	632.8	1.756079
n_D	589.29	1.761573
n_d	587.56	1.761820
n_e	546.07	1.768566
n_F	486.13	1.782224
$n_{F'}$	479.99	1.783994
n_g	435.83	1.799781
n_h	404.66	1.815616
n_i	365.01	
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

K_1	3.23730379E-01
L_1	5.98308169E-02
K_2	1.65668629E+00
L_2	1.20542686E-02
K_3	2.12141520E+00
L_3	1.74187920E+02

折射率温度系数常数 Constants of dn/dt

D_0	-3.00E-06
D_1	4.05E-09
D_2	-1.34E-10
E_0	9.31E-07
E_1	3.32E-09
λ_{TK}(μm)	0.293

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2121	$P'_{s,t}$	0.2085
$P_{C,s}$	0.4650	$P'_{C',s}$	0.5011
$P_{d,C}$	0.2873	$P'_{d,C'}$	0.2386
$P_{e,d}$	0.2356	$P'_{e,d}$	0.2317
$P_{g,F}$	0.6132	$P'_{g,F'}$	0.5421
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	0.0055	$\Delta P_{C,s}$	0.0004
$\Delta P_{F,e}$	0.0020	$\Delta P_{g,F}$	0.0128

着色度 Color Code

λ_{80}/λ_5	415/365
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	617
T_s (℃)	661
$T_{10^{14.5}}$ (℃)	574
$T_{10^{13}}$ (℃)	608
$T_{10^{7.6}}$(℃)	719
$\alpha_{-30/70℃}$(10^{-7}/K)	84
$\alpha_{100/300℃}$(10^{-7}/K)	101
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	1
CR	1
RC(S)	2
RA(S)	1

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.951	0.904
2200	0.967	0.935
2000	0.985	0.970
1800	0.991	0.982
1600	0.999	0.998
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.998	0.997
800	0.998	0.997
700	0.997	0.995
650	0.996	0.993
600	0.996	0.993
550	0.995	0.991
500	0.992	0.984
480	0.990	0.980
460	0.986	0.973
440	0.981	0.962
420	0.964	0.930
400	0.907	0.823
390	0.820	0.680
380	0.620	0.390
370	0.260	0.070
360		
350		
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties

H_K (10^7Pa)	538
F_A	155
E (10^7Pa)	9006
G (10^7Pa)	3611
μ	0.247
B (10^{-12}/Pa)	2.75

其他性质 Other Properties

ρ (g/cm^3)	3.17

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	-0.9	-0.3	0.9	1.5	3.1	3.0
-20～0	1.0	1.1	1.6	2.0	3.0	3.7
0～20	1.0	1.3	1.9	2.7	3.6	5.3
20～40	0.9	1.4	1.9	2.6	4.0	6.1
40～60	0.8	1.5	2.1	2.7	4.1	6.0
60～80	1.1	1.8	2.0	3.0	4.3	6.4
80～100						
100～120						
120～140						

CDGM

ZF12	762266	n_d = 1.76182	υ_d = 26.55	$n_F - n_C$ = 0.028692
		n_e = 1.76859	υ_e = 26.34	$n_{F'} - n_{C'}$ = 0.029178

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.73454
n_s	852.11	1.74045
n_r	706.52	1.74912
n_C	656.27	1.75357
$n_{C'}$	643.85	1.75485
n_{He-Ne}	632.8	1.75606
n_D	589.29	1.76158
n_d	587.56	1.76182
n_e	546.07	1.76859
n_F	486.13	1.78226
$n_{F'}$	479.99	1.78403
n_g	435.83	1.79968
n_h	404.66	1.81534
n_i	365.01	
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	2.9950699E+00
A_1	-1.6567252E-02
A_2	2.5670143E-02
A_3	6.7044513E-03
A_4	-8.3747665E-04
A_5	6.2640277E-05

折射率温度系数常数 Constants of dn/dt	
D_0	4.33E-06
D_1	2.64E-08
D_2	-2.01E-11
E_0	1.43E-06
E_1	1.62E-09
λ_{TK}(μm)	0.284

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2060	$P'_{s,t}$	0.2025
$P_{C,s}$	0.4573	$P'_{C',s}$	0.4935
$P_{d,C}$	0.2875	$P'_{d,C'}$	0.2389
$P_{e,d}$	0.2360	$P'_{e,d}$	0.2320
$P_{g,F}$	0.6071	$P'_{g,F'}$	0.5363
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	-0.0081	$\Delta P_{C,s}$	-0.0072
$\Delta P_{F,e}$	0.0014	$\Delta P_{g,F}$	0.0066

着色度 Color Code	
λ_{80}/λ_5	430/380
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	456
T_s (℃)	508
$T_{10^{14.5}}$ (℃)	404
$T_{10^{13}}$ (℃)	441
$T_{10^{7.6}}$(℃)	591
$\alpha_{-30/70℃}$(10^{-7}/K)	75
$\alpha_{100/300℃}$(10^{-7}/K)	89
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	3
CR	
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.967	0.936
2200	0.974	0.949
2000	0.987	0.974
1800	0.992	0.985
1600	0.998	0.996
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.997
700	0.998	0.997
650	0.998	0.996
600	0.998	0.996
550	0.997	0.995
500	0.994	0.989
480	0.991	0.983
460	0.987	0.974
440	0.977	0.955
420	0.951	0.904
400	0.840	0.710
390	0.680	0.460
380	0.370	0.140
370		
360		
350		
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	378
F_A	133
E (10^7Pa)	5851
G (10^7Pa)	2355
μ	0.242
B (10^{-12}/Pa)	

其他性质 Other Properties	
ρ (g/cm^3)	4.64

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	3.1	5.6	6.2	6.4	8.5	11.0
-20～0	4.2	6.4	6.7	7.5	9.5	11.0
0～20	4.7	6.5	7.6	8.1	9.7	11.9
20～40	5.6	7.0	7.6	8.6	10.5	12.7
40～60	5.7	7.2	8.0	9.0	11.0	13.6
60～80	6.5	7.4	8.4	10.9	11.7	15.6
80～100						
100～120						
120～140						

H-ZF13	785257	n_d = 1.784720	υ_d = 25.72	$n_F - n_C$ = 0.030510
		n_e = 1.791906	υ_e = 25.51	$n_{F'} - n_{C'}$ = 0.031041

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	1.729717
$n_{1970.09}$	1970.09	1.736237
$n_{1529.58}$	1529.58	1.743909
$n_{1060.0}$	1060.0	1.754085
n_t	1013.98	1.755488
n_s	852.11	1.761868
n_r	706.52	1.771216
n_C	656.27	1.775970
$n_{C'}$	643.85	1.777330
n_{He-Ne}	632.8	1.778613
n_D	589.29	1.784457
n_d	587.56	1.784720
n_e	546.07	1.791906
n_F	486.13	1.806480
$n_{F'}$	479.99	1.808371
n_g	435.83	1.825266
n_h	404.66	1.842268
n_i	365.01	
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
K_1	1.73521591E+00
L_1	1.31087904E-02
K_2	3.16277446E-01
L_2	6.21421663E-02
K_3	2.16384634E+00
L_3	1.78845558E+02

折射率温度系数常数 Constants of dn/dt	
D_0	-5.40E-06
D_1	1.34E-08
D_2	-3.56E-11
E_0	1.01E-06
E_1	1.25E-09
λ_{TK}(μm)	0.291

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2091	$P'_{s,t}$	0.2055
$P_{C,s}$	0.4622	$P'_{C',s}$	0.4981
$P_{d,C}$	0.2868	$P'_{d,C'}$	0.2381
$P_{e,d}$	0.2355	$P'_{e,d}$	0.2315
$P_{g,F}$	0.6157	$P'_{g,F'}$	0.5443
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0039	$\Delta P_{C,s}$	-0.0003
$\Delta P_{F,e}$	0.0022	$\Delta P_{g,F}$	0.0138

着色度 Color Code	
λ_{80}/λ_5	425/370
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	613
T_s (℃)	646
$T_{10^{14.5}}$ (℃)	556
$T_{10^{13}}$ (℃)	593
$T_{10^{7.6}}$(℃)	707
$\alpha_{-30/70℃}$(10^{-7}/K)	86
$\alpha_{100/300℃}$(10^{-7}/K)	106
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	1
CR	1
RC(S)	1
RA(S)	1

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.953	0.909
2200	0.972	0.944
2000	0.987	0.974
1800	0.993	0.987
1600	0.999	0.998
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.998	0.996
650	0.997	0.995
600	0.997	0.994
550	0.996	0.992
500	0.991	0.983
480	0.989	0.978
460	0.985	0.971
440	0.978	0.956
420	0.959	0.919
400	0.900	0.810
390	0.810	0.650
380	0.620	0.380
370	0.270	0.070
360		
350		
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	544
F_A	187
E (10^7Pa)	9196
G (10^7Pa)	3675
μ	0.251
B (10^{-12}/Pa)	2.73

其他性质 Other Properties	
ρ (g/cm^3)	3.25

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	-1.7	-0.5	-0.1	0.3	1.3	2.8
-40～-20	-1.4	-0.1	0.2	0.7	2.0	3.5
-20～0	-1.0	0.0	0.4	1.0	2.3	3.8
0～20	-0.9	0.1	0.6	1.2	2.5	4.1
20～40	-0.7	0.3	0.8	1.5	2.8	4.6
40～60	-0.7	0.4	1.0	1.6	3.1	4.8
60～80	-0.7	0.5	1.4	1.8	3.3	5.6
80～100	-0.7	0.9	1.5	1.8	3.4	5.6
100～120	-0.7	1.0	1.5	2.2	4.1	6.2
120～140	-0.6	1.1	1.6	2.4	4.2	6.3

CDGM

H-ZF13GT	785257	n_d = 1.784720	υ_d = 25.72	$n_F - n_C$ = 0.030510
		n_e = 1.791906	υ_e = 25.51	$n_{F'} - n_{C'}$ = 0.031041

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	1.729717
$n_{1970.09}$	1970.09	1.736237
$n_{1529.58}$	1529.58	1.743909
$n_{1060.0}$	1060.0	1.754085
n_t	1013.98	1.755488
n_s	852.11	1.761868
n_r	706.52	1.771216
n_C	656.27	1.775970
$n_{C'}$	643.85	1.777330
n_{He-Ne}	632.8	1.778613
n_D	589.29	1.784457
n_d	587.56	1.784720
n_e	546.07	1.791906
n_F	486.13	1.806480
$n_{F'}$	479.99	1.808371
n_g	435.83	1.825266
n_h	404.66	1.842268
n_i	365.01	
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
K_1	1.73521591E+00
L_1	1.31087904E-02
K_2	3.16277446E-01
L_2	6.21421663E-02
K_3	2.16384634E+00
L_3	1.78845558E+02

折射率温度系数常数 Constants of dn/dt	
D_0	-5.40E-06
D_1	1.34E-08
D_2	-3.56E-11
E_0	1.01E-06
E_1	1.25E-09
λ_{TK}(μm)	0.291

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2091	$P'_{s,t}$	0.2055
$P_{C,s}$	0.4622	$P'_{C',s}$	0.4981
$P_{d,C}$	0.2868	$P'_{d,C'}$	0.2381
$P_{e,d}$	0.2355	$P'_{e,d}$	0.2315
$P_{g,F}$	0.6157	$P'_{g,F'}$	0.5443
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0039	$\Delta P_{C,s}$	-0.0003
$\Delta P_{F,e}$	0.0022	$\Delta P_{g,F}$	0.0138

着色度 Color Code	
λ_{80}/λ_5	415/365
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	613
T_s (℃)	646
$T_{10^{14.5}}$ (℃)	556
$T_{10^{13}}$ (℃)	593
$T_{10^{7.6}}$(℃)	707
$\alpha_{-30/70℃}$(10^{-7}/K)	86
$\alpha_{100/300℃}$(10^{-7}/K)	106
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	1
CR	1
RC(S)	1
RA(S)	1

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.939	0.882
2200	0.961	0.924
2000	0.981	0.962
1800	0.988	0.977
1600	0.996	0.992
1400	0.997	0.995
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.997
700	0.998	0.996
650	0.997	0.995
600	0.997	0.994
550	0.996	0.992
500	0.991	0.982
480	0.989	0.978
460	0.986	0.972
440	0.982	0.964
420	0.972	0.945
400	0.937	0.878
390	0.880	0.775
380	0.720	0.519
370	0.346	0.120
360	0.122	0.015
350		
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	544
F_A	187
E (10^7Pa)	9196
G (10^7Pa)	3675
μ	0.251
B (10^{-12}/Pa)	2.73

其他性质 Other Properties	
ρ (g/cm^3)	3.25

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	-1.7	-0.5	-0.1	0.3	1.3	2.8
-40～-20	-1.4	-0.1	0.2	0.7	2.0	3.5
-20～0	-1.0	0.0	0.4	1.0	2.3	3.8
0～20	-0.9	0.1	0.6	1.2	2.5	4.1
20～40	-0.7	0.3	0.8	1.5	2.8	4.6
40～60	-0.7	0.4	1.0	1.6	3.1	4.8
60～80	-0.7	0.5	1.4	1.8	3.3	5.6
80～100	-0.7	0.9	1.5	1.8	3.4	5.6
100～120	-0.7	1.0	1.5	2.2	4.1	6.2
120～140	-0.6	1.1	1.6	2.4	4.2	6.3

ZF13	785258	n_d = 1.78472	υ_d = 25.76	$n_F - n_C$ = 0.030468
		n_e = 1.79190	υ_e = 25.55	$n_{F'} - n_{C'}$ = 0.030998

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.75585
n_s	852.11	1.76206
n_r	706.52	1.77125
n_C	656.27	1.77598
$n_{C'}$	643.85	1.77734
n_{He-Ne}	632.8	1.77862
n_D	589.29	1.78446
n_d	587.56	1.78472
n_e	546.07	1.79190
n_F	486.13	1.80645
$n_{F'}$	479.99	1.80834
n_g	435.83	1.82503
n_h	404.66	1.84170
n_i	365.01	
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

A_0	3.0616124E+00
A_1	-1.4589514E-02
A_2	3.2814659E-02
A_3	5.2398995E-03
A_4	-5.6050549E-04
A_5	4.6423413E-05

折射率温度系数常数 Constants of dn/dt

D_0	3.70E-06
D_1	2.35E-08
D_2	-1.53E-10
E_0	1.59E-06
E_1	6.42E-10
λ_{TK}(μm)	0.278

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2038	$P'_{s,t}$	0.2003
$P_{C,s}$	0.4569	$P'_{C',s}$	0.4929
$P_{d,C}$	0.2867	$P'_{d,C'}$	0.2380
$P_{e,d}$	0.2357	$P'_{e,d}$	0.2317
$P_{g,F}$	0.6098	$P'_{g,F'}$	0.5384
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	-0.0069	$\Delta P_{C,s}$	-0.0057
$\Delta P_{F,e}$	0.0022	$\Delta P_{g,F}$	0.0080

着色度 Color Code

λ_{80}/λ_5	430/370
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	433
T_s (℃)	478
$T_{10^{14.5}}$ (℃)	385
$T_{10^{13}}$ (℃)	420
$T_{10^{7.6}}$(℃)	553
$\alpha_{-30/70℃}$(10^{-7}/K)	78
$\alpha_{100/300℃}$(10^{-7}/K)	96
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	3
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.962	0.926
2200	0.974	0.949
2000	0.987	0.974
1800	0.992	0.984
1600	0.997	0.995
1400	0.998	0.996
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.999	0.998
650	0.998	0.996
600	0.998	0.996
550	0.998	0.997
500	0.994	0.988
480	0.989	0.979
460	0.984	0.968
440	0.973	0.947
420	0.951	0.904
400	0.868	0.754
390	0.753	0.567
380	0.506	0.256
370	0.158	0.025
360		
350		
340		
330		
320		
310		
300		
290		
280		

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	3.5	5.4	6.6	7.3	8.6	10.5
-20～0	4.0	5.9	6.6	7.4	9.6	12.4
0～20	4.7	6.3	7.3	8.1	10.6	12.9
20～40	5.1	6.9	7.4	8.6	10.9	13.4
40～60	5.1	7.3	8.0	8.7	10.9	13.5
60～80	5.0	7.5	8.0	8.8	11.1	13.7
80～100						
100～120						
120～140						

机械性质 Mechanical Properties

H_K (10^7Pa)	390
F_A	152
E (10^7Pa)	5733
G (10^7Pa)	2301
μ	0.246
B (10^{-12}/Pa)	1.11

其他性质 Other Properties

ρ (g/cm^3)	4.87

备注 Remarks

CDGM

H-ZF39	667331	n_d = 1.666800	υ_d = 33.05	$n_F - n_C$ = 0.020173
		n_e = 1.671569	υ_e = 32.80	$n_{F'} - n_{C'}$ = 0.020475

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	1.625537
$n_{1970.09}$	1970.09	1.631273
$n_{1529.58}$	1529.58	1.637743
$n_{1060.0}$	1060.0	1.645620
n_t	1013.98	1.646647
n_s	852.11	1.651209
n_r	706.52	1.657685
n_C	656.27	1.660920
$n_{C'}$	643.85	1.661840
n_{He-Ne}	632.8	1.662705
n_D	589.29	1.666625
n_d	587.56	1.666800
n_e	546.07	1.671569
n_F	486.13	1.681093
$n_{F'}$	479.99	1.682315
n_g	435.83	1.693107
n_h	404.66	1.703739
n_i	365.01	1.723617
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

K_1	1.53633529E-01
L_1	6.03806210E-02
K_2	1.54070508E+00
L_2	1.18591415E-02
K_3	1.20956745E+00
L_3	1.19979606E+02

折射率温度系数常数 Constants of dn/dt

D_0	-4.14E-06
D_1	1.44E-08
D_2	-6.69E-11
E_0	8.18E-07
E_1	9.54E-10
λ_{TK}(μm)	0.274

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2261	$P'_{s,t}$	0.2228
$P_{C,s}$	0.4814	$P'_{C',s}$	0.5192
$P_{d,C}$	0.2915	$P'_{d,C'}$	0.2422
$P_{e,d}$	0.2364	$P'_{e,d}$	0.2329
$P_{g,F}$	0.5955	$P'_{g,F'}$	0.5271
$P_{i,h}$	0.9854	$P'_{i,h}$	0.9708

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	0.0055	$\Delta P_{C,s}$	0.0015
$\Delta P_{F,e}$	0.0006	$\Delta P_{g,F}$	0.0061

着色度 Color Code

λ_{80}/λ_5	400/360
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	582
T_s (℃)	621
$T_{10^{14.5}}$ (℃)	524
$T_{10^{13}}$ (℃)	562
$T_{10^{7.6}}$(℃)	682
$\alpha_{-30/70℃}$(10^{-7}/K)	90
$\alpha_{100/300℃}$(10^{-7}/K)	112
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	1
CR	1
RC(S)	2
RA(S)	1

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.916	0.839
2200	0.941	0.885
2000	0.971	0.942
1800	0.985	0.969
1600	0.998	0.996
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.998	0.997
650	0.998	0.996
600	0.998	0.996
550	0.998	0.996
500	0.996	0.991
480	0.994	0.989
460	0.993	0.985
440	0.990	0.980
420	0.984	0.968
400	0.961	0.924
390	0.927	0.859
380	0.840	0.705
370	0.610	0.373
360	0.201	0.040
350		
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties

H_K (10^7Pa)	531
F_A	168
E (10^7Pa)	8282
G (10^7Pa)	3318
μ	0.248
B (10^{-12}/Pa)	2.54

其他性质 Other Properties

ρ (g/cm^3)	2.92

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	-0.1	0.2	0.7	0.6	1.4	2.1
-40～-20	-1.0	0.2	0.3	0.6	1.4	2.5
-20～0	-0.4	0.0	0.5	1.1	1.8	2.9
0～20	-0.1	0.5	0.9	1.2	2.0	3.0
20～40	-0.5	0.8	1.0	1.3	2.4	3.5
40～60	0.0	0.9	1.2	1.7	2.6	3.6
60～80	0.3	0.9	1.3	1.8	2.6	3.6
80～100	-0.4	0.6	1.0	1.4	2.6	3.9
100～120	-0.1	0.8	1.2	1.6	2.6	4.0
120～140	-0.4	0.7	1.0	1.5	2.5	3.9

H-ZF50	741278	n_d = 1.74077	υ_d = 27.76	$n_F - n_C$ = 0.026685
		n_e = 1.74707	υ_e = 27.54	$n_{F'} - n_{C'}$ = 0.027125

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.71485
n_s	852.11	1.72060
n_r	706.52	1.72888
n_C	656.27	1.73307
$n_{C'}$	643.85	1.73427
n_{He-Ne}	632.8	1.73540
n_D	589.29	1.74054
n_d	587.56	1.74077
n_e	546.07	1.74707
n_F	486.13	1.75976
$n_{F'}$	479.99	1.76139
n_g	435.83	1.77599
n_h	404.66	1.79061
n_i	365.01	
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	2.9236095E+00
A_1	-1.4976039E-02
A_2	3.0023290E-02
A_3	3.8613679E-03
A_4	-4.2115845E-04
A_5	3.8661270E-05

折射率温度系数常数 Constants of dn/dt	
D_0	-4.21E-06
D_1	1.99E-08
D_2	-3.00E-11
E_0	8.92E-07
E_1	3.64E-10
λ_{TK}(μm)	0.294

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2155	$P'_{s,t}$	0.2120
$P_{C,s}$	0.4673	$P'_{C',s}$	0.5040
$P_{d,C}$	0.2886	$P'_{d,C'}$	0.2396
$P_{e,d}$	0.2361	$P'_{e,d}$	0.2323
$P_{g,F}$	0.6082	$P'_{g,F'}$	0.5382
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0057	$\Delta P_{C,s}$	0.0000
$\Delta P_{F,e}$	0.0012	$\Delta P_{g,F}$	0.0098

着色度 Color Code	
λ_{80}/λ_5	410/365
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	603
T_s (℃)	643
$T_{10}^{14.5}$ (℃)	553
T_{10}^{13} (℃)	584
$T_{10}^{7.6}$(℃)	699
$\alpha_{-30/70℃}$(10^{-7}/K)	95
$\alpha_{100/300℃}$(10^{-7}/K)	113
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	1
CR	1
RC(S)	1
RA(S)	1

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.934	0.872
2200	0.956	0.913
2000	0.979	0.958
1800	0.987	0.975
1600	0.995	0.991
1400	0.997	0.994
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.997
700	0.997	0.995
650	0.996	0.993
600	0.997	0.994
550	0.996	0.993
500	0.992	0.985
480	0.991	0.982
460	0.987	0.975
440	0.983	0.967
420	0.974	0.948
400	0.938	0.879
390	0.885	0.784
380	0.741	0.549
370	0.420	0.176
360		
350		
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	528
F_A	178
E (10^7Pa)	8880
G (10^7Pa)	3538
μ	0.255
B (10^{-12}/Pa)	2.65

其他性质 Other Properties	
ρ (g/cm^3)	3.10

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	-1.2	0.3	0.7	1.0	2.2	3.5
-20～0	-1.0	0.5	0.9	1.1	2.4	3.8
0～20	-0.4	0.7	1.0	1.5	2.6	4.2
20～40	0.1	0.8	1.2	1.9	3.0	4.4
40～60	0.3	0.9	1.5	2.1	3.2	4.8
60～80	0.4	1.1	1.6	2.2	3.7	5.6
80～100						
100～120						
120～140						

ZF50	741278	n_d = 1.74077	υ_d = 27.76	$n_F - n_C$ = 0.026681
		n_e = 1.74706	υ_e = 27.55	$n_{F'} - n_{C'}$ = 0.027118

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.71513
n_s	852.11	1.72071
n_r	706.52	1.72889
n_C	656.27	1.73307
$n_{C'}$	643.85	1.73427
n_{He-Ne}	632.8	1.73540
n_D	589.29	1.74054
n_d	587.56	1.74077
n_e	546.07	1.74706
n_F	486.13	1.75975
$n_{F'}$	479.99	1.76139
n_g	435.83	1.77585
n_h	404.66	1.79021
n_i	365.01	
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

A_0	2.9228084E+00
A_1	-1.3029549E-02
A_2	2.9540007E-02
A_3	4.1308365E-03
A_4	-4.4721542E-04
A_5	3.7137603E-05

折射率温度系数常数 Constants of dn/dt

D_0	3.66E-06
D_1	2.91E-08
D_2	-3.18E-10
E_0	1.58E-06
E_1	6.74E-10
λ_{TK}(μm)	0.244

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2091	$P'_{s,t}$	0.2058
$P_{C,s}$	0.4633	$P'_{C',s}$	0.5000
$P_{d,C}$	0.2886	$P'_{d,C'}$	0.2397
$P_{e,d}$	0.2358	$P'_{e,d}$	0.2320
$P_{g,F}$	0.6035	$P'_{g,F'}$	0.5333
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	-0.0047	$\Delta P_{C,s}$	-0.0041
$\Delta P_{F,e}$	0.0012	$\Delta P_{g,F}$	0.0050

着色度 Color Code

λ_{80}/λ_5	410/365
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	449
T_s (℃)	491
$T_{10^{14.5}}$ (℃)	388
$T_{10^{13}}$ (℃)	426
$T_{10^{7.6}}$(℃)	
$\alpha_{-30/70℃}$(10^{-7}/K)	71
$\alpha_{100/300℃}$(10^{-7}/K)	87
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	2
CR	
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.948	0.898
2200	0.962	0.925
2000	0.982	0.965
1800	0.990	0.981
1600	0.997	0.995
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.998	0.997
650	0.998	0.997
600	0.998	0.996
550	0.998	0.996
500	0.996	0.992
480	0.994	0.989
460	0.991	0.983
440	0.986	0.973
420	0.972	0.944
400	0.904	0.818
390	0.790	0.630
380	0.550	0.300
370	0.190	0.030
360		
350		
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties

H_K (10^7Pa)	375
F_A	131
E (10^7Pa)	5973
G (10^7Pa)	2411
μ	0.238
B (10^{-12}/Pa)	

其他性质 Other Properties

ρ (g/cm^3)	4.46

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	-0.1	1.1	1.5	2.4	2.8	5.4
-20～0	2.0	3.0	3.9	4.3	6.9	7.7
0～20	2.8	4.7	5.0	6.0	7.6	9.3
20～40	3.0	5.0	5.5	6.3	7.8	10.1
40～60	3.3	5.1	5.8	6.3	7.8	10.1
60～80	4.0	5.7	6.3	6.9	8.4	10.5
80～100						
100～120						
120～140						

CDGM

ZF51	785261	n_d = 1.78470	υ_d = 26.08	$n_F - n_C$ = 0.030092
		n_e = 1.79180	υ_e = 25.87	$n_{F'} - n_{C'}$ = 0.030602

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.75614
n_s	852.11	1.76227
n_r	706.52	1.77137
n_C	656.27	1.77605
$n_{C'}$	643.85	1.77739
n_{He-Ne}	632.8	1.77866
n_D	589.29	1.78444
n_d	587.56	1.78470
n_e	546.07	1.79180
n_F	486.13	1.80614
$n_{F'}$	479.99	1.80800
n_g	435.83	1.82439
n_h	404.66	1.84067
n_i	365.01	
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	3.0618708E+00
A_1	-1.3873356E-02
A_2	3.2985222E-02
A_3	5.0714158E-03
A_4	-5.3860663E-04
A_5	4.3608925E-05

折射率温度系数常数 Constants of dn/dt	
D_0	3.80E-06
D_1	2.76E-08
D_2	-6.03E-11
E_0	1.60E-06
E_1	1.02E-09
λ_{TK}(μm)	0.279

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2037	$P'_{s,t}$	0.2003
$P_{C,s}$	0.4579	$P'_{C',s}$	0.4941
$P_{d,C}$	0.2875	$P'_{d,C'}$	0.2388
$P_{e,d}$	0.2359	$P'_{e,d}$	0.2319
$P_{g,F}$	0.6065	$P'_{g,F'}$	0.5356
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	-0.0075	$\Delta P_{C,s}$	-0.0054
$\Delta P_{F,e}$	0.0013	$\Delta P_{g,F}$	0.0052

着色度 Color Code	
λ_{80}/λ_5	420/360
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	416
T_s (℃)	450
$T_{10}^{14.5}$ (℃)	361
T_{10}^{13} (℃)	393
$T_{10}^{7.6}$(℃)	541
$\alpha_{-30/70℃}$(10^{-7}/K)	82
$\alpha_{100/300℃}$(10^{-7}/K)	102
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	3
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.955	0.912
2200	0.970	0.940
2000	0.984	0.969
1800	0.991	0.983
1600	0.997	0.995
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.997
700	0.998	0.996
650	0.997	0.994
600	0.997	0.994
550	0.996	0.993
500	0.993	0.987
480	0.990	0.981
460	0.986	0.972
440	0.978	0.957
420	0.961	0.923
400	0.910	0.829
390	0.850	0.730
380	0.760	0.580
370	0.570	0.330
360	0.260	0.070
350		
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	354
F_A	162
E (10^7Pa)	5596
G (10^7Pa)	2245
μ	0.247
B (10^{-12}/Pa)	0.92

其他性质 Other Properties	
ρ (g/cm^3)	4.99

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	3.5	5.6	6.0	6.6	8.3	11.3
-20～0	4.4	6.3	7.5	7.9	9.9	12.1
0～20	4.5	6.3	7.5	7.9	10.2	13.1
20～40	5.0	6.6	7.8	8.8	11.3	13.5
40～60	5.6	7.5	8.4	9.2	11.9	14.1
60～80	6.2	7.9	9.0	9.7	12.4	14.5
80～100						
100～120						
120～140						

CDGM

H-ZF52	847238	n_d = 1.846660	υ_d = 23.78	$n_F - n_C$ = 0.035597
		n_e = 1.855037	υ_e = 23.60	$n_{F'} - n_{C'}$ = 0.036238

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	1.785225
$n_{1970.09}$	1970.09	1.792032
$n_{1529.58}$	1529.58	1.800181
$n_{1060.0}$	1060.0	1.811397
n_t	1013.98	1.812979
n_s	852.11	1.820237
n_r	706.52	1.830994
n_C	656.27	1.836496
$n_{C'}$	643.85	1.838073
n_{He-Ne}	632.8	1.839561
n_D	589.29	1.846354
n_d	587.56	1.846660
n_e	546.07	1.855037
n_F	486.13	1.872093
$n_{F'}$	479.99	1.874311
n_g	435.83	1.894189
n_h	404.66	1.914282
n_i	365.01	
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

K_1	4.09982615E-01
L_1	6.21421199E-02
K_2	2.37517176E+00
L_2	1.85055134E+02
K_3	1.83913582E+00
L_3	1.36093459E-02

折射率温度系数常数 Constants of dn/dt

D_0	-6.18E-06
D_1	1.63E-08
D_2	-4.50E-11
E_0	1.12E-06
E_1	1.19E-09
λ_{TK}(μm)	0.291

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2039	$P'_{s,t}$	0.2003
$P_{C,s}$	0.4568	$P'_{C',s}$	0.4922
$P_{d,C}$	0.2855	$P'_{d,C'}$	0.2370
$P_{e,d}$	0.2353	$P'_{e,d}$	0.2312
$P_{g,F}$	0.6207	$P'_{g,F'}$	0.5485
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	0.0023	$\Delta P_{C,s}$	-0.0012
$\Delta P_{F,e}$	0.0026	$\Delta P_{g,F}$	0.0155

着色度 Color Code

λ_{80}/λ_5	
λ_{70}/λ_5	410/370

热性质 Thermal Properties

T_g (℃)	626
T_s (℃)	653
$T_{10}^{14.5}$ (℃)	572
T_{10}^{13} (℃)	605
$T_{10}^{7.6}$(℃)	711
$\alpha_{-30/70℃}$(10^{-7}/K)	88
$\alpha_{100/300℃}$(10^{-7}/K)	108
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	1
CR	1
RC(S)	2
RA(S)	1

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.943	0.890
2200	0.969	0.939
2000	0.983	0.966
1800	0.989	0.979
1600	0.996	0.992
1400	0.997	0.995
1200	0.999	0.998
1060	0.998	0.997
1000	0.998	0.997
950	0.998	0.997
900	0.998	0.997
850	0.998	0.997
800	0.996	0.994
700	0.995	0.991
650	0.995	0.990
600	0.995	0.991
550	0.993	0.987
500	0.986	0.973
480	0.982	0.964
460	0.976	0.953
440	0.965	0.931
420	0.947	0.896
400	0.888	0.789
390	0.813	0.661
380	0.643	0.413
370	0.300	0.090
360		
350		
340		
330		
320		
310		
300		
290		
280		

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	-2.1	-0.7	-0.3	0.1	1.6	3.1
-40～-20	-2.0	-0.7	-0.1	0.4	1.9	3.3
-20～0	-1.9	-0.5	0.0	0.6	2.0	4.1
0～20	-1.9	-0.4	0.1	0.7	2.5	4.5
20～40	-1.4	0.1	0.6	1.5	3.0	5.2
40～60	-1.1	0.3	1.0	1.8	3.4	5.5
60～80	-1.0	0.6	1.0	2.0	3.5	5.8
80～100	-0.9	0.6	1.2	2.1	3.9	6.4
100～120	-0.9	0.7	1.4	2.1	4.1	7.0
120～140	-0.8	0.7	1.5	2.2	4.5	7.3

机械性质 Mechanical Properties

H_K (10^7Pa)	555
F_A	185
E (10^7Pa)	9478
G (10^7Pa)	3742
μ	0.266
B (10^{-12}/Pa)	2.71

其他性质 Other Properties

ρ (g/cm^3)	3.51

备注 Remarks

CDGM

H-ZF52GT	847238	n_d = 1.846660	υ_d = 23.78	$n_F - n_C$ = 0.035597
		n_e = 1.855037	υ_e = 23.60	$n_{F'} - n_{C'}$ = 0.036238

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	1.785225
$n_{1970.09}$	1970.09	1.792032
$n_{1529.58}$	1529.58	1.800181
$n_{1060.0}$	1060.0	1.811397
n_t	1013.98	1.812979
n_s	852.11	1.820237
n_r	706.52	1.830994
n_C	656.27	1.836496
$n_{C'}$	643.85	1.838073
n_{He-Ne}	632.8	1.839561
n_D	589.29	1.846354
n_d	587.56	1.846660
n_e	546.07	1.855037
n_F	486.13	1.872093
$n_{F'}$	479.99	1.874311
n_g	435.83	1.894189
n_h	404.66	1.914282
n_i	365.01	
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

K_1	4.09982615E-01
L_1	6.21421199E-02
K_2	2.37517176E+00
L_2	1.85055134E+02
K_3	1.83913582E+00
L_3	1.36093459E-02

折射率温度系数常数 Constants of dn/dt

D_0	-6.18E-06
D_1	1.63E-08
D_2	-4.50E-11
E_0	1.12E-06
E_1	1.19E-09
λ_{TK}(μm)	0.291

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2039	$P'_{s,t}$	0.2003
$P_{C,s}$	0.4568	$P'_{C',s}$	0.4922
$P_{d,C}$	0.2855	$P'_{d,C'}$	0.2370
$P_{e,d}$	0.2353	$P'_{e,d}$	0.2312
$P_{g,F}$	0.6207	$P'_{g,F'}$	0.5485
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	0.0023	$\Delta P_{C,s}$	-0.0012
$\Delta P_{F,e}$	0.0026	$\Delta P_{g,F}$	0.0155

着色度 Color Code

λ_{80}/λ_5	
λ_{70}/λ_5	403/370

热性质 Thermal Properties

T_g (℃)	626
T_s (℃)	653
$T_{10}^{14.5}$ (℃)	572
T_{10}^{13} (℃)	605
$T_{10}^{7.6}$(℃)	711
$\alpha_{-30/70℃}$(10^{-7}/K)	88
$\alpha_{100/300℃}$(10^{-7}/K)	108
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	1
CR	1
RC(S)	2
RA(S)	1

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.938	0.879
2200	0.966	0.933
2000	0.981	0.962
1800	0.988	0.977
1600	0.995	0.991
1400	0.997	0.995
1200	0.999	0.998
1060	0.998	0.997
1000	0.998	0.997
950	0.998	0.997
900	0.998	0.997
850	0.998	0.997
800	0.997	0.994
700	0.996	0.993
650	0.996	0.992
600	0.995	0.991
550	0.993	0.987
500	0.988	0.977
480	0.986	0.972
460	0.982	0.964
440	0.975	0.950
420	0.960	0.922
400	0.911	0.830
390	0.848	0.719
380	0.668	0.446
370	0.300	0.090
360		
350		
340		
330		
320		
310		
300		
290		
280		

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	-2.1	-0.7	-0.3	0.1	1.6	3.1
-40～-20	-2.0	-0.7	-0.1	0.4	1.9	3.3
-20～0	-1.9	-0.5	0.0	0.6	2.0	4.1
0～20	-1.9	-0.4	0.1	0.7	2.5	4.5
20～40	-1.4	0.1	0.6	1.5	3.0	5.2
40～60	-1.1	0.3	1.0	1.8	3.4	5.5
60～80	-1.0	0.6	1.0	2.0	3.5	5.8
80～100	-0.9	0.6	1.2	2.1	3.9	6.4
100～120	-0.9	0.7	1.4	2.1	4.1	7.0
120～140	-0.8	0.7	1.5	2.2	4.5	7.3

机械性质 Mechanical Properties

H_K (10^7Pa)	555
F_A	185
E (10^7Pa)	9478
G (10^7Pa)	3742
μ	0.266
B (10^{-12}/Pa)	2.71

其他性质 Other Properties

ρ (g/cm^3)	3.51

备注 Remarks

CDGM

H-ZF52TT	847238	n_d = 1.846660	υ_d = 23.78	$n_F - n_C$ = 0.035597
		n_e = 1.855037	υ_e = 23.60	$n_{F'} - n_{C'}$ = 0.036238

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	1.785225
$n_{1970.09}$	1970.09	1.792032
$n_{1529.58}$	1529.58	1.800181
$n_{1060.0}$	1060.0	1.811397
n_t	1013.98	1.812979
n_s	852.11	1.820237
n_r	706.52	1.830994
n_C	656.27	1.836496
$n_{C'}$	643.85	1.838073
n_{He-Ne}	632.8	1.839561
n_D	589.29	1.846354
n_d	587.56	1.846660
n_e	546.07	1.855037
n_F	486.13	1.872093
$n_{F'}$	479.99	1.874311
n_g	435.83	1.894189
n_h	404.66	1.914282
n_i	365.01	
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

K_1	4.09982615E-01
L_1	6.21421199E-02
K_2	2.37517176E+00
L_2	1.85055134E+02
K_3	1.83913582E+00
L_3	1.36093459E-02

折射率温度系数常数 Constants of dn/dt

D_0	-6.18E-06
D_1	1.63E-08
D_2	-4.50E-11
E_0	1.12E-06
E_1	1.19E-09
λ_{TK}(μm)	0.291

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2039	$P'_{s,t}$	0.2003
$P_{C,s}$	0.4568	$P'_{C',s}$	0.4922
$P_{d,C}$	0.2855	$P'_{d,C'}$	0.2370
$P_{e,d}$	0.2353	$P'_{e,d}$	0.2312
$P_{g,F}$	0.6207	$P'_{g,F'}$	0.5485
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	0.0023	$\Delta P_{C,s}$	-0.0012
$\Delta P_{F,e}$	0.0026	$\Delta P_{g,F}$	0.0155

着色度 Color Code

λ_{80}/λ_5	
λ_{70}/λ_5	400/370

热性质 Thermal Properties

T_g (℃)	626
T_s (℃)	653
$T_{10}^{14.5}$ (℃)	572
T_{10}^{13} (℃)	605
$T_{10}^{7.6}$(℃)	711
$\alpha_{-30/70℃}$(10^{-7}/K)	88
$\alpha_{100/300℃}$(10^{-7}/K)	108
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	1
CR	1
RC(S)	2
RA(S)	1

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.943	0.890
2200	0.969	0.939
2000	0.983	0.966
1800	0.989	0.979
1600	0.996	0.992
1400	0.997	0.995
1200	0.999	0.998
1060	0.998	0.997
1000	0.998	0.997
950	0.998	0.997
900	0.998	0.997
850	0.998	0.997
800	0.997	0.994
700	0.996	0.993
650	0.995	0.990
600	0.995	0.990
550	0.994	0.988
500	0.989	0.979
480	0.987	0.974
460	0.983	0.967
440	0.977	0.954
420	0.964	0.929
400	0.922	0.850
390	0.850	0.722
380	0.668	0.446
370	0.283	0.080
360		
350		
340		
330		
320		
310		
300		
290		
280		

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	-2.1	-0.7	-0.3	0.1	1.6	3.1
-40～-20	-2.0	-0.7	-0.1	0.4	1.9	3.3
-20～0	-1.9	-0.5	0.0	0.6	2.0	4.1
0～20	-1.9	-0.4	0.1	0.7	2.5	4.5
20～40	-1.4	0.1	0.6	1.5	3.0	5.2
40～60	-1.1	0.3	1.0	1.8	3.4	5.5
60～80	-1.0	0.6	1.0	2.0	3.5	5.8
80～100	-0.9	0.6	1.2	2.1	3.9	6.4
100～120	-0.9	0.7	1.4	2.1	4.1	7.0
120～140	-0.8	0.7	1.5	2.2	4.5	7.3

机械性质 Mechanical Properties

H_K (10^7Pa)	555
F_A	185
E (10^7Pa)	9478
G (10^7Pa)	3742
μ	0.266
B (10^{-12}/Pa)	2.71

其他性质 Other Properties

ρ (g/cm^3)	3.51

备注 Remarks

CDGM

H-ZF52A	847238	n_d = 1.84666	υ_d = 23.78	$n_F - n_C$ = 0.035597
		n_e = 1.85505	υ_e = 23.60	$n_{F'} - n_{C'}$ = 0.036234

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.81297
n_s	852.11	1.82020
n_r	706.52	1.83098
n_C	656.27	1.83649
$n_{C'}$	643.85	1.83807
n_{He-Ne}	632.8	1.83956
n_D	589.29	1.84636
n_d	587.56	1.84666
n_e	546.07	1.85505
n_F	486.13	1.87209
$n_{F'}$	479.99	1.87430
n_g	435.83	1.89417
n_h	404.66	1.91428
n_i	365.01	
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

A_0	3.2506862E+00
A_1	-1.3394222E-02
A_2	4.8362591E-02
A_3	3.1444275E-03
A_4	-1.9707367E-04
A_5	3.4764568E-05

折射率温度系数常数 Constants of dn/dt

D_0	-6.90E-06
D_1	1.71E-08
D_2	-4.57E-11
E_0	1.16E-06
E_1	8.99E-10
λ_{TK}(μm)	0.285

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2031	$P'_{s,t}$	0.1995
$P_{C,s}$	0.4576	$P'_{C',s}$	0.4932
$P_{d,C}$	0.2857	$P'_{d,C'}$	0.2372
$P_{e,d}$	0.2356	$P'_{e,d}$	0.2314
$P_{g,F}$	0.6203	$P'_{g,F'}$	0.5484
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	0.0024	$\Delta P_{C,s}$	-0.0003
$\Delta P_{F,e}$	0.0022	$\Delta P_{g,F}$	0.0151

着色度 Color Code

λ_{80}/λ_5	
λ_{70}/λ_5	405/370

热性质 Thermal Properties

T_g (℃)	623
T_s (℃)	649
$T_{10}^{14.5}$ (℃)	572
T_{10}^{13} (℃)	605
$T_{10}^{7.6}$(℃)	709
$\alpha_{-30/70℃}$(10^{-7}/K)	84
$\alpha_{100/300℃}$(10^{-7}/K)	104
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	1
CR	1
RC(S)	2
RA(S)	1

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.947	0.896
2200	0.971	0.943
2000	0.985	0.970
1800	0.992	0.985
1600	0.999	0.998
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.998	0.996
650	0.997	0.994
600	0.996	0.993
550	0.994	0.989
500	0.987	0.975
480	0.983	0.966
460	0.976	0.953
440	0.963	0.928
420	0.934	0.872
400	0.860	0.740
390	0.770	0.590
380	0.570	0.330
370	0.220	0.050
360		
350		
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties

H_K (10^7Pa)	550
F_A	213
E (10^7Pa)	9671
G (10^7Pa)	3821
μ	0.266
B (10^{-12}/Pa)	

其他性质 Other Properties

ρ (g/cm^3)	3.52

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	-2.6	-1.0	-0.7	-0.3	1.3	3.1
-20～0	-2.4	-0.9	-0.5	0.3	1.9	3.6
0～20	-2.0	-0.8	-0.3	0.8	2.3	4.1
20～40	-1.8	-0.4	0.1	1.1	2.5	4.4
40～60	-1.4	-0.3	0.3	1.3	2.9	5.0
60～80	-1.2	-0.1	0.7	1.4	3.1	5.8
80～100						
100～120						
120～140						

ZF52	847238	n_d = 1.84666	υ_d = 23.83	$n_F - n_C$ = 0.035534
		n_e = 1.85504	υ_e = 23.64	$n_{F'} - n_{C'}$ = 0.036165

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.81330
n_s	852.11	1.82034
n_r	706.52	1.83102
n_C	656.27	1.83651
$n_{C'}$	643.85	1.83808
n_{He-Ne}	632.8	1.83957
n_D	589.29	1.84636
n_d	587.56	1.84666
n_e	546.07	1.85504
n_F	486.13	1.87205
$n_{F'}$	479.99	1.87425
n_g	435.83	1.89405
n_h	404.66	1.91394
n_i	365.01	1.95210
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	3.2426450E+00
A_1	-7.7954583E-03
A_2	5.3380862E-02
A_3	1.5115415E-03
A_4	7.2219474E-05
A_5	1.6602659E-05

折射率温度系数常数 Constants of dn/dt	
D_0	5.94E-06
D_1	2.59E-08
D_2	-2.29E-10
E_0	1.88E-06
E_1	1.39E-09
λ_{TK}(μm)	0.284

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.1981	$P'_{s,t}$	0.1947
$P_{C,s}$	0.4551	$P'_{C',s}$	0.4905
$P_{d,C}$	0.2857	$P'_{d,C'}$	0.2372
$P_{e,d}$	0.2358	$P'_{e,d}$	0.2317
$P_{g,F}$	0.6191	$P'_{g,F'}$	0.5475
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	-0.0053	$\Delta P_{C,s}$	-0.0030
$\Delta P_{F,e}$	0.0020	$\Delta P_{g,F}$	0.0140

着色度 Color Code	
λ_{80}/λ_5	
λ_{70}/λ_5	405/365

热性质 Thermal Properties	
T_g (℃)	409
T_s (℃)	447
$T_{10}^{14.5}$ (℃)	377
T_{10}^{13} (℃)	408
$T_{10}^{7.6}$(℃)	525
$\alpha_{-30/70℃}$(10^{-7}/K)	86
$\alpha_{100/300℃}$(10^{-7}/K)	99
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	6
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.961	0.924
2200	0.977	0.954
2000	0.988	0.977
1800	0.995	0.990
1600	0.999	0.998
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.996
700	0.998	0.997
650	0.998	0.997
600	0.998	0.997
550	0.998	0.997
500	0.996	0.993
480	0.995	0.990
460	0.991	0.983
440	0.984	0.969
420	0.964	0.930
400	0.903	0.820
390	0.830	0.690
380	0.678	0.460
370	0.400	0.160
360	0.100	0.010
350		
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	323
F_A	192
E (10^7Pa)	5282
G (10^7Pa)	2107
μ	0.253
B (10^{-12}/Pa)	0.09

其他性质 Other Properties	
ρ (g/cm^3)	5.49

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	5.4	7.0	8.8	9.2	11.4	13.9
-20～0	5.8	7.5	8.8	10.1	12.2	16.0
0～20	5.8	9.0	10.0	10.8	13.5	17.8
20～40	6.7	9.4	10.2	11.3	15.0	18.0
40～60	7.0	9.4	10.3	11.6	15.2	17.7
60～80	7.7	9.5	10.6	12.1	15.3	18.9
80～100						
100～120						
120～140						

H-ZF62	923209	n_d = 1.922860	υ_d = 20.88	$n_F - n_C$ = 0.044198
		n_e = 1.933224	υ_e = 20.70	$n_{F'} - n_{C'}$ = 0.045079

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	1.848882
$n_{1970.09}$	1970.09	1.856987
$n_{1529.58}$	1529.58	1.866679
$n_{1060.0}$	1060.0	1.880056
n_t	1013.98	1.881950
n_s	852.11	1.890672
n_r	706.52	1.903689
n_C	656.27	1.910392
$n_{C'}$	643.85	1.912319
n_{He-Ne}	632.8	1.914140
n_D	589.29	1.922483
n_d	587.56	1.922860
n_e	546.07	1.933224
n_F	486.13	1.954590
$n_{F'}$	479.99	1.957398
n_g	435.83	1.982873
n_h	404.66	2.009266
n_i	365.01	
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
K_1	2.55246796E+00
L_1	1.62450683E+02
K_2	4.65681607E-01
L_2	6.95600810E-02
K_3	2.02894680E+00
L_3	1.47711380E-02

折射率温度系数常数 Constants of dn/dt	
D_0	-6.75E-06
D_1	1.69E-08
D_2	-4.10E-11
E_0	9.81E-07
E_1	1.32E-09
λ_{TK}(μm)	0.322

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.1973	$P'_{s,t}$	0.1935
$P_{C,s}$	0.4462	$P'_{C',s}$	0.4802
$P_{d,C}$	0.2821	$P'_{d,C'}$	0.2338
$P_{e,d}$	0.2345	$P'_{e,d}$	0.2299
$P_{g,F}$	0.6399	$P'_{g,F'}$	0.5651
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	-0.0011	$\Delta P_{C,s}$	-0.0049
$\Delta P_{F,e}$	0.0053	$\Delta P_{g,F}$	0.0298

着色度 Color Code	
λ_{80}/λ_5	
λ_{70}/λ_5	430/385

热性质 Thermal Properties	
T_g (℃)	720
T_s (℃)	751
$T_{10^{14.5}}$ (℃)	667
$T_{10^{13}}$ (℃)	699
$T_{10^{7.6}}$(℃)	806
$\alpha_{-30/70℃}$(10^{-7}/K)	64
$\alpha_{100/300℃}$(10^{-7}/K)	77
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	1
CR	1
RC(S)	1
RA(S)	1

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.969	0.938
2200	0.981	0.962
2000	0.990	0.979
1800	0.994	0.987
1600	0.997	0.995
1400	0.999	0.997
1200	0.999	0.998
1060	0.999	0.997
1000	0.998	0.996
950	0.998	0.996
900	0.997	0.994
850	0.997	0.994
800	0.996	0.992
700	0.995	0.990
650	0.993	0.986
600	0.992	0.984
550	0.986	0.973
500	0.972	0.944
480	0.964	0.929
460	0.953	0.908
440	0.933	0.871
420	0.894	0.799
400	0.732	0.536
390	0.459	0.211
380		
370		
360		
350		
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	475
F_A	200
E (10^7Pa)	9443
G (10^7Pa)	3734
μ	0.264
B (10^{-12}/Pa)	2.77

其他性质 Other Properties	
ρ (g/cm^3)	4.01

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	-2.8	-1.7	-1.4	-0.7	0.9	2.8
-40～-20	-2.6	-1.5	-1.1	-0.5	1.4	3.5
-20～0	-2.5	-1.3	-0.8	-0.1	1.8	4.1
0～20	-2.4	-1.2	-0.4	0.3	2.1	4.9
20～40	-2.2	-0.5	0.1	0.8	2.8	5.6
40～60	-1.9	-0.2	0.6	1.4	3.5	6.4
60～80	-1.5	0.1	0.9	1.7	4.0	7.1
80～100	-1.3	0.2	0.9	1.9	4.1	7.4
100～120	-1.1	0.5	1.1	2.0	4.6	7.8
120～140	-1.0	0.6	1.5	2.5	5.0	8.4

CDGM

H-ZF62GT	923209	n_d = 1.922860	υ_d = 20.88	$n_F - n_C$ = 0.044198
		n_e = 1.933224	υ_e = 20.70	$n_{F'} - n_{C'}$ = 0.045079

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	1.848882
$n_{1970.09}$	1970.09	1.856987
$n_{1529.58}$	1529.58	1.866679
$n_{1060.0}$	1060.0	1.880056
n_t	1013.98	1.881950
n_s	852.11	1.890672
n_r	706.52	1.903689
n_C	656.27	1.910392
$n_{C'}$	643.85	1.912319
n_{He-Ne}	632.8	1.914140
n_D	589.29	1.922483
n_d	587.56	1.922860
n_e	546.07	1.933224
n_F	486.13	1.954590
$n_{F'}$	479.99	1.957398
n_g	435.83	1.982873
n_h	404.66	2.009266
n_i	365.01	
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

K_1	2.55246796E+00
L_1	1.62450683E+02
K_2	4.65681607E-01
L_2	6.95600810E-02
K_3	2.02894680E+00
L_3	1.47711380E-02

折射率温度系数常数 Constants of dn/dt

D_0	-6.75E-06
D_1	1.69E-08
D_2	-4.10E-11
E_0	9.81E-07
E_1	1.32E-09
λ_{TK}(μm)	0.322

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.1973	$P'_{s,t}$	0.1935
$P_{C,s}$	0.4462	$P'_{C',s}$	0.4802
$P_{d,C}$	0.2821	$P'_{d,C'}$	0.2338
$P_{e,d}$	0.2345	$P'_{e,d}$	0.2299
$P_{g,F}$	0.6399	$P'_{g,F'}$	0.5651
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	-0.0011	$\Delta P_{C,s}$	-0.0049
$\Delta P_{F,e}$	0.0053	$\Delta P_{g,F}$	0.0298

着色度 Color Code

λ_{80}/λ_5	
λ_{70}/λ_5	410/385

热性质 Thermal Properties

T_g (℃)	720
T_s (℃)	751
$T_{10}^{14.5}$ (℃)	667
T_{10}^{13} (℃)	699
$T_{10}^{7.6}$(℃)	806
$\alpha_{-30/70℃}$(10^{-7}/K)	64
$\alpha_{100/300℃}$(10^{-7}/K)	77
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	1
CR	1
RC(S)	1
RA(S)	1

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.968	0.937
2200	0.982	0.965
2000	0.989	0.979
1800	0.994	0.989
1600	0.998	0.996
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.999	0.998
650	0.999	0.998
600	0.998	0.996
550	0.996	0.993
500	0.991	0.982
480	0.989	0.978
460	0.985	0.970
440	0.978	0.957
420	0.959	0.920
400	0.828	0.685
390	0.539	0.290
380	0.134	0.018
370		
360		
350		
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties

H_K (10^7Pa)	475
F_A	200
E (10^7Pa)	9443
G (10^7Pa)	3734
μ	0.264
B (10^{-12}/Pa)	2.77

其他性质 Other Properties

ρ (g/cm^3)	4.01

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	-2.8	-1.7	-1.4	-0.7	0.9	2.8
-40～-20	-2.6	-1.5	-1.1	-0.5	1.4	3.5
-20～0	-2.5	-1.3	-0.8	-0.1	1.8	4.1
0～20	-2.4	-1.2	-0.4	0.3	2.1	4.9
20～40	-2.2	-0.5	0.1	0.8	2.8	5.6
40～60	-1.9	-0.2	0.6	1.4	3.5	6.4
60～80	-1.5	0.1	0.9	1.7	4.0	7.1
80～100	-1.3	0.2	0.9	1.9	4.1	7.4
100～120	-1.1	0.5	1.1	2.0	4.6	7.8
120～140	-1.0	0.6	1.5	2.5	5.0	8.4

CDGM

H-ZF71	808227	n_d = 1.808100	υ_d = 22.70	$n_F - n_C$ = 0.035602
		n_e = 1.816463	υ_e = 22.51	$n_{F'} - n_{C'}$ = 0.036272

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	1.744473
$n_{1970.09}$	1970.09	1.752179
$n_{1529.58}$	1529.58	1.761164
$n_{1060.0}$	1060.0	1.772900
n_t	1013.98	1.774506
n_s	852.11	1.781803
n_r	706.52	1.792514
n_C	656.27	1.797983
$n_{C'}$	643.85	1.799551
n_{He-Ne}	632.8	1.801031
n_D	589.29	1.807795
n_d	587.56	1.808100
n_e	546.07	1.816463
n_F	486.13	1.833585
$n_{F'}$	479.99	1.835823
n_g	435.83	1.855996
n_h	404.66	1.876627
n_i	365.01	
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

K_1	4.06804868E-01
L_1	6.45152130E-02
K_2	1.70831097E+00
L_2	1.27703237E-02
K_3	2.36137303E+00
L_3	1.63275585E+02

折射率温度系数常数 Constants of dn/dt

D_0	-9.66E-06
D_1	1.15E-08
D_2	-5.06E-11
E_0	9.75E-07
E_1	1.26E-09
λ_{TK}(μm)	0.313

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2050	$P'_{s,t}$	0.2012
$P_{C,s}$	0.4545	$P'_{C',s}$	0.4893
$P_{d,C}$	0.2842	$P'_{d,C'}$	0.2357
$P_{e,d}$	0.2349	$P'_{e,d}$	0.2306
$P_{g,F}$	0.6295	$P'_{g,F'}$	0.5562
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	0.0063	$\Delta P_{C,s}$	-0.0009
$\Delta P_{F,e}$	0.0038	$\Delta P_{g,F}$	0.0224

着色度 Color Code

λ_{80}/λ_5	450/370
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	566
T_s (℃)	611
$T_{10^{14.5}}$ (℃)	522
$T_{10^{13}}$ (℃)	555
$T_{10^{7.6}}$(℃)	663
$\alpha_{-30/70℃}$(10^{-7}/K)	93
$\alpha_{100/300℃}$(10^{-7}/K)	105
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	1
CR	1
RC(S)	1
RA(S)	1

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.936	0.876
2200	0.966	0.934
2000	0.987	0.975
1800	0.993	0.986
1600	0.997	0.994
1400	0.998	0.996
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.996
700	0.997	0.995
650	0.997	0.994
600	0.996	0.993
550	0.994	0.989
500	0.987	0.974
480	0.983	0.967
460	0.978	0.957
440	0.970	0.940
420	0.955	0.912
400	0.907	0.823
390	0.815	0.665
380	0.547	0.299
370	0.114	0.013
360		
350		
340		
330		
320		
310		
300		
290		
280		

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	-3.9	-2.9	-2.6	-2.1	-0.8	0.7
-40～-20	-3.9	-2.8	-2.4	-1.8	-0.5	1.2
-20～0	-3.8	-2.7	-2.2	-1.6	-0.3	1.7
0～20	-3.7	-2.5	-2.0	-1.5	0.2	2.1
20～40	-3.6	-2.4	-1.9	-1.2	0.5	2.5
40～60	-3.5	-2.3	-1.7	-1.0	0.6	3.0
60～80	-3.3	-2.1	-1.4	-0.9	1.1	3.4
80～100	-3.4	-2.1	-1.4	-0.9	1.1	3.5
100～120	-3.6	-2.2	-1.4	-0.9	1.1	3.9
120～140	-4.0	-2.3	-1.7	-0.9	1.1	4.0

机械性质 Mechanical Properties

H_K (10^7Pa)	428
F_A	275
E (10^7Pa)	8537
G (10^7Pa)	3398
μ	0.256
B (10^{-12}/Pa)	3.48

其他性质 Other Properties

ρ (g/cm^3)	3.30

备注 Remarks

CDGM

H-ZF71GT	808227	n_d = 1.808100	υ_d = 22.70	$n_F - n_C$ = 0.035602
		n_e = 1.816463	υ_e = 22.51	$n_{F'} - n_{C'}$ = 0.036272

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	1.744473
$n_{1970.09}$	1970.09	1.752179
$n_{1529.58}$	1529.58	1.761164
$n_{1060.0}$	1060.0	1.772900
n_t	1013.98	1.774506
n_s	852.11	1.781803
n_r	706.52	1.792514
n_C	656.27	1.797983
$n_{C'}$	643.85	1.799551
n_{He-Ne}	632.8	1.801031
n_D	589.29	1.807795
n_d	587.56	1.808100
n_e	546.07	1.816463
n_F	486.13	1.833585
$n_{F'}$	479.99	1.835823
n_g	435.83	1.855996
n_h	404.66	1.876627
n_i	365.01	
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

K_1	4.06804868E-01
L_1	6.45152130E-02
K_2	1.70831097E+00
L_2	1.27703237E-02
K_3	2.36137303E+00
L_3	1.63275585E+02

折射率温度系数常数 Constants of dn/dt

D_0	-9.66E-06
D_1	1.15E-08
D_2	-5.06E-11
E_0	9.75E-07
E_1	1.26E-09
λ_{TK}(μm)	0.313

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2050	$P'_{s,t}$	0.2012
$P_{C,s}$	0.4545	$P'_{C',s}$	0.4893
$P_{d,C}$	0.2842	$P'_{d,C'}$	0.2357
$P_{e,d}$	0.2349	$P'_{e,d}$	0.2306
$P_{g,F}$	0.6295	$P'_{g,F'}$	0.5562
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	0.0063	$\Delta P_{C,s}$	-0.0009
$\Delta P_{F,e}$	0.0038	$\Delta P_{g,F}$	0.0224

着色度 Color Code

λ_{80}/λ_5	425/375
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	566
T_s (℃)	611
$T_{10^{14.5}}$ (℃)	522
$T_{10^{13}}$ (℃)	555
$T_{10^{7.6}}$(℃)	663
$\alpha_{-30/70℃}$(10^{-7}/K)	93
$\alpha_{100/300℃}$(10^{-7}/K)	105
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	1
CR	1
RC(S)	1
RA(S)	1

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.926	0.857
2200	0.959	0.919
2000	0.984	0.968
1800	0.991	0.983
1600	0.996	0.992
1400	0.998	0.995
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.996
700	0.997	0.995
650	0.997	0.994
600	0.996	0.993
550	0.995	0.991
500	0.991	0.982
480	0.988	0.977
460	0.984	0.969
440	0.980	0.960
420	0.971	0.944
400	0.933	0.870
390	0.847	0.718
380	0.568	0.323
370	0.141	0.020
360		
350		
340		
330		
320		
310		
300		
290		
280		

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	-3.9	-2.9	-2.6	-2.1	-0.8	0.7
-40～-20	-3.9	-2.8	-2.4	-1.8	-0.5	1.2
-20～0	-3.8	-2.7	-2.2	-1.6	-0.3	1.7
0～20	-3.7	-2.5	-2.0	-1.5	0.2	2.1
20～40	-3.6	-2.4	-1.9	-1.2	0.5	2.5
40～60	-3.5	-2.3	-1.7	-1.0	0.6	3.0
60～80	-3.3	-2.1	-1.4	-0.9	1.1	3.4
80～100	-3.4	-2.1	-1.4	-0.9	1.1	3.5
100～120	-3.6	-2.2	-1.4	-0.9	1.1	3.9
120～140	-4.0	-2.3	-1.7	-0.9	1.1	4.0

机械性质 Mechanical Properties

H_K (10^7Pa)	428
F_A	275
E (10^7Pa)	8537
G (10^7Pa)	3398
μ	0.256
B (10^{-12}/Pa)	3.48

其他性质 Other Properties

ρ (g/cm^3)	3.30

备注 Remarks

CDGM

H-ZF72A	923189	n_d = 1.922860	υ_d = 18.90	$n_F - n_C$ = 0.048839
		n_e = 1.934290	υ_e = 18.74	$n_{F'} - n_{C'}$ = 0.049858

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	1.842045
$n_{1970.09}$	1970.09	1.850919
$n_{1529.58}$	1529.58	1.861496
$n_{1060.0}$	1060.0	1.876055
n_t	1013.98	1.878116
n_s	852.11	1.887614
n_r	706.52	1.901826
n_C	656.27	1.909165
$n_{C'}$	643.85	1.911278
n_{He-Ne}	632.8	1.913275
n_D	589.29	1.922445
n_d	587.56	1.922860
n_e	546.07	1.934290
n_F	486.13	1.958004
$n_{F'}$	479.99	1.961136
n_g	435.83	1.989743
n_h	404.66	2.019780
n_i	365.01	
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
K_1	4.70478653E-01
L_1	7.36024509E-02
K_2	2.55040233E+00
L_2	1.49306621E+02
K_3	2.00593441E+00
L_3	1.62999226E-02

折射率温度系数常数 Constants of dn/dt	
D_0	-5.63E-06
D_1	1.59E-08
D_2	-4.96E-11
E_0	1.13E-06
E_1	1.73E-09
λ_{TK}(μm)	0.328

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.1945	$P'_{s,t}$	0.1905
$P_{C,s}$	0.4413	$P'_{C',s}$	0.4746
$P_{d,C}$	0.2804	$P'_{d,C'}$	0.2323
$P_{e,d}$	0.2340	$P'_{e,d}$	0.2293
$P_{g,F}$	0.6499	$P'_{g,F'}$	0.5738
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0005	$\Delta P_{C,s}$	-0.0051
$\Delta P_{F,e}$	0.0064	$\Delta P_{g,F}$	0.0363

着色度 Color Code	
λ_{80}/λ_5	
λ_{70}/λ_5	435/390

热性质 Thermal Properties	
T_g (℃)	667
T_s (℃)	697
$T_{10^{14.5}}$ (℃)	614
$T_{10^{13}}$ (℃)	649
$T_{10^{7.6}}$(℃)	749
$\alpha_{-30/70℃}$(10^{-7}/K)	67
$\alpha_{100/300℃}$(10^{-7}/K)	84
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	1
CR	1
RC(S)	1
RA(S)	1

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.963	0.927
2200	0.978	0.956
2000	0.988	0.976
1800	0.993	0.986
1600	0.997	0.995
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.998	0.997
950	0.998	0.997
900	0.998	0.997
850	0.998	0.997
800	0.998	0.996
700	0.997	0.995
650	0.997	0.994
600	0.996	0.992
550	0.991	0.982
500	0.977	0.955
480	0.967	0.935
460	0.950	0.903
440	0.921	0.849
420	0.860	0.740
400	0.594	0.353
390	0.230	0.053
380		
370		
360		
350		
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	484
F_A	193
E (10^7Pa)	10223
G (10^7Pa)	4012
μ	0.274
B (10^{-12}/Pa)	3.19

其他性质 Other Properties	
ρ (g/cm^3)	3.57

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	-2.5	-0.8	-0.2	0.5	2.2	5.2
-40～-20	-2.1	-0.5	0.2	0.8	2.8	5.8
-20～0	-1.7	-0.2	0.6	1.5	3.6	6.4
0～20	-1.2	0.2	0.9	1.8	4.1	7.1
20～40	-0.8	0.6	1.4	2.1	4.8	8.4
40～60	-0.5	0.8	1.7	2.6	5.3	9.1
60～80	-1.0	1.0	2.0	3.1	5.9	9.8
80～100	-0.7	1.3	2.2	3.3	6.4	10.5
100～120	-0.9	1.6	2.4	3.6	6.7	11.0
120～140	-0.5	1.8	2.7	4.0	7.1	11.6

H-ZF72AGT	923189	n_d = 1.922860	υ_d = 18.90	$n_F - n_C$ = 0.048839
		n_e = 1.934290	υ_e = 18.74	$n_{F'} - n_{C'}$ = 0.049858

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	1.842045
$n_{1970.09}$	1970.09	1.850919
$n_{1529.58}$	1529.58	1.861496
$n_{1060.0}$	1060.0	1.876055
n_t	1013.98	1.878116
n_s	852.11	1.887614
n_r	706.52	1.901826
n_C	656.27	1.909165
$n_{C'}$	643.85	1.911278
n_{He-Ne}	632.8	1.913275
n_D	589.29	1.922445
n_d	587.56	1.922860
n_e	546.07	1.934290
n_F	486.13	1.958004
$n_{F'}$	479.99	1.961136
n_g	435.83	1.989743
n_h	404.66	2.019780
n_i	365.01	
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
K_1	4.70478653E-01
L_1	7.36024509E-02
K_2	2.55040233E+00
L_2	1.49306621E+02
K_3	2.00593441E+00
L_3	1.62999226E-02

折射率温度系数常数 Constants of dn/dt	
D_0	-5.63E-06
D_1	1.59E-08
D_2	-4.96E-11
E_0	1.13E-06
E_1	1.73E-09
λ_{TK}(μm)	0.328

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.1945	$P'_{s,t}$	0.1905
$P_{C,s}$	0.4413	$P'_{C',s}$	0.4746
$P_{d,C}$	0.2804	$P'_{d,C'}$	0.2323
$P_{e,d}$	0.2340	$P'_{e,d}$	0.2293
$P_{g,F}$	0.6499	$P'_{g,F'}$	0.5738
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0005	$\Delta P_{C,s}$	-0.0051
$\Delta P_{F,e}$	0.0064	$\Delta P_{g,F}$	0.0363

着色度 Color Code	
λ_{80}/λ_5	
λ_{70}/λ_5	415/390

热性质 Thermal Properties	
T_g (℃)	667
T_s (℃)	697
$T_{10^{14.5}}$ (℃)	614
$T_{10^{13}}$ (℃)	649
$T_{10^{7.6}}$(℃)	749
$\alpha_{-30/70℃}$(10^{-7}/K)	67
$\alpha_{100/300℃}$(10^{-7}/K)	84
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	1
CR	1
RC(S)	1
RA(S)	1

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.968	0.938
2200	0.980	0.961
2000	0.989	0.979
1800	0.994	0.988
1600	0.998	0.995
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.997
900	0.998	0.996
850	0.997	0.995
800	0.997	0.994
700	0.996	0.992
650	0.995	0.991
600	0.995	0.990
550	0.992	0.984
500	0.983	0.967
480	0.978	0.956
460	0.972	0.945
440	0.962	0.926
420	0.932	0.868
400	0.686	0.470
390	0.288	0.083
380		
370		
360		
350		
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	484
F_A	193
E (10^7Pa)	10223
G (10^7Pa)	4012
μ	0.274
B (10^{-12}/Pa)	3.19

其他性质 Other Properties	
ρ (g/cm^3)	3.57

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	-2.5	-0.8	-0.2	0.5	2.2	5.2
-40～-20	-2.1	-0.5	0.2	0.8	2.8	5.8
-20～0	-1.7	-0.2	0.6	1.5	3.6	6.4
0～20	-1.2	0.2	0.9	1.8	4.1	7.1
20～40	-0.8	0.6	1.4	2.1	4.8	8.4
40～60	-0.5	0.8	1.7	2.6	5.3	9.1
60～80	-1.0	1.0	2.0	3.1	5.9	9.8
80～100	-0.7	1.3	2.2	3.3	6.4	10.5
100～120	-0.9	1.6	2.4	3.6	6.7	11.0
120～140	-0.5	1.8	2.7	4.0	7.1	11.6

H-ZF73	959175	n_d = 1.959060	υ_d = 17.47	$n_F - n_C$ = 0.054890
		n_e = 1.971885	υ_e = 17.33	$n_{F'} - n_{C'}$ = 0.056081

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	1.869915
$n_{1970.09}$	1970.09	1.879512
$n_{1529.58}$	1529.58	1.891029
$n_{1060.0}$	1060.0	1.907018
n_t	1013.98	1.909291
n_s	852.11	1.919795
n_r	706.52	1.935576
n_C	656.27	1.943753
$n_{C'}$	643.85	1.946111
n_{He-Ne}	632.8	1.948341
n_D	589.29	1.958595
n_d	587.56	1.959060
n_e	546.07	1.971885
n_F	486.13	1.998643
$n_{F'}$	479.99	2.002192
n_g	435.83	2.034793
n_h	404.66	2.069389
n_i	365.01	
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
K_1	5.28336971E-01
L_1	7.59305743E-02
K_2	2.05959954E+00
L_2	1.71346469E-02
K_3	3.58638080E+00
L_3	1.89364809E+02

折射率温度系数常数 Constants of dn/dt	
D_0	-2.47E-06
D_1	1.75E-08
D_2	-4.65E-11
E_0	1.29E-06
E_1	1.86E-09
λ_{TK}(μm)	0.328

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.1914	$P'_{s,t}$	0.1873
$P_{C,s}$	0.4365	$P'_{C',s}$	0.4692
$P_{d,C}$	0.2789	$P'_{d,C'}$	0.2309
$P_{e,d}$	0.2336	$P'_{e,d}$	0.2287
$P_{g,F}$	0.6586	$P'_{g,F'}$	0.5813
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	-0.0007	$\Delta P_{C,s}$	-0.0065
$\Delta P_{F,e}$	0.0075	$\Delta P_{g,F}$	0.0426

着色度 Color Code	
λ_{80}/λ_5	
λ_{70}/λ_5	440/395

热性质 Thermal Properties	
T_g (℃)	677
T_s (℃)	706
$T_{10^{14.5}}$ (℃)	623
$T_{10^{13}}$ (℃)	655
$T_{10^{7.6}}$(℃)	768
$\alpha_{-30/70℃}$(10^{-7}/K)	58
$\alpha_{100/300℃}$(10^{-7}/K)	74
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	1
CR	1
RC(S)	1
RA(S)	1

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.970	0.940
2200	0.981	0.962
2000	0.990	0.981
1800	0.993	0.987
1600	0.997	0.994
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.998	0.996
800	0.996	0.993
700	0.995	0.990
650	0.991	0.982
600	0.990	0.981
550	0.981	0.962
500	0.957	0.915
480	0.941	0.886
460	0.921	0.848
440	0.888	0.788
420	0.812	0.660
400	0.414	0.171
390	0.173	0.030
380		
370		
360		
350		
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	484
F_A	242
E (10^7Pa)	10307
G (10^7Pa)	4149
μ	0.242
B (10^{-12}/Pa)	3.48

其他性质 Other Properties	
ρ (g/cm^3)	3.49

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	0.4	1.9	2.6	3.2	5.7	8.5
-40～-20	0.1	2.1	2.8	3.4	6.8	9.6
-20～0	0.0	2.3	3.2	4.2	6.6	10.7
0～20	0.9	2.7	3.7	4.8	7.2	11.5
20～40	1.3	3.0	4.2	5.3	8.2	12.7
40～60	1.6	3.6	4.6	5.9	9.3	13.6
60～80	1.6	4.1	5.2	6.2	9.5	14.4
80～100	1.6	4.3	5.4	6.5	10.2	15.4
100～120	2.0	4.5	5.6	6.8	10.6	15.8
120～140	2.1	4.7	5.8	7.4	11.2	16.5

H-ZF73GT	959175	n_d = 1.959060	υ_d = 17.47	$n_F - n_C$ = 0.054890
		n_e = 1.971885	υ_e = 17.33	$n_{F'} - n_{C'}$ = 0.056081

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	1.869915
$n_{1970.09}$	1970.09	1.879512
$n_{1529.58}$	1529.58	1.891029
$n_{1060.0}$	1060.0	1.907018
n_t	1013.98	1.909291
n_s	852.11	1.919795
n_r	706.52	1.935576
n_C	656.27	1.943753
$n_{C'}$	643.85	1.946111
n_{He-Ne}	632.8	1.948341
n_D	589.29	1.958595
n_d	587.56	1.959060
n_e	546.07	1.971885
n_F	486.13	1.998643
$n_{F'}$	479.99	2.002192
n_g	435.83	2.034793
n_h	404.66	2.069389
n_i	365.01	
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

K_1	5.28336971E-01
L_1	7.59305743E-02
K_2	2.05959954E+00
L_2	1.71346469E-02
K_3	3.58638080E+00
L_3	1.89364809E+02

折射率温度系数常数 Constants of dn/dt

D_0	-2.47E-06
D_1	1.75E-08
D_2	-4.65E-11
E_0	1.29E-06
E_1	1.86E-09
λ_{TK}(μm)	0.328

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.1914	$P'_{s,t}$	0.1873
$P_{C,s}$	0.4365	$P'_{C',s}$	0.4692
$P_{d,C}$	0.2789	$P'_{d,C'}$	0.2309
$P_{e,d}$	0.2336	$P'_{e,d}$	0.2287
$P_{g,F}$	0.6586	$P'_{g,F'}$	0.5813
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	-0.0007	$\Delta P_{C,s}$	-0.0065
$\Delta P_{F,e}$	0.0075	$\Delta P_{g,F}$	0.0426

着色度 Color Code

λ_{80}/λ_5	
λ_{70}/λ_5	425/395

热性质 Thermal Properties

T_g (℃)	677
T_s (℃)	706
$T_{10}^{14.5}$ (℃)	623
T_{10}^{13} (℃)	655
$T_{10}^{7.6}$(℃)	768
$\alpha_{-30/70℃}$(10^{-7}/K)	58
$\alpha_{100/300℃}$(10^{-7}/K)	74
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	1
CR	1
RC(S)	1
RA(S)	1

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.977	0.955
2200	0.986	0.971
2000	0.993	0.985
1800	0.995	0.991
1600	0.998	0.996
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.996
700	0.997	0.995
650	0.996	0.993
600	0.995	0.991
550	0.990	0.981
500	0.979	0.958
480	0.972	0.944
460	0.963	0.927
440	0.948	0.898
420	0.894	0.800
400	0.480	0.230
390	0.179	0.032
380		
370		
360		
350		
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties

H_K (10^7Pa)	484
F_A	242
E (10^7Pa)	10307
G (10^7Pa)	4149
μ	0.242
B (10^{-12}/Pa)	3.48

其他性质 Other Properties

ρ (g/cm^3)	3.49

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	0.4	1.9	2.6	3.2	5.7	8.5
-40～-20	0.1	2.1	2.8	3.4	6.8	9.6
-20～0	0.0	2.3	3.2	4.2	6.6	10.7
0～20	0.9	2.7	3.7	4.8	7.2	11.5
20～40	1.3	3.0	4.2	5.3	8.2	12.7
40～60	1.6	3.6	4.6	5.9	9.3	13.6
60～80	1.6	4.1	5.2	6.2	9.5	14.4
80～100	1.6	4.3	5.4	6.5	10.2	15.4
100～120	2.0	4.5	5.6	6.8	10.6	15.8
120～140	2.1	4.7	5.8	7.4	11.2	16.5

H-ZF88	946179	n_d = 1.945950	υ_d = 17.94	$n_F - n_C$ = 0.052723
		n_e = 1.958277	υ_e = 17.80	$n_{F'} - n_{C'}$ = 0.053849

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	1.859336
$n_{1970.09}$	1970.09	1.868901
$n_{1529.58}$	1529.58	1.880219
$n_{1060.0}$	1060.0	1.895751
n_t	1013.98	1.897951
n_s	852.11	1.908105
n_r	706.52	1.923335
n_C	656.27	1.931215
$n_{C'}$	643.85	1.933487
n_{He-Ne}	632.8	1.935634
n_D	589.29	1.945503
n_d	587.56	1.945950
n_e	546.07	1.958277
n_F	486.13	1.983938
$n_{F'}$	479.99	1.987336
n_g	435.83	2.018482
n_h	404.66	2.051400
n_i	365.01	
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

K_1	2.04275349E+00
L_1	1.69742976E-02
K_2	1.98276153E+00
L_2	1.09068151E+02
K_3	5.04267829E-01
L_3	7.51710710E-02

折射率温度系数常数 Constants of dn/dt

D_0	-3.58E-06
D_1	1.75E-08
D_2	-4.67E-11
E_0	1.18E-06
E_1	1.91E-09
λ_{TK}(μm)	0.330

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.1926	$P'_{s,t}$	0.1886
$P_{C,s}$	0.4383	$P'_{C',s}$	0.4714
$P_{d,C}$	0.2795	$P'_{d,C'}$	0.2314
$P_{e,d}$	0.2338	$P'_{e,d}$	0.2289
$P_{g,F}$	0.6552	$P'_{g,F'}$	0.5784
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	0.0002	$\Delta P_{C,s}$	-0.0058
$\Delta P_{F,e}$	0.0070	$\Delta P_{g,F}$	0.0401

着色度 Color Code

λ_{80}/λ_5	
λ_{70}/λ_5	445/390

热性质 Thermal Properties

T_g (℃)	664
T_s (℃)	709
$T_{10}^{14.5}$ (℃)	620
T_{10}^{13} (℃)	652
$T_{10}^{7.6}$(℃)	769
$\alpha_{-30/70℃}$(10^{-7}/K)	60
$\alpha_{100/300℃}$(10^{-7}/K)	73
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	1
CR	1
RC(S)	1
RA(S)	1

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.973	0.946
2200	0.983	0.966
2000	0.993	0.987
1800	0.996	0.992
1600	0.998	0.996
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.998	0.997
900	0.998	0.996
850	0.997	0.995
800	0.997	0.995
700	0.996	0.993
650	0.995	0.991
600	0.994	0.989
550	0.989	0.979
500	0.973	0.946
480	0.960	0.921
460	0.941	0.886
440	0.908	0.825
420	0.837	0.700
400	0.486	0.236
390	0.158	0.025
380		
370		
360		
350		
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties

H_K (10^7Pa)	520
F_A	202
E (10^7Pa)	10881
G (10^7Pa)	4377
μ	0.243
B (10^{-12}/Pa)	3.27

其他性质 Other Properties

ρ (g/cm^3)	3.52

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	-0.6	0.7	1.3	1.9	4.0	6.7
-40～-20	-0.4	1.0	1.7	2.6	4.6	7.8
-20～0	-0.4	1.3	2.1	3.0	5.2	8.7
0～20	-0.2	1.5	2.5	3.4	5.9	9.6
20～40	0.1	2.0	2.9	4.0	6.8	10.9
40～60	0.4	2.6	3.5	4.4	7.6	11.8
60～80	1.0	3.1	4.1	5.1	8.3	12.6
80～100	1.2	3.3	4.3	5.5	8.8	13.6
100～120	1.3	3.4	4.5	5.7	9.1	14.0
120～140	1.3	3.4	4.7	5.9	9.4	14.4

H-ZF88GT	946179	n_d = 1.945950	υ_d = 17.94	$n_F - n_C$ = 0.052723
		n_e = 1.958277	υ_e = 17.80	$n_{F'} - n_{C'}$ = 0.053849

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	1.859336
$n_{1970.09}$	1970.09	1.868901
$n_{1529.58}$	1529.58	1.880219
$n_{1060.0}$	1060.0	1.895751
n_t	1013.98	1.897951
n_s	852.11	1.908105
n_r	706.52	1.923335
n_C	656.27	1.931215
$n_{C'}$	643.85	1.933487
n_{He-Ne}	632.8	1.935634
n_D	589.29	1.945503
n_d	587.56	1.945950
n_e	546.07	1.958277
n_F	486.13	1.983938
$n_{F'}$	479.99	1.987336
n_g	435.83	2.018482
n_h	404.66	2.051400
n_i	365.01	
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

K_1	2.04275349E+00
L_1	1.69742976E-02
K_2	1.98276153E+00
L_2	1.09068151E+02
K_3	5.04267829E-01
L_3	7.51710710E-02

折射率温度系数常数 Constants of dn/dt

D_0	-3.58E-06
D_1	1.75E-08
D_2	-4.67E-11
E_0	1.18E-06
E_1	1.91E-09
λ_{TK}(μm)	0.330

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.1926	$P'_{s,t}$	0.1886
$P_{C,s}$	0.4383	$P'_{C',s}$	0.4714
$P_{d,C}$	0.2795	$P'_{d,C'}$	0.2314
$P_{e,d}$	0.2338	$P'_{e,d}$	0.2289
$P_{g,F}$	0.6552	$P'_{g,F'}$	0.5784
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	0.0002	$\Delta P_{C,s}$	-0.0058
$\Delta P_{F,e}$	0.0070	$\Delta P_{g,F}$	0.0401

着色度 Color Code

λ_{80}/λ_5	
λ_{70}/λ_5	420/390

热性质 Thermal Properties

T_g (℃)	664
T_s (℃)	709
$T_{10}^{14.5}$ (℃)	620
T_{10}^{13} (℃)	652
$T_{10}^{7.6}$(℃)	769
$\alpha_{-30/70℃}$(10^{-7}/K)	60
$\alpha_{100/300℃}$(10^{-7}/K)	73
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	1
CR	1
RC(S)	1
RA(S)	1

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.970	0.941
2200	0.980	0.961
2000	0.992	0.985
1800	0.995	0.990
1600	0.997	0.995
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.997
800	0.999	0.997
700	0.998	0.996
650	0.998	0.996
600	0.997	0.995
550	0.996	0.992
500	0.988	0.977
480	0.984	0.968
460	0.978	0.956
440	0.965	0.931
420	0.923	0.852
400	0.587	0.345
390	0.202	0.041
380		
370		
360		
350		
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties

H_K (10^7Pa)	520
F_A	202
E (10^7Pa)	10881
G (10^7Pa)	4377
μ	0.243
B (10^{-12}/Pa)	3.27

其他性质 Other Properties

ρ (g/cm^3)	3.52

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	-0.6	0.7	1.3	1.9	4.0	6.7
-40～-20	-0.4	1.0	1.7	2.6	4.6	7.8
-20～0	-0.4	1.3	2.1	3.0	5.2	8.7
0～20	-0.2	1.5	2.5	3.4	5.9	9.6
20～40	0.1	2.0	2.9	4.0	6.8	10.9
40～60	0.4	2.6	3.5	4.4	7.6	11.8
60～80	1.0	3.1	4.1	5.1	8.3	12.6
80～100	1.2	3.3	4.3	5.5	8.8	13.6
100～120	1.3	3.4	4.5	5.7	9.1	14.0
120～140	1.3	3.4	4.7	5.9	9.4	14.4

H-LaF1	694492	n_d = 1.69362	υ_d = 49.19	$n_F - n_C$ = 0.014100
		n_e = 1.69696	υ_e = 48.90	$n_{F'} - n_{C'}$ = 0.014252

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.67855
n_s	852.11	1.68226
n_r	706.52	1.68708
n_C	656.27	1.68944
$n_{C'}$	643.85	1.69011
n_{He-Ne}	632.8	1.69073
n_D	589.29	1.69350
n_d	587.56	1.69362
n_e	546.07	1.69696
n_F	486.13	1.70354
$n_{F'}$	479.99	1.70436
n_g	435.83	1.71140
n_h	404.66	1.71803
n_i	365.01	1.72957
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	2.8190353E+00
A_1	-1.6449351E-02
A_2	1.3660224E-02
A_3	2.4815081E-03
A_4	-2.5853305E-04
A_5	1.3091836E-05

折射率温度系数常数 Constants of dn/dt	
D_0	1.00E-06
D_1	2.31E-08
D_2	-1.60E-10
E_0	5.94E-07
E_1	-4.95E-10
λ_{TK}(μm)	0.215

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2631	$P'_{s,t}$	0.2603
$P_{C,s}$	0.5092	$P'_{C',s}$	0.5508
$P_{d,C}$	0.2965	$P'_{d,C'}$	0.2463
$P_{e,d}$	0.2369	$P'_{e,d}$	0.2344
$P_{g,F}$	0.5574	$P'_{g,F'}$	0.4940
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	-0.0057	$\Delta P_{C,s}$	-0.0088
$\Delta P_{F,e}$	0.0039	$\Delta P_{g,F}$	-0.0045

着色度 Color Code	
λ_{80}/λ_5	385/340
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	640
T_s (℃)	676
$T_{10^{14.5}}$ (℃)	595
$T_{10^{13}}$ (℃)	627
$T_{10^{7.6}}$(℃)	737
$\alpha_{-30/70℃}$(10^{-7}/K)	71
$\alpha_{100/300℃}$(10^{-7}/K)	85
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	3
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.897	0.805
2200	0.971	0.942
2000	0.989	0.979
1800	0.996	0.991
1600	0.997	0.994
1400	0.998	0.997
1200	0.999	0.999
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.997	0.994
700	0.997	0.994
650	0.997	0.995
600	0.998	0.997
550	0.998	0.996
500	0.997	0.995
480	0.996	0.992
460	0.994	0.989
440	0.991	0.983
420	0.988	0.976
400	0.978	0.957
390	0.968	0.937
380	0.951	0.904
370	0.914	0.835
360	0.834	0.696
350	0.658	0.433
340	0.330	0.109
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	613
F_A	158
E (10^7Pa)	10138
G (10^7Pa)	3933
μ	0.289
B (10^{-12}/Pa)	1.82

其他性质 Other Properties	
ρ (g/cm^3)	3.85

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	1.5	1.8	1.9	2.4	2.7	3.1
-20～0	1.7	2.3	2.5	3.1	3.5	4.2
0～20	2.4	2.9	3.2	3.3	3.9	4.4
20～40	2.5	3.1	3.4	3.4	4.0	4.5
40～60	2.6	3.1	3.5	3.7	4.1	4.6
60～80	2.5	3.1	3.5	3.6	4.2	4.7
80～100						
100～120						
120～140						

CDGM

H-LaF2	717479	n_d = 1.71700	υ_d = 47.89	$n_F - n_C$ = 0.014972
		n_e = 1.72056	υ_e = 47.65	$n_{F'} - n_{C'}$ = 0.015122

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.70107
n_s	852.11	1.70476
n_r	706.52	1.70997
n_C	656.27	1.71248
$n_{C'}$	643.85	1.71320
n_{He-Ne}	632.8	1.71387
n_D	589.29	1.71687
n_d	587.56	1.71700
n_e	546.07	1.72056
n_F	486.13	1.72745
$n_{F'}$	479.99	1.72832
n_g	435.83	1.73584
n_h	404.66	1.74291
n_i	365.01	1.75526
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	2.8722293E+00
A_1	-5.7088356E-03
A_2	2.9242175E-02
A_3	-1.4611532E-03
A_4	2.5252525E-04
A_5	-1.0867241E-05

折射率温度系数常数 Constants of dn/dt	
D_0	-4.12E-06
D_1	2.75E-08
D_2	-1.05E-10
E_0	8.05E-07
E_1	-8.24E-10
λ_{TK}(μm)	0.107

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2465	$P'_{s,t}$	0.2440
$P_{C,s}$	0.5156	$P'_{C',s}$	0.5581
$P_{d,C}$	0.3016	$P'_{d,C'}$	0.2512
$P_{e,d}$	0.2380	$P'_{e,d}$	0.2356
$P_{g,F}$	0.5604	$P'_{g,F'}$	0.4973
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	-0.0098	$\Delta P_{C,s}$	0.0007
$\Delta P_{F,e}$	-0.0030	$\Delta P_{g,F}$	-0.0038

着色度 Color Code	
λ_{80}/λ_5	380/340
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	666
T_s (℃)	704
$T_{10^{14.5}}$ (℃)	612
$T_{10^{13}}$ (℃)	650
$T_{10^{7.6}}$(℃)	772
$\alpha_{-30/70℃}$(10^{-7}/K)	74
$\alpha_{100/300℃}$(10^{-7}/K)	91
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	6
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.892	0.795
2200	0.954	0.909
2000	0.981	0.962
1800	0.991	0.981
1600	0.997	0.993
1400	0.997	0.995
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.999	0.998
650	0.999	0.998
600	0.999	0.998
550	0.999	0.998
500	0.998	0.997
480	0.997	0.995
460	0.997	0.994
440	0.995	0.991
420	0.993	0.986
400	0.988	0.976
390	0.979	0.958
380	0.963	0.928
370	0.928	0.862
360	0.851	0.725
350	0.688	0.474
340	0.383	0.147
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	561
F_A	205
E (10^7Pa)	9061
G (10^7Pa)	3524
μ	0.286
B (10^{-12}/Pa)	

其他性质 Other Properties	
ρ (g/cm^3)	4.25

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	-1.0	-0.6	-0.3	-0.1	0.5	0.8
-20～0	-1.0	-0.6	-0.3	0.0	0.5	1.0
0～20	-0.6	0.1	0.6	0.7	1.4	1.8
20～40	-0.2	0.7	1.0	1.2	1.5	2.0
40～60	0.2	0.8	1.0	1.1	1.6	2.2
60～80	0.3	0.9	1.1	1.2	1.7	2.4
80～100						
100～120						
120～140						

H-LaF3B	744449	n_d = 1.74400	υ_d = 44.90	$n_F - n_C$ = 0.016570
		n_e = 1.74794	υ_e = 44.63	$n_{F'} - n_{C'}$ = 0.016760

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.72670
n_s	852.11	1.73068
n_r	706.52	1.73630
n_C	656.27	1.73906
$n_{C'}$	643.85	1.73984
n_{He-Ne}	632.8	1.74057
n_D	589.29	1.74386
n_d	587.56	1.74400
n_e	546.07	1.74794
n_F	486.13	1.75563
$n_{F'}$	479.99	1.75660
n_g	435.83	1.76502
n_h	404.66	1.77298
n_i	365.01	1.78694
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	2.9610804E+00
A_1	-7.4557550E-03
A_2	2.9397524E-02
A_3	-7.0973461E-04
A_4	1.7964741E-04
A_5	-7.4281384E-06

折射率温度系数常数 Constants of dn/dt	
D_0	-2.32E-06
D_1	1.48E-08
D_2	-1.59E-10
E_0	5.14E-07
E_1	6.02E-10
λ_{TK}(μm)	0.283

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2402	$P'_{s,t}$	0.2375
$P_{C,s}$	0.5057	$P'_{C',s}$	0.5465
$P_{d,C}$	0.2981	$P'_{d,C'}$	0.2482
$P_{e,d}$	0.2378	$P'_{e,d}$	0.2351
$P_{g,F}$	0.5667	$P'_{g,F'}$	0.5024
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	-0.0119	$\Delta P_{C,s}$	-0.0022
$\Delta P_{F,e}$	-0.0010	$\Delta P_{g,F}$	-0.0025

着色度 Color Code	
λ_{80}/λ_5	380/335
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	618
T_s (℃)	680
$T_{10^{14.5}}$ (℃)	582
$T_{10^{13}}$ (℃)	616
$T_{10^{7.6}}$(℃)	751
$\alpha_{-30/70℃}$(10^{-7}/K)	80
$\alpha_{100/300℃}$(10^{-7}/K)	97
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	3
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.902	0.814
2200	0.957	0.915
2000	0.960	0.921
1800	0.990	0.980
1600	0.997	0.994
1400	0.998	0.996
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.996
700	0.998	0.997
650	0.998	0.997
600	0.999	0.998
550	0.999	0.999
500	0.998	0.997
480	0.998	0.997
460	0.997	0.995
440	0.996	0.992
420	0.994	0.988
400	0.986	0.973
390	0.978	0.957
380	0.961	0.923
370	0.923	0.852
360	0.843	0.710
350	0.671	0.450
340	0.352	0.124
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	568
F_A	182
E (10^7Pa)	9781
G (10^7Pa)	3780
μ	0.294
B (10^{-12}/Pa)	1.51

其他性质 Other Properties	
ρ (g/cm^3)	4.39

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	-0.5	0.1	0.2	0.2	0.6	1.6
-20～0	0.4	0.9	1.2	1.5	2.4	2.9
0～20	0.2	0.8	1.2	1.9	2.1	2.6
20～40	0.7	1.2	1.4	1.7	2.0	3.2
40～60	0.6	1.1	1.2	1.2	2.7	3.4
60～80	0.6	1.2	1.5	1.7	2.5	3.2
80～100						
100～120						
120～140						

H-LaF4	750350	n_d = 1.74950	υ_d = 34.99	$n_F - n_C$ = 0.021421
		n_e = 1.75458	υ_e = 34.78	$n_{F'} - n_{C'}$ = 0.021697

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.72804
n_s	852.11	1.73278
n_r	706.52	1.73975
n_C	656.27	1.74319
$n_{C'}$	643.85	1.74419
n_{He-Ne}	632.8	1.74511
n_D	589.29	1.74932
n_d	587.56	1.74950
n_e	546.07	1.75458
n_F	486.13	1.76461
$n_{F'}$	479.99	1.76589
n_g	435.83	1.77717
n_h	404.66	1.78817
n_i	365.01	1.80838
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	2.9561205E+00
A_1	-5.5767875E-03
A_2	3.7258236E-02
A_3	-7.1868609E-04
A_4	1.9999863E-04
A_5	-2.8002519E-06

折射率温度系数常数 Constants of dn/dt	
D_0	6.53E-07
D_1	1.81E-08
D_2	-1.59E-10
E_0	9.02E-07
E_1	8.16E-10
λ_{TK}(μm)	0.246

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2213	$P'_{s,t}$	0.2185
$P_{C,s}$	0.4860	$P'_{C',s}$	0.5259
$P_{d,C}$	0.2946	$P'_{d,C'}$	0.2448
$P_{e,d}$	0.2371	$P'_{e,d}$	0.2340
$P_{g,F}$	0.5863	$P'_{g,F'}$	0.5199
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	-0.0039	$\Delta P_{C,s}$	0.0015
$\Delta P_{F,e}$	-0.0022	$\Delta P_{g,F}$	0.0003

着色度 Color Code	
λ_{80}/λ_5	405/355
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	580
T_s (℃)	630
$T_{10^{14.5}}$ (℃)	535
$T_{10^{13}}$ (℃)	568
$T_{10^{7.6}}$(℃)	704
$\alpha_{-30/70℃}$(10^{-7}/K)	80
$\alpha_{100/300℃}$(10^{-7}/K)	95
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	2
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.917	0.841
2200	0.962	0.926
2000	0.985	0.971
1800	0.992	0.984
1600	0.997	0.995
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.998	0.997
650	0.998	0.996
600	0.998	0.996
550	0.997	0.994
500	0.994	0.988
480	0.990	0.981
460	0.987	0.975
440	0.983	0.967
420	0.974	0.948
400	0.949	0.900
390	0.917	0.840
380	0.851	0.725
370	0.691	0.478
360	0.371	0.138
350		
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	545
F_A	178
E (10^7Pa)	9105
G (10^7Pa)	3563
μ	0.278
B (10^{-12}/Pa)	2.42

其他性质 Other Properties	
ρ (g/cm^3)	3.92

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	1.3	2.0	2.7	2.9	3.4	4.4
-20～0	2.0	3.1	3.3	3.5	4.7	5.7
0～20	2.4	3.5	3.6	4.3	5.1	6.3
20～40	2.5	3.4	3.9	4.2	5.4	6.2
40～60	2.5	3.5	4.0	4.5	5.6	6.6
60～80	2.8	3.8	4.4	4.6	5.6	6.9
80～100						
100～120						
120～140						

H-LaF4GT	750350	n_d = 1.74950	υ_d = 34.99	$n_F - n_C$ = 0.021421
		n_e = 1.75458	υ_e = 34.78	$n_{F'} - n_{C'}$ = 0.021697

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.72804
n_s	852.11	1.73278
n_r	706.52	1.73975
n_C	656.27	1.74319
$n_{C'}$	643.85	1.74419
n_{He-Ne}	632.8	1.74511
n_D	589.29	1.74932
n_d	587.56	1.74950
n_e	546.07	1.75458
n_F	486.13	1.76461
$n_{F'}$	479.99	1.76589
n_g	435.83	1.77717
n_h	404.66	1.78817
n_i	365.01	1.80838
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

A_0	2.9561205E+00
A_1	-5.5767875E-03
A_2	3.7258236E-02
A_3	-7.1868609E-04
A_4	1.9999863E-04
A_5	-2.8002519E-06

折射率温度系数常数 Constants of dn/dt

D_0	6.53E-07
D_1	1.81E-08
D_2	-1.59E-10
E_0	9.02E-07
E_1	8.16E-10
λ_{TK}(μm)	0.246

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2213	$P'_{s,t}$	0.2185
$P_{C,s}$	0.4860	$P'_{C',s}$	0.5259
$P_{d,C}$	0.2946	$P'_{d,C'}$	0.2448
$P_{e,d}$	0.2371	$P'_{e,d}$	0.2340
$P_{g,F}$	0.5863	$P'_{g,F'}$	0.5199
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	-0.0039	$\Delta P_{C,s}$	0.0015
$\Delta P_{F,e}$	-0.0022	$\Delta P_{g,F}$	0.0003

着色度 Color Code

λ_{80}/λ_5	400/355
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	580
T_s (℃)	630
$T_{10^{14.5}}$ (℃)	535
$T_{10^{13}}$ (℃)	568
$T_{10^{7.6}}$(℃)	704
$\alpha_{-30/70℃}$(10^{-7}/K)	80
$\alpha_{100/300℃}$(10^{-7}/K)	95
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	2
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.915	0.838
2200	0.960	0.921
2000	0.984	0.968
1800	0.991	0.982
1600	0.996	0.993
1400	0.997	0.995
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.999	0.998
650	0.998	0.997
600	0.998	0.997
550	0.998	0.996
500	0.996	0.992
480	0.993	0.987
460	0.991	0.983
440	0.988	0.977
420	0.982	0.964
400	0.964	0.930
390	0.942	0.887
380	0.895	0.801
370	0.775	0.601
360	0.505	0.255
350	0.138	0.019
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties

H_K (10^7Pa)	545
F_A	178
E (10^7Pa)	9105
G (10^7Pa)	3563
μ	0.278
B (10^{-12}/Pa)	2.42

其他性质 Other Properties

ρ (g/cm^3)	3.92

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	1.3	2.0	2.7	2.9	3.4	4.4
-20～0	2.0	3.1	3.3	3.5	4.7	5.7
0～20	2.4	3.5	3.6	4.3	5.1	6.3
20～40	2.5	3.4	3.9	4.2	5.4	6.2
40～60	2.5	3.5	4.0	4.5	5.6	6.6
60～80	2.8	3.8	4.4	4.6	5.6	6.9
80～100						
100～120						
120～140						

CDGM

H-LaFL5	754375	n_d = 1.75367	υ_d = 37.49	$n_F - n_C$ = 0.020102
		n_e = 1.75842	υ_e = 37.21	$n_{F'} - n_{C'}$ = 0.020382

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.73306
n_s	852.11	1.73780
n_r	706.52	1.74446
n_C	656.27	1.74774
$n_{C'}$	643.85	1.74867
n_{He-Ne}	632.8	1.74955
n_D	589.29	1.75350
n_d	587.56	1.75367
n_e	546.07	1.75842
n_F	486.13	1.76785
$n_{F'}$	479.99	1.76906
n_g	435.83	1.77952
n_h	404.66	1.78970
n_i	365.01	1.80821
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	2.9845296E+00
A_1	-1.1296680E-02
A_2	3.0977515E-02
A_3	4.3182915E-04
A_4	4.8238302E-05
A_5	2.9461228E-06

折射率温度系数常数 Constants of dn/dt	
D_0	-2.04E-07
D_1	2.80E-08
D_2	-1.11E-10
E_0	6.56E-07
E_1	-8.41E-10
λ_{TK}(μm)	0.272

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2358	$P'_{s,t}$	0.2326
$P_{C,s}$	0.4945	$P'_{C',s}$	0.5333
$P_{d,C}$	0.2950	$P'_{d,C'}$	0.2453
$P_{e,d}$	0.2363	$P'_{e,d}$	0.2330
$P_{g,F}$	0.5805	$P'_{g,F'}$	0.5132
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0074	$\Delta P_{C,s}$	0.0041
$\Delta P_{F,e}$	0.0000	$\Delta P_{g,F}$	-0.0013

着色度 Color Code	
λ_{80}/λ_5	410/350
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	647
T_s (℃)	687
$T_{10}^{14.5}$ (℃)	604
T_{10}^{13} (℃)	640
$T_{10}^{7.6}$(℃)	754
$\alpha_{-30/70℃}$(10^{-7}/K)	70
$\alpha_{100/300℃}$(10^{-7}/K)	84
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	5
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.906	0.820
2200	0.966	0.934
2000	0.989	0.979
1800	0.997	0.994
1600	0.999	0.998
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.998	0.997
650	0.998	0.996
600	0.997	0.995
550	0.996	0.993
500	0.991	0.982
480	0.987	0.974
460	0.983	0.966
440	0.978	0.956
420	0.968	0.937
400	0.946	0.894
390	0.922	0.850
380	0.880	0.770
370	0.770	0.600
360	0.520	0.270
350	0.140	0.020
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	576
F_A	135
E (10^7Pa)	10508
G (10^7Pa)	4114
μ	0.277
B (10^{-12}/Pa)	

其他性质 Other Properties	
ρ (g/cm^3)	3.71

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	0.4	1.2	1.9	2.1	2.4	3.7
-20～0	1.6	1.9	2.3	2.8	3.8	4.7
0～20	1.6	2.1	2.6	3.0	3.9	4.9
20～40	2.1	2.7	3.1	3.4	4.2	5.0
40～60	2.3	3.2	3.4	3.7	4.5	5.2
60～80	2.4	3.2	3.5	3.8	4.7	5.4
80～100						
100～120						
120～140						

H-LaF6LA	757477	n_d = 1.757000	υ_d = 47.71	$n_F - n_C$ = 0.015866
		n_e = 1.760776	υ_e = 47.47	$n_{F'} - n_{C'}$ = 0.016027

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	1.713767
$n_{1970.09}$	1970.09	1.721601
$n_{1529.58}$	1529.58	1.729912
$n_{1060.0}$	1060.0	1.738633
n_t	1013.98	1.739647
n_s	852.11	1.743906
n_r	706.52	1.749527
n_C	656.27	1.752224
$n_{C'}$	643.85	1.752981
n_{He-Ne}	632.8	1.753690
n_D	589.29	1.756860
n_d	587.56	1.757000
n_e	546.07	1.760776
n_F	486.13	1.768090
$n_{F'}$	479.99	1.769008
n_g	435.83	1.776906
n_h	404.66	1.784322
n_i	365.01	1.797168
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
K_1	1.12023521E+00
L_1	3.35766705E-03
K_2	8.97573526E-01
L_2	2.27710735E-02
K_3	1.36654860E+00
L_3	9.20376324E+01

折射率温度系数常数 Constants of dn/dt	
D_0	3.90E-06
D_1	1.55E-08
D_2	-2.90E-11
E_0	7.82E-07
E_1	-2.61E-11
λ_{TK}(μm)	0.083

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2684	$P'_{s,t}$	0.2657
$P_{C,s}$	0.5243	$P'_{C',s}$	0.5662
$P_{d,C}$	0.3010	$P'_{d,C'}$	0.2508
$P_{e,d}$	0.2380	$P'_{e,d}$	0.2356
$P_{g,F}$	0.5557	$P'_{g,F'}$	0.4928
$P_{i,h}$	0.8097	$P'_{i,h}$	0.8015

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0216	$\Delta P_{C,s}$	0.0097
$\Delta P_{F,e}$	-0.0026	$\Delta P_{g,F}$	-0.0088

着色度 Color Code	
λ_{80}/λ_5	390/320
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	646
T_s (℃)	680
$T_{10^{14.5}}$ (℃)	603
$T_{10^{13}}$ (℃)	632
$T_{10^{7.6}}$(℃)	731
$\alpha_{-30/70℃}$(10^{-7}/K)	57
$\alpha_{100/300℃}$(10^{-7}/K)	69
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	6
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.810	0.650
2200	0.950	0.902
2000	0.982	0.965
1800	0.996	0.992
1600	0.999	0.998
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.998	0.997
650	0.998	0.997
600	0.998	0.997
550	0.998	0.997
500	0.997	0.994
480	0.996	0.992
460	0.994	0.989
440	0.992	0.984
420	0.988	0.976
400	0.979	0.958
390	0.969	0.938
380	0.952	0.906
370	0.924	0.853
360	0.880	0.770
350	0.810	0.650
340	0.690	0.480
330	0.510	0.260
320	0.260	0.070
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	729
F_A	86
E (10^7Pa)	11806
G (10^7Pa)	4570
μ	0.291
B (10^{-12}/Pa)	1.84

其他性质 Other Properties	
ρ (g/cm^3)	4.06

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	3.8	4.8	4.9	5.2	5.8	6.1
-20～0	3.8	4.9	5.1	5.4	6.0	6.3
0～20	4.0	4.9	5.3	5.6	6.1	6.7
20～40	4.2	5.0	5.5	5.7	6.2	6.8
40～60	4.6	5.3	5.6	5.7	6.4	6.9
60～80	5.0	5.4	5.7	5.7	6.4	6.9
80～100						
100～120						
120～140						

CDGM

H-LaF7	782371	n_d = 1.78179	υ_d = 37.09	$n_F - n_C$ = 0.021077
		n_e = 1.78679	υ_e = 36.83	$n_{F'} - n_{C'}$ = 0.021366

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.76035
n_s	852.11	1.76525
n_r	706.52	1.77216
n_C	656.27	1.77559
$n_{C'}$	643.85	1.77657
n_{He-Ne}	632.8	1.77748
n_D	589.29	1.78161
n_d	587.56	1.78179
n_e	546.07	1.78679
n_F	486.13	1.79667
$n_{F'}$	479.99	1.79793
n_g	435.83	1.80891
n_h	404.66	1.81950
n_i	365.01	1.83870
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

A_0	3.0798693E+00
A_1	-1.2098823E-02
A_2	3.1337189E-02
A_3	9.8583688E-04
A_4	-1.3379864E-05
A_5	5.4990762E-06

折射率温度系数常数 Constants of dn/dt

D_0	-1.02E-06
D_1	1.70E-08
D_2	-1.39E-10
E_0	6.63E-07
E_1	4.31E-10
λ_{TK}(μm)	0.279

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2325	$P'_{s,t}$	0.2293
$P_{C,s}$	0.4906	$P'_{C',s}$	0.5298
$P_{d,C}$	0.2940	$P'_{d,C'}$	0.2446
$P_{e,d}$	0.2370	$P'_{e,d}$	0.2338
$P_{g,F}$	0.5806	$P'_{g,F'}$	0.5138
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	0.0020	$\Delta P_{C,s}$	0.0012
$\Delta P_{F,e}$	-0.0004	$\Delta P_{g,F}$	-0.0019

着色度 Color Code

λ_{80}/λ_5	410/350
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	659
T_s (℃)	699
$T_{10}^{14.5}$ (℃)	603
T_{10}^{13} (℃)	650
$T_{10}^{7.6}$(℃)	763
$\alpha_{-30/70℃}$(10^{-7}/K)	80
$\alpha_{100/300℃}$(10^{-7}/K)	95
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	5
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.901	0.812
2200	0.964	0.930
2000	0.985	0.970
1800	0.993	0.986
1600	0.998	0.995
1400	0.998	0.997
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.998	0.996
650	0.998	0.996
600	0.997	0.995
550	0.997	0.995
500	0.995	0.991
480	0.994	0.988
460	0.991	0.983
440	0.986	0.973
420	0.978	0.957
400	0.956	0.914
390	0.930	0.864
380	0.880	0.774
370	0.774	0.599
360	0.562	0.316
350	0.224	0.050
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties

H_K (10^7Pa)	571
F_A	161
E (10^7Pa)	10916
G (10^7Pa)	4243
μ	0.286
B (10^{-12}/Pa)	

其他性质 Other Properties

ρ (g/cm^3)	3.77

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	0.4	0.7	1.5	1.7	2.0	3.4
-20～0	0.9	1.7	2.5	2.7	3.7	4.2
0～20	1.3	2.0	2.5	2.9	3.7	4.4
20～40	1.4	2.2	2.6	2.9	3.7	5.0
40～60	1.6	2.3	2.7	2.9	3.8	5.2
60～80	1.7	2.5	2.7	3.0	3.9	5.1
80～100						
100～120						
120～140						

H-LaF10LA	788475	n_d = 1.788000	υ_d = 47.49	$n_F - n_C$ = 0.016592
		n_e = 1.791950	υ_e = 47.25	$n_{F'} - n_{C'}$ = 0.016760

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	1.744703
$n_{1970.09}$	1970.09	1.752270
$n_{1529.58}$	1529.58	1.760322
$n_{1060.0}$	1060.0	1.768965
n_t	1013.98	1.769993
n_s	852.11	1.774356
n_r	706.52	1.780192
n_C	656.27	1.783007
$n_{C'}$	643.85	1.783798
n_{He-Ne}	632.8	1.784538
n_D	589.29	1.787853
n_d	587.56	1.788000
n_e	546.07	1.791950
n_F	486.13	1.799599
$n_{F'}$	479.99	1.800558
n_g	435.83	1.808810
n_h	404.66	1.816553
n_i	365.01	1.829972
$n_{313.18}$	313.18	1.858341
$n_{302.15}$	302.15	1.867099

色散公式常数 Constants of Dispersion Formula

K_1	1.93178403E+00
L_1	9.97340769E-03
K_2	1.89897276E-01
L_2	3.68891042E-02
K_3	1.09736515E+00
L_3	7.72777489E+01

折射率温度系数常数 Constants of dn/dt

D_0	1.59E-06
D_1	1.70E-08
D_2	-2.83E-11
E_0	6.60E-07
E_1	1.76E-10
λ_{TK}(μm)	0.184

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2630	$P'_{s,t}$	0.2603
$P_{C,s}$	0.5214	$P'_{C',s}$	0.5634
$P_{d,C}$	0.3009	$P'_{d,C'}$	0.2507
$P_{e,d}$	0.2381	$P'_{e,d}$	0.2357
$P_{g,F}$	0.5551	$P'_{g,F'}$	0.4924
$P_{i,h}$	0.8088	$P'_{i,h}$	0.8007

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	0.0143	$\Delta P_{C,s}$	0.0074
$\Delta P_{F,e}$	-0.0027	$\Delta P_{g,F}$	-0.0097

着色度 Color Code

λ_{80}/λ_5	380/315
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	681
T_s (℃)	707
$T_{10}^{14.5}$ (℃)	636
T_{10}^{13} (℃)	661
$T_{10}^{7.6}$(℃)	756
$\alpha_{-30/70℃}$(10^{-7}/K)	61
$\alpha_{100/300℃}$(10^{-7}/K)	77
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	3
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.823	0.677
2200	0.948	0.900
2000	0.981	0.963
1800	0.994	0.987
1600	0.998	0.995
1400	0.998	0.996
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.999	0.998
650	0.999	0.997
600	0.998	0.996
550	0.997	0.995
500	0.997	0.994
480	0.996	0.992
460	0.995	0.991
440	0.992	0.985
420	0.990	0.981
400	0.984	0.969
390	0.979	0.958
380	0.970	0.940
370	0.953	0.909
360	0.926	0.857
350	0.879	0.773
340	0.806	0.649
330	0.680	0.462
320	0.449	0.202
310	0.167	0.028
300		
290		
280		

机械性质 Mechanical Properties

H_K (10^7Pa)	652
F_A	100
E (10^7Pa)	12398
G (10^7Pa)	4787
μ	0.295
B (10^{-12}/Pa)	1.39

其他性质 Other Properties

ρ (g/cm^3)	4.30

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	2.4	2.9	3.5	3.6	3.9	4.5
-20～0	2.8	3.3	3.6	3.9	4.7	5.2
0～20	3.0	3.7	4.1	4.3	4.7	5.3
20～40	3.1	3.7	4.2	4.4	4.7	5.4
40～60	3.4	4.0	4.2	4.5	5.0	5.6
60～80	3.7	4.2	4.6	4.8	5.4	5.9
80～100						
100～120						
120～140						

CDGM

H-LaF50B	773496	n_d = 1.772500	υ_d = 49.60	$n_F - n_C$ = 0.015575
		n_e = 1.776209	υ_e = 49.36	$n_{F'} - n_{C'}$ = 0.015726

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	1.730421
$n_{1970.09}$	1970.09	1.737963
$n_{1529.58}$	1529.58	1.745963
$n_{1060.0}$	1060.0	1.754426
n_t	1013.98	1.755418
n_s	852.11	1.759600
n_r	706.52	1.765140
n_C	656.27	1.767798
$n_{C'}$	643.85	1.768544
n_{He-Ne}	632.8	1.769242
n_D	589.29	1.772362
n_d	587.56	1.772500
n_e	546.07	1.776209
n_F	486.13	1.783373
$n_{F'}$	479.99	1.784270
n_g	435.83	1.791965
n_h	404.66	1.799156
n_i	365.01	1.811543
$n_{313.18}$	313.18	1.837297
$n_{302.15}$	302.15	1.845095

色散公式常数 Constants of Dispersion Formula	
K_1	1.17461263E+00
L_1	8.26267633E+01
K_2	1.65889744E+00
L_2	8.05128060E-03
K_3	4.13174064E-01
L_3	2.69612640E-02

折射率温度系数常数 Constants of dn/dt	
D_0	2.17E-06
D_1	1.36E-08
D_2	-3.28E-11
E_0	5.95E-07
E_1	8.86E-10
λ_{TK}(μm)	0.161

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2685	$P'_{s,t}$	0.2659
$P_{C,s}$	0.5264	$P'_{C',s}$	0.5687
$P_{d,C}$	0.3019	$P'_{d,C'}$	0.2516
$P_{e,d}$	0.2381	$P'_{e,d}$	0.2359
$P_{g,F}$	0.5517	$P'_{g,F'}$	0.4893
$P_{i,h}$	0.7953	$P'_{i,h}$	0.7877

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0149	$\Delta P_{C,s}$	0.0074
$\Delta P_{F,e}$	-0.0026	$\Delta P_{g,F}$	-0.0096

着色度 Color Code	
λ_{80}/λ_5	375/305
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	681
T_s (℃)	708
$T_{10^{14.5}}$ (℃)	637
$T_{10^{13}}$ (℃)	665
$T_{10^{7.6}}$(℃)	754
$\alpha_{-30/70℃}$(10^{-7}/K)	58
$\alpha_{100/300℃}$(10^{-7}/K)	75
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	3
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.814	0.662
2200	0.947	0.896
2000	0.981	0.962
1800	0.993	0.987
1600	0.997	0.995
1400	0.998	0.996
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.997	0.994
700	0.997	0.994
650	0.997	0.994
600	0.998	0.996
550	0.998	0.996
500	0.998	0.996
480	0.997	0.994
460	0.996	0.993
440	0.993	0.987
420	0.991	0.982
400	0.986	0.973
390	0.980	0.961
380	0.971	0.943
370	0.954	0.911
360	0.926	0.857
350	0.879	0.773
340	0.809	0.654
330	0.706	0.499
320	0.557	0.310
310	0.339	0.115
300	0.122	0.015
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	723
F_A	92
E (10^7Pa)	12370
G (10^7Pa)	4793
μ	0.290
B (10^{-12}/Pa)	1.39

其他性质 Other Properties	
ρ (g/cm^3)	4.24

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	-0.1	0.4	0.6	0.7	1.3	1.5
-40～-20	0.6	1.0	1.3	1.5	2.0	2.1
-20～0	1.4	1.8	2.0	2.1	2.5	3.1
0～20	1.4	1.9	2.0	2.3	2.7	3.3
20～40	2.0	2.4	2.7	2.8	3.4	4.0
40～60	2.2	2.9	3.1	3.3	3.8	4.2
60～80	2.0	2.9	2.9	3.5	3.7	4.4
80～100	2.4	3.2	3.5	3.8	4.3	4.8
100～120	2.8	3.5	3.7	4.1	4.7	5.2
120～140	3.1	3.8	4.1	4.2	4.9	5.4

H-LaF51	700481	n_d = 1.70000	υ_d = 48.08	$n_F - n_C$ = 0.014559
		n_e = 1.70346	υ_e = 47.80	$n_{F'} - n_{C'}$ = 0.014717

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.68440
n_s	852.11	1.68814
n_r	706.52	1.69319
n_C	656.27	1.69564
$n_{C'}$	643.85	1.69633
n_{He-Ne}	632.8	1.69697
n_D	589.29	1.69987
n_d	587.56	1.70000
n_e	546.07	1.70346
n_F	486.13	1.71020
$n_{F'}$	479.99	1.71104
n_g	435.83	1.71835
n_h	404.66	1.72526
n_i	365.01	1.73736
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	2.8274056E+00
A_1	-1.1383462E-02
A_2	2.1720871E-02
A_3	3.8598574E-04
A_4	1.3185783E-05
A_5	6.8378313E-07

折射率温度系数常数 Constants of dn/dt	
D_0	-2.02E-06
D_1	1.89E-08
D_2	-1.30E-10
E_0	4.46E-07
E_1	1.77E-10
λ_{TK}(μm)	0.281

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2569	$P'_{s,t}$	0.2541
$P_{C,s}$	0.5151	$P'_{C',s}$	0.5565
$P_{d,C}$	0.2995	$P'_{d,C'}$	0.2494
$P_{e,d}$	0.2377	$P'_{e,d}$	0.2351
$P_{g,F}$	0.5600	$P'_{g,F'}$	0.4969
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	-0.0008	$\Delta P_{C,s}$	-0.0003
$\Delta P_{F,e}$	-0.0004	$\Delta P_{g,F}$	-0.0038

着色度 Color Code	
λ_{80}/λ_5	380/340
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	649
T_s (℃)	686
$T_{10^{14.5}}$ (℃)	601
$T_{10^{13}}$ (℃)	629
$T_{10^{7.6}}$(℃)	738
$\alpha_{-30/70℃}$(10^{-7}/K)	80
$\alpha_{100/300℃}$(10^{-7}/K)	94
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	2
D_A	3
CR	2
RC(S)	1
RA(S)	4

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.861	0.742
2200	0.944	0.891
2000	0.979	0.958
1800	0.989	0.979
1600	0.996	0.992
1400	0.997	0.995
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.998	0.997
650	0.998	0.996
600	0.997	0.995
550	0.997	0.995
500	0.997	0.994
480	0.996	0.992
460	0.994	0.989
440	0.993	0.987
420	0.991	0.982
400	0.983	0.967
390	0.973	0.947
380	0.954	0.910
370	0.909	0.826
360	0.807	0.652
350	0.589	0.347
340	0.239	0.057
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	576
F_A	175
E (10^7Pa)	9644
G (10^7Pa)	3745
μ	0.288
B (10^{-12}/Pa)	1.58

其他性质 Other Properties	
ρ (g/cm^3)	3.82

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	0.0	0.3	0.5	0.8	0.9	1.5
-20～0	-0.1	0.8	1.2	1.3	1.4	2.3
0～20	0.5	1.2	1.4	1.6	2.0	2.6
20～40	0.8	1.2	1.4	1.5	2.3	2.8
40～60	1.0	1.4	1.4	1.6	2.4	2.9
60～80	1.1	1.3	1.4	1.7	2.5	3.0
80～100						
100～120						
120～140						

CDGM

H-LaF52	786442	n_d = 1.785900	υ_d = 44.19	$n_F - n_C$ = 0.017786
		n_e = 1.790129	υ_e = 43.94	$n_{F'} - n_{C'}$ = 0.017984

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	1.742964
$n_{1970.09}$	1970.09	1.749952
$n_{1529.58}$	1529.58	1.757519
$n_{1060.0}$	1060.0	1.765981
n_t	1013.98	1.767019
n_s	852.11	1.771497
n_r	706.52	1.777606
n_C	656.27	1.780584
$n_{C'}$	643.85	1.781423
n_{He-Ne}	632.8	1.782210
n_D	589.29	1.785743
n_d	587.56	1.785900
n_e	546.07	1.790129
n_F	486.13	1.798370
$n_{F'}$	479.99	1.799407
n_g	435.83	1.808369
n_h	404.66	1.816838
n_i	365.01	1.831657
$n_{313.18}$	313.18	1.863646
$n_{302.15}$	302.15	1.873728

色散公式常数 Constants of Dispersion Formula

K_1	2.25893751E-01
L_1	3.91551736E-02
K_2	1.88248028E+00
L_2	1.00951886E-02
K_3	1.11307009E+00
L_3	8.50042906E+01

折射率温度系数常数 Constants of dn/dt

D_0	7.56E-06
D_1	1.95E-08
D_2	-5.14E-11
E_0	6.79E-07
E_1	7.10E-10
λ_{TK}(μm)	0.233

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2518	$P'_{s,t}$	0.2490
$P_{C,s}$	0.5109	$P'_{C',s}$	0.5519
$P_{d,C}$	0.2989	$P'_{d,C'}$	0.2489
$P_{e,d}$	0.2378	$P'_{e,d}$	0.2352
$P_{g,F}$	0.5622	$P'_{g,F'}$	0.4983
$P_{i,h}$	0.8332	$P'_{i,h}$	0.8240

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	0.0082	$\Delta P_{C,s}$	0.0047
$\Delta P_{F,e}$	-0.0022	$\Delta P_{g,F}$	-0.0083

着色度 Color Code

λ_{80}/λ_5	385/320
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	588
T_s (℃)	625
$T_{10^{14.5}}$ (℃)	558
$T_{10^{13}}$ (℃)	584
$T_{10^{7.6}}$(℃)	686
$\alpha_{-30/70℃}$(10^{-7}/K)	59
$\alpha_{100/300℃}$(10^{-7}/K)	72
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	2
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.853	0.728
2200	0.962	0.925
2000	0.985	0.970
1800	0.995	0.990
1600	0.998	0.997
1400	0.999	0.997
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.996
700	0.998	0.996
650	0.998	0.996
600	0.997	0.995
550	0.997	0.994
500	0.996	0.993
480	0.995	0.991
460	0.993	0.987
440	0.989	0.979
420	0.985	0.971
400	0.977	0.954
390	0.966	0.934
380	0.951	0.905
370	0.920	0.847
360	0.871	0.759
350	0.793	0.629
340	0.676	0.457
330	0.504	0.254
320	0.265	0.070
310		
300		
290		
280		

机械性质 Mechanical Properties

H_K (10^7Pa)	668
F_A	94
E (10^7Pa)	11290
G (10^7Pa)	4350
μ	0.297
B (10^{-12}/Pa)	2.13

其他性质 Other Properties

ρ (g/cm^3)	4.39

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	5.8	6.1	6.6	7.3	8.1	8.5
-20～0	6.3	6.7	7.4	7.8	8.3	8.9
0～20	6.6	7.5	7.6	7.9	8.5	9.5
20～40	6.6	7.6	7.8	7.9	9.2	9.6
40～60	6.7	8.1	8.3	8.4	9.3	10.3
60～80	7.2	8.2	8.6	8.7	9.6	10.6
80～100						
100～120						
120～140						

CDGM

H-LaF53	743492	n_d = 1.743300	υ_d = 49.22	$n_F - n_C$ = 0.015101
		n_e = 1.746896	υ_e = 48.98	$n_{F'} - n_{C'}$ = 0.015249

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	1.702895
$n_{1970.09}$	1970.09	1.710090
$n_{1529.58}$	1529.58	1.717730
$n_{1060.0}$	1060.0	1.725841
n_t	1013.98	1.726795
n_s	852.11	1.730824
n_r	706.52	1.736175
n_C	656.27	1.738747
$n_{C'}$	643.85	1.739469
n_{He-Ne}	632.8	1.740144
n_D	589.29	1.743166
n_d	587.56	1.743300
n_e	546.07	1.746896
n_F	486.13	1.753848
$n_{F'}$	479.99	1.754718
n_g	435.83	1.762197
n_h	404.66	1.769196
n_i	365.01	1.781268
$n_{313.18}$	313.18	1.806440
$n_{302.15}$	302.15	1.814079

色散公式常数 Constants of Dispersion Formula	
K_1	1.52005515E+00
L_1	7.46606502E-03
K_2	1.09140777E+00
L_2	8.19422153E+01
K_3	4.52588708E-01
L_3	2.63954349E-02

折射率温度系数常数 Constants of dn/dt	
D_0	7.84E-06
D_1	1.78E-08
D_2	-1.78E-11
E_0	6.13E-07
E_1	7.28E-10
λ_{TK}(μm)	0.217

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2668	$P'_{s,t}$	0.2642
$P_{C,s}$	0.5247	$P'_{C',s}$	0.5669
$P_{d,C}$	0.3015	$P'_{d,C'}$	0.2512
$P_{e,d}$	0.2381	$P'_{e,d}$	0.2358
$P_{g,F}$	0.5529	$P'_{g,F'}$	0.4905
$P_{i,h}$	0.7994	$P'_{i,h}$	0.7917

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0133	$\Delta P_{C,s}$	0.0066
$\Delta P_{F,e}$	-0.0024	$\Delta P_{g,F}$	-0.0090

着色度 Color Code	
λ_{80}/λ_5	370/300
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	590
T_s (℃)	621
$T_{10^{14.5}}$ (℃)	550
$T_{10^{13}}$ (℃)	582
$T_{10^{7.6}}$(℃)	682
$\alpha_{-30/70℃}$(10^{-7}/K)	55
$\alpha_{100/300℃}$(10^{-7}/K)	73
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	3
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.800	0.640
2200	0.939	0.881
2000	0.976	0.952
1800	0.989	0.979
1600	0.996	0.992
1400	0.998	0.996
1200	0.998	0.997
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.997
850	0.998	0.996
800	0.998	0.995
700	0.997	0.994
650	0.997	0.993
600	0.997	0.993
550	0.997	0.993
500	0.995	0.990
480	0.993	0.987
460	0.992	0.984
440	0.988	0.977
420	0.985	0.970
400	0.978	0.956
390	0.970	0.940
380	0.954	0.910
370	0.930	0.860
360	0.880	0.780
350	0.810	0.650
340	0.710	0.500
330	0.570	0.320
320	0.410	0.170
310	0.250	0.060
300	0.100	0.010
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	698
F_A	104
E (10^7Pa)	10678
G (10^7Pa)	4084
μ	0.307
B (10^{-12}/Pa)	

其他性质 Other Properties	
ρ (g/cm^3)	4.16

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	5.9	6.8	7.3	7.6	7.9	8.1
-20～0	6.5	6.8	7.3	7.4	7.8	8.4
0～20	6.5	6.6	6.8	7.2	8.1	9.0
20～40	6.5	7.4	7.8	8.0	8.7	9.3
40～60	6.7	7.5	7.8	8.0	8.6	9.2
60～80	6.9	7.6	8.0	8.4	8.9	9.6
80～100						
100～120						
120～140						

CDGM

H-LaF54	800422	n_d = 1.79952	υ_d = 42.24	$n_F - n_C$ = 0.018927
		n_e = 1.80401	υ_e = 42.00	$n_{F'} - n_{C'}$ = 0.019145

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.77963
n_s	852.11	1.78426
n_r	706.52	1.79072
n_C	656.27	1.79387
$n_{C'}$	643.85	1.79476
n_{He-Ne}	632.8	1.79560
n_D	589.29	1.79935
n_d	587.56	1.79952
n_e	546.07	1.80401
n_F	486.13	1.81280
$n_{F'}$	479.99	1.81391
n_g	435.83	1.82354
n_h	404.66	1.83270
n_i	365.01	1.84881
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	3.1447020E+00
A_1	-1.0105906E-02
A_2	3.4309697E-02
A_3	-8.3312791E-04
A_4	2.1700843E-04
A_5	-8.7014790E-06

折射率温度系数常数 Constants of dn/dt	
D_0	6.31E-06
D_1	2.13E-08
D_2	9.75E-11
E_0	1.02E-06
E_1	2.29E-10
λ_{TK}(μm)	0.077

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2446	$P'_{s,t}$	0.2418
$P_{C,s}$	0.5077	$P'_{C',s}$	0.5484
$P_{d,C}$	0.2983	$P'_{d,C'}$	0.2486
$P_{e,d}$	0.2372	$P'_{e,d}$	0.2345
$P_{g,F}$	0.5674	$P'_{g,F'}$	0.5030
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0071	$\Delta P_{C,s}$	0.0061
$\Delta P_{F,e}$	-0.0021	$\Delta P_{g,F}$	-0.0064

着色度 Color Code	
λ_{80}/λ_5	395/335
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	602
T_s (℃)	630
$T_{10^{14.5}}$ (℃)	559
$T_{10^{13}}$ (℃)	587
$T_{10^{7.6}}$(℃)	687
$\alpha_{-30/70℃}$(10^{-7}/K)	57
$\alpha_{100/300℃}$(10^{-7}/K)	70
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	2
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.850	0.730
2200	0.960	0.921
2000	0.984	0.969
1800	0.995	0.990
1600	0.998	0.996
1400	0.999	0.998
1200	0.999	0.998
1060	0.998	0.997
1000	0.998	0.997
950	0.998	0.996
900	0.998	0.996
850	0.998	0.996
800	0.998	0.997
700	0.998	0.997
650	0.998	0.997
600	0.998	0.996
550	0.997	0.995
500	0.997	0.994
480	0.996	0.993
460	0.995	0.991
440	0.992	0.985
420	0.987	0.974
400	0.974	0.949
390	0.961	0.924
380	0.949	0.900
370	0.900	0.810
360	0.820	0.680
350	0.680	0.460
340	0.380	0.150
330	0.080	0.010
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	698
F_A	104
E (10^7Pa)	11076
G (10^7Pa)	4249
μ	0.303
B (10^{-12}/Pa)	2.16

其他性质 Other Properties	
ρ (g/cm^3)	4.51

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	6.0	7.0	7.3	7.6	8.1	9.1
-20～0	6.0	7.0	7.2	7.4	8.7	9.1
0～20	5.9	7.1	7.2	7.7	8.4	9.1
20～40	6.2	7.3	8.0	8.2	8.5	9.3
40～60	6.8	7.5	8.5	8.7	9.3	10.0
60～80	7.4	8.1	8.6	9.1	9.9	11.1
80～100						
100～120						
120～140						

CDGM

H-LaF55	762401	n_d = 1.762000	υ_d = 40.11	$n_F - n_C$ = 0.019000
		n_e = 1.766509	υ_e = 39.83	$n_{F'} - n_{C'}$ = 0.019244

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	1.721805
$n_{1970.09}$	1970.09	1.727456
$n_{1529.58}$	1529.58	1.733819
$n_{1060.0}$	1060.0	1.741545
n_t	1013.98	1.742551
n_s	852.11	1.747000
n_r	706.52	1.753275
n_C	656.27	1.756386
$n_{C'}$	643.85	1.757268
n_{He-Ne}	632.8	1.758097
n_D	589.29	1.761833
n_d	587.56	1.762000
n_e	546.07	1.766509
n_F	486.13	1.775386
$n_{F'}$	479.99	1.776512
n_g	435.83	1.786306
n_h	404.66	1.795679
n_i	365.01	1.812368
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

K_1	1.73920103E+00
L_1	9.74400845E-03
K_2	1.16162575E+00
L_2	1.11118099E+02
K_3	2.79488106E-01
L_3	4.23325277E-02

折射率温度系数常数 Constants of dn/dt

D_0	-2.76E-06
D_1	1.53E-08
D_2	-4.05E-11
E_0	7.53E-07
E_1	5.10E-10
λ_{TK}(μm)	0.241

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2342	$P'_{s,t}$	0.2312
$P_{C,s}$	0.4940	$P'_{C',s}$	0.5336
$P_{d,C}$	0.2955	$P'_{d,C'}$	0.2459
$P_{e,d}$	0.2373	$P'_{e,d}$	0.2343
$P_{g,F}$	0.5747	$P'_{g,F'}$	0.5089
$P_{i,h}$	0.8784	$P'_{i,h}$	0.8672

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	-0.0071	$\Delta P_{C,s}$	-0.0025
$\Delta P_{F,e}$	-0.0005	$\Delta P_{g,F}$	-0.0027

着色度 Color Code

λ_{80}/λ_5	385/340
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	619
T_s (℃)	673
$T_{10}^{14.5}$ (℃)	578
T_{10}^{13} (℃)	613
$T_{10}^{7.6}$(℃)	746
$\alpha_{-30/70℃}$(10^{-7}/K)	82
$\alpha_{100/300℃}$(10^{-7}/K)	95
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	2
D_A	3
CR	1
RC(S)	1
RA(S)	4

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.903	0.815
2200	0.957	0.916
2000	0.981	0.962
1800	0.990	0.981
1600	0.997	0.994
1400	0.998	0.996
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.996
700	0.998	0.996
650	0.997	0.995
600	0.997	0.995
550	0.997	0.995
500	0.996	0.992
480	0.995	0.990
460	0.994	0.988
440	0.991	0.982
420	0.987	0.975
400	0.977	0.954
390	0.963	0.928
380	0.936	0.876
370	0.879	0.772
360	0.748	0.559
350	0.477	0.228
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties

H_K (10^7Pa)	506
F_A	179
E (10^7Pa)	9460
G (10^7Pa)	3663
μ	0.291
B (10^{-12}/Pa)	1.68

其他性质 Other Properties

ρ (g/cm^3)	4.30

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	0.0	0.8	1.1	1.3	2.1	2.7
-40～-20	0.1	0.8	1.1	1.4	2.1	3.0
-20～0	0.2	1.0	1.2	1.5	2.2	3.2
0～20	0.4	1.2	1.4	1.8	2.4	3.5
20～40	0.6	1.3	1.6	2.1	2.7	3.6
40～60	0.7	1.4	1.8	2.2	3.0	3.8
60～80	0.7	1.5	2.0	2.3	3.2	3.9
80～100	0.8	1.7	2.0	2.3	3.3	4.2
100～120	0.8	1.7	2.1	2.3	3.4	4.3
120～140	0.9	1.9	2.3	2.4	3.5	4.4

H-LaF62	720437	n_d = 1.72000	υ_d = 43.68	$n_F - n_C$ = 0.016483
		n_e = 1.72391	υ_e = 43.39	$n_{F'} - n_{C'}$ = 0.016682

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.70288
n_s	852.11	1.70687
n_r	706.52	1.71239
n_C	656.27	1.71511
$n_{C'}$	643.85	1.71588
n_{He-Ne}	632.8	1.71660
n_D	589.29	1.71985
n_d	587.56	1.72000
n_e	546.07	1.72391
n_F	486.13	1.73159
$n_{F'}$	479.99	1.73256
n_g	435.83	1.74095
n_h	404.66	1.74889
n_i	365.01	1.76297
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	2.8892924E+00
A_1	-1.1809100E-02
A_2	2.2083961E-02
A_3	1.3289656E-03
A_4	-9.9776567E-05
A_5	6.8989327E-06

折射率温度系数常数 Constants of dn/dt	
D_0	3.69E-06
D_1	1.78E-08
D_2	-1.65E-10
E_0	7.29E-07
E_1	1.87E-10
λ_{TK}(μm)	0.206

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2421	$P'_{s,t}$	0.2392
$P_{C,s}$	0.4999	$P'_{C',s}$	0.5401
$P_{d,C}$	0.2967	$P'_{d,C'}$	0.2470
$P_{e,d}$	0.2372	$P'_{e,d}$	0.2344
$P_{g,F}$	0.5679	$P'_{g,F'}$	0.5029
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	-0.0101	$\Delta P_{C,s}$	-0.0051
$\Delta P_{F,e}$	0.0001	$\Delta P_{g,F}$	-0.0034

着色度 Color Code	
λ_{80}/λ_5	390/340
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	584
T_s (℃)	637
$T_{10}^{14.5}$ (℃)	538
T_{10}^{13} (℃)	576
$T_{10}^{7.6}$(℃)	715
$\alpha_{-30/70℃}$(10^{-7}/K)	70
$\alpha_{100/300℃}$(10^{-7}/K)	88
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	3
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.925	0.856
2200	0.969	0.939
2000	0.987	0.974
1800	0.993	0.986
1600	0.997	0.995
1400	0.998	0.996
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.996
700	0.998	0.996
650	0.998	0.996
600	0.998	0.996
550	0.997	0.995
500	0.996	0.993
480	0.994	0.989
460	0.994	0.988
440	0.991	0.982
420	0.988	0.977
400	0.979	0.958
390	0.967	0.936
380	0.947	0.897
370	0.904	0.817
360	0.806	0.650
350	0.581	0.338
340	0.217	0.047
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	578
F_A	173
E (10^7Pa)	10143
G (10^7Pa)	3925
μ	0.292
B (10^{-12}/Pa)	2.01

其他性质 Other Properties	
ρ (g/cm^3)	3.89

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	3.1	3.6	3.9	4.1	4.8	5.5
-20～0	3.6	4.1	4.4	4.9	5.7	6.0
0～20	4.0	4.7	5.1	5.3	5.9	6.7
20～40	4.1	4.8	5.1	5.4	5.9	6.7
40～60	4.1	4.8	5.1	5.5	5.9	6.8
60～80	4.1	4.8	5.1	5.5	6.0	6.8
80～100						
100～120						
120～140						

H-ZLaF1	802443	n_d = 1.80166	υ_d = 44.26	$n_F - n_C$ = 0.018111
		n_e = 1.80597	υ_e = 44.02	$n_{F'} - n_{C'}$ = 0.018311

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.78230
n_s	852.11	1.78693
n_r	706.52	1.79321
n_C	656.27	1.79624
$n_{C'}$	643.85	1.79710
n_{He-Ne}	632.8	1.79790
n_D	589.29	1.80150
n_d	587.56	1.80166
n_e	546.07	1.80597
n_F	486.13	1.81435
$n_{F'}$	479.99	1.81541
n_g	435.83	1.82453
n_h	404.66	1.83316
n_i	365.01	1.84827
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	3.1622896E+00
A_1	-1.4206768E-02
A_2	2.9459537E-02
A_3	2.1285699E-04
A_4	6.5872560E-05
A_5	-1.6599262E-06

折射率温度系数常数 Constants of dn/dt	
D_0	3.15E-06
D_1	1.76E-08
D_2	-6.68E-11
E_0	5.20E-07
E_1	1.18E-10
λ_{TK}(μm)	0.262

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2556	$P'_{s,t}$	0.2529
$P_{C,s}$	0.5141	$P'_{C',s}$	0.5554
$P_{d,C}$	0.2992	$P'_{d,C'}$	0.2491
$P_{e,d}$	0.2378	$P'_{e,d}$	0.2352
$P_{g,F}$	0.5623	$P'_{g,F'}$	0.4983
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0149	$\Delta P_{C,s}$	0.0077
$\Delta P_{F,e}$	-0.0028	$\Delta P_{g,F}$	-0.0080

着色度 Color Code	
λ_{80}/λ_5	390/320
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	669
T_s (℃)	693
$T_{10^{14.5}}$ (℃)	621
$T_{10^{13}}$ (℃)	653
$T_{10^{7.6}}$(℃)	741
$\alpha_{-30/70℃}$(10^{-7}/K)	53
$\alpha_{100/300℃}$(10^{-7}/K)	72
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	6
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.832	0.693
2200	0.958	0.917
2000	0.986	0.973
1800	0.998	0.997
1600	0.999	0.998
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.996
700	0.997	0.995
650	0.997	0.994
600	0.997	0.994
550	0.997	0.994
500	0.995	0.990
480	0.994	0.987
460	0.992	0.983
440	0.989	0.978
420	0.985	0.970
400	0.976	0.952
390	0.967	0.935
380	0.952	0.905
370	0.926	0.858
360	0.884	0.781
350	0.815	0.664
340	0.687	0.472
330	0.444	0.197
320	0.124	0.015
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	725
F_A	98
E (10^7Pa)	12321
G (10^7Pa)	4768
μ	0.292
B (10^{-12}/Pa)	1.54

其他性质 Other Properties	
ρ (g/cm^3)	4.30

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	3.0	3.8	4.0	4.0	4.8	5.2
-20～0	3.5	4.3	4.5	5.0	5.6	6.3
0～20	4.0	4.5	4.8	5.0	5.7	6.4
20～40	4.1	4.6	4.9	5.1	5.7	6.5
40～60	4.1	4.9	5.1	5.4	6.2	6.7
60～80	4.3	4.8	5.3	5.5	6.3	7.0
80～100						
100～120						
120～140						

CDGM

H-ZLaF2A	803468	n_d = 1.802790	υ_d = 46.76	$n_F - n_C$ = 0.017168
		n_e = 1.806876	υ_e = 46.51	$n_{F'} - n_{C'}$ = 0.017348

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	1.759242
$n_{1970.09}$	1970.09	1.766637
$n_{1529.58}$	1529.58	1.774586
$n_{1060.0}$	1060.0	1.783257
n_t	1013.98	1.784299
n_s	852.11	1.788748
n_r	706.52	1.794737
n_C	656.27	1.797636
$n_{C'}$	643.85	1.798451
n_{He-Ne}	632.8	1.799215
n_D	589.29	1.802638
n_d	587.56	1.802790
n_e	546.07	1.806876
n_F	486.13	1.814804
$n_{F'}$	479.99	1.815799
n_g	435.83	1.824370
n_h	404.66	1.832425
n_i	365.01	1.846399
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
K_1	1.76389273E+00
L_1	8.42148915E-03
K_2	4.07585264E-01
L_2	3.04194282E-02
K_3	1.27020239E+00
L_3	8.95802552E+01

折射率温度系数常数 Constants of dn/dt	
D_0	1.27E-06
D_1	1.49E-08
D_2	-3.26E-11
E_0	6.27E-07
E_1	5.37E-10
λ_{TK}(μm)	0.200

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2591	$P'_{s,t}$	0.2565
$P_{C,s}$	0.5177	$P'_{C',s}$	0.5593
$P_{d,C}$	0.3002	$P'_{d,C'}$	0.2501
$P_{e,d}$	0.2380	$P'_{e,d}$	0.2355
$P_{g,F}$	0.5572	$P'_{g,F'}$	0.4941
$P_{i,h}$	0.8140	$P'_{i,h}$	0.8055

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0103	$\Delta P_{C,s}$	0.0054
$\Delta P_{F,e}$	-0.0023	$\Delta P_{g,F}$	-0.0089

着色度 Color Code	
λ_{80}/λ_5	385/315
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	691
T_s (℃)	718
$T_{10^{14.5}}$ (℃)	646
$T_{10^{13}}$ (℃)	674
$T_{10^{7.6}}$(℃)	765
$\alpha_{-30/70℃}$(10^{-7}/K)	58
$\alpha_{100/300℃}$(10^{-7}/K)	78
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	3
CR	
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.841	0.707
2200	0.955	0.912
2000	0.984	0.968
1800	0.995	0.989
1600	0.998	0.996
1400	0.999	0.997
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.997
800	0.999	0.997
700	0.999	0.997
650	0.999	0.997
600	0.999	0.997
550	0.998	0.996
500	0.998	0.996
480	0.996	0.993
460	0.994	0.989
440	0.990	0.981
420	0.987	0.974
400	0.978	0.956
390	0.968	0.937
380	0.952	0.907
370	0.924	0.853
360	0.876	0.767
350	0.801	0.642
340	0.685	0.469
330	0.517	0.267
320	0.286	0.082
310	0.155	0.024
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	755
F_A	96
E (10^7Pa)	12043
G (10^7Pa)	4642
μ	0.297
B (10^{-12}/Pa)	

其他性质 Other Properties	
ρ (g/cm^3)	4.65

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	2.5	3.1	3.3	3.5	4.1	4.4
-40～-20	2.3	3.3	3.4	3.5	4.1	4.5
-20～0	2.8	3.4	3.5	3.7	4.3	5.0
0～20	2.5	3.1	3.6	3.9	4.3	5.0
20～40	3.0	3.5	3.7	4.2	4.8	5.5
40～60	3.0	3.9	4.0	4.2	5.0	5.5
60～80	3.1	4.0	4.3	4.3	5.1	5.6
80～100	3.2	4.0	4.4	4.5	5.2	5.9
100～120	3.4	4.2	4.5	4.7	5.3	6.1
120～140	3.4	4.2	4.5	4.9	5.5	6.4

H-ZLaF3	855366	n_d = 1.85544	υ_d = 36.59	$n_F - n_C$ = 0.023381
		n_e = 1.86099	υ_e = 36.34	$n_{F'} - n_{C'}$ = 0.023694

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.83155
n_s	852.11	1.83703
n_r	706.52	1.84474
n_C	656.27	1.84856
$n_{C'}$	643.85	1.84964
n_{He-Ne}	632.8	1.85065
n_D	589.29	1.85524
n_d	587.56	1.85544
n_e	546.07	1.86099
n_F	486.13	1.87194
$n_{F'}$	479.99	1.87333
n_g	435.83	1.88546
n_h	404.66	1.89718
n_i	365.01	1.91836
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

A_0	3.3326061E+00
A_1	-1.4221730E-02
A_2	3.6629995E-02
A_3	1.0203791E-03
A_4	-3.1748127E-06
A_5	5.7655628E-06

折射率温度系数常数 Constants of dn/dt

D_0	3.10E-06
D_1	1.77E-08
D_2	-9.07E-11
E_0	8.88E-07
E_1	3.04E-10
λ_{TK}(μm)	0.222

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2344	$P'_{s,t}$	0.2313
$P_{C,s}$	0.4931	$P'_{C',s}$	0.5322
$P_{d,C}$	0.2943	$P'_{d,C'}$	0.2448
$P_{e,d}$	0.2373	$P'_{e,d}$	0.2342
$P_{g,F}$	0.5781	$P'_{g,F'}$	0.5118
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	0.0089	$\Delta P_{C,s}$	0.0049
$\Delta P_{F,e}$	-0.0013	$\Delta P_{g,F}$	-0.0053

着色度 Color Code

λ_{80}/λ_5	
λ_{70}/λ_5	390/350

热性质 Thermal Properties

T_g (℃)	644
T_s (℃)	679
$T_{10}^{14.5}$ (℃)	616
T_{10}^{13} (℃)	644
$T_{10}^{7.6}$(℃)	735
$\alpha_{-30/70℃}$(10^{-7}/K)	60
$\alpha_{100/300℃}$(10^{-7}/K)	74
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	5
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.860	0.740
2200	0.962	0.926
2000	0.987	0.975
1800	0.998	0.996
1600	0.999	0.998
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.997
700	0.998	0.996
650	0.998	0.996
600	0.997	0.994
550	0.996	0.992
500	0.992	0.984
480	0.989	0.978
460	0.984	0.969
440	0.978	0.957
420	0.967	0.936
400	0.941	0.886
390	0.913	0.834
380	0.860	0.740
370	0.730	0.540
360	0.470	0.220
350	0.140	0.020
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties

H_K (10^7Pa)	681
F_A	98
E (10^7Pa)	12068
G (10^7Pa)	4663
μ	0.294
B (10^{-12}/Pa)	1.69

其他性质 Other Properties

ρ (g/cm^3)	4.50

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	3.6	4.5	5.0	5.1	6.1	6.7
-20～0	3.7	4.9	5.2	5.6	6.4	7.9
0～20	4.0	4.9	6.0	6.2	7.1	8.0
20～40	4.4	5.3	5.8	6.2	7.3	8.3
40～60	4.6	5.7	5.9	6.2	7.3	8.6
60～80	4.4	5.9	6.2	6.9	7.4	8.6
80～100						
100～120						
120～140						

CDGM

H-ZLaF4LA	911353	n_d = 1.910820	υ_d = 35.25	$n_F - n_C$ = 0.025839
		n_e = 1.916943	υ_e = 35.00	$n_{F'} - n_{C'}$ = 0.026196

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	1.858979
$n_{1970.09}$	1970.09	1.865841
$n_{1529.58}$	1529.58	1.873678
$n_{1060.0}$	1060.0	1.883517
n_t	1013.98	1.884827
n_s	852.11	1.890684
n_r	706.52	1.899054
n_C	656.27	1.903236
$n_{C'}$	643.85	1.904425
n_{He-Ne}	632.8	1.905542
n_D	589.29	1.910594
n_d	587.56	1.910820
n_e	546.07	1.916943
n_F	486.13	1.929075
$n_{F'}$	479.99	1.930621
n_g	435.83	1.944145
n_h	404.66	1.957222
n_i	365.01	1.980882
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

K_1	2.21255100E+00
L_1	1.18172540E-02
K_2	3.12542616E-01
L_2	4.95862580E-02
K_3	1.56862457E+00
L_3	1.15526490E+02

折射率温度系数常数 Constants of dn/dt

D_0	1.14E-06
D_1	1.37E-08
D_2	-2.92E-11
E_0	8.94E-07
E_1	8.60E-10
λ_{TK}(μm)	0.239

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2267	$P'_{s,t}$	0.2236
$P_{C,s}$	0.4858	$P'_{C',s}$	0.5245
$P_{d,C}$	0.2935	$P'_{d,C'}$	0.2441
$P_{e,d}$	0.2370	$P'_{e,d}$	0.2337
$P_{g,F}$	0.5832	$P'_{g,F'}$	0.5163
$P_{i,h}$	0.9157	$P'_{i,h}$	0.9032

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	0.0001	$\Delta P_{C,s}$	0.0007
$\Delta P_{F,e}$	-0.0008	$\Delta P_{g,F}$	-0.0024

着色度 Color Code

λ_{80}/λ_5	
λ_{70}/λ_5	400/355

热性质 Thermal Properties

T_g (℃)	693
T_s (℃)	735
$T_{10^{14.5}}$ (℃)	648
$T_{10^{13}}$ (℃)	680
$T_{10^{7.6}}$(℃)	795
$\alpha_{-30/70℃}$(10^{-7}/K)	71
$\alpha_{100/300℃}$(10^{-7}/K)	85
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	1
CR	1
RC(S)	1
RA(S)	2

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.919	0.845
2200	0.977	0.954
2000	0.990	0.980
1800	0.996	0.993
1600	0.998	0.997
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.998	0.997
850	0.998	0.997
800	0.996	0.992
700	0.996	0.992
650	0.995	0.990
600	0.996	0.992
550	0.994	0.988
500	0.988	0.976
480	0.982	0.965
460	0.975	0.950
440	0.963	0.928
420	0.947	0.896
400	0.906	0.821
390	0.865	0.748
380	0.793	0.629
370	0.660	0.435
360	0.418	0.175
350		
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties

H_K (10^7Pa)	728
F_A	92
E (10^7Pa)	12695
G (10^7Pa)	4868
μ	0.304
B (10^{-12}/Pa)	1.14

其他性质 Other Properties

ρ (g/cm^3)	5.07

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	2.6	3.7	4.2	4.5	5.6	6.5
-40～-20	2.7	3.8	4.3	4.7	5.7	6.9
-20～0	3.0	4.0	4.4	4.8	5.8	7.0
0～20	3.2	4.1	4.4	5.1	6.0	7.2
20～40	3.2	4.4	4.8	5.3	6.4	7.6
40～60	3.4	4.7	5.1	5.5	6.6	7.9
60～80	3.5	4.9	5.3	5.8	7.0	8.2
80～100	3.6	4.9	5.4	5.9	7.3	8.6
100～120	3.7	4.9	5.6	6.1	7.4	8.8
120～140	3.7	5.1	5.7	6.3	7.5	9.0

CDGM

H-ZLaF4LB	911353	n_d = 1.910820	υ_d = 35.28	$n_F - n_C$ = 0.025815
		n_e = 1.916937	υ_e = 35.03	$n_{F'} - n_{C'}$ = 0.026173

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	1.858972
$n_{1970.09}$	1970.09	1.865850
$n_{1529.58}$	1529.58	1.873698
$n_{1060.0}$	1060.0	1.883539
n_t	1013.98	1.884849
n_s	852.11	1.890703
n_r	706.52	1.899066
n_C	656.27	1.903244
$n_{C'}$	643.85	1.904431
n_{He-Ne}	632.8	1.905547
n_D	589.29	1.910594
n_d	587.56	1.910820
n_e	546.07	1.916937
n_F	486.13	1.929059
$n_{F'}$	479.99	1.930604
n_g	435.83	1.944119
n_h	404.66	1.957193
n_i	365.01	1.980862
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

K_1	3.03787540E-01
L_1	5.00877320E-02
K_2	2.22145931E+00
L_2	1.18758260E-02
K_3	1.54968685E+00
L_3	1.13957667E+02

折射率温度系数常数 Constants of dn/dt

D_0	2.77E-07
D_1	1.42E-08
D_2	-4.04E-11
E_0	8.52E-07
E_1	9.84E-10
λ_{TK}(μm)	0.245

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2268	$P'_{s,t}$	0.2237
$P_{C,s}$	0.4858	$P'_{C',s}$	0.5245
$P_{d,C}$	0.2935	$P'_{d,C'}$	0.2441
$P_{e,d}$	0.2370	$P'_{e,d}$	0.2337
$P_{g,F}$	0.5834	$P'_{g,F'}$	0.5164
$P_{i,h}$	0.9169	$P'_{i,h}$	0.9043

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	0.0001	$\Delta P_{C,s}$	0.0007
$\Delta P_{F,e}$	-0.0007	$\Delta P_{g,F}$	-0.0022

着色度 Color Code

λ_{80}/λ_5	
λ_{70}/λ_5	400/355

热性质 Thermal Properties

T_g (℃)	711
T_s (℃)	746
$T_{10^{14.5}}$ (℃)	661
$T_{10^{13}}$ (℃)	694
$T_{10^{7.6}}$(℃)	805
$\alpha_{-30/70℃}$(10^{-7}/K)	66
$\alpha_{100/300℃}$(10^{-7}/K)	88
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	1
CR	1
RC(S)	2
RA(S)	1

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.922	0.850
2200	0.978	0.956
2000	0.990	0.980
1800	0.997	0.994
1600	0.999	0.998
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.999	0.998
650	0.998	0.997
600	0.998	0.996
550	0.997	0.994
500	0.992	0.983
480	0.987	0.975
460	0.982	0.964
440	0.972	0.946
420	0.956	0.915
400	0.917	0.841
390	0.878	0.770
380	0.810	0.656
370	0.686	0.470
360	0.446	0.199
350	0.173	0.030
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties

H_K (10^7Pa)	686
F_A	139
E (10^7Pa)	12633
G (10^7Pa)	4841
μ	0.305
B (10^{-12}/Pa)	

其他性质 Other Properties

ρ (g/cm^3)	4.84

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	1.8	3.0	3.3	3.8	4.5	5.7
-40～-20	1.8	3.0	3.3	3.8	4.6	5.8
-20～0	2.3	3.2	3.7	4.0	5.1	6.2
0～20	2.6	3.4	4.1	4.4	5.4	6.4
20～40	2.7	3.7	4.2	4.5	5.7	6.9
40～60	2.9	3.9	4.4	4.9	6.1	7.3
60～80	2.9	4.1	4.6	5.1	6.2	7.5
80～100	2.8	4.2	4.7	5.2	6.4	7.8
100～120	2.7	4.4	4.9	5.4	6.6	8.1
120～140	2.9	4.3	5.0	5.5	6.7	8.3

CDGM

H-ZLaF50E	804466	n_d = 1.804000	υ_d = 46.57	$n_F - n_C$ = 0.017263
		n_e = 1.808108	υ_e = 46.32	$n_{F'} - n_{C'}$ = 0.017445

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	1.760900
$n_{1970.09}$	1970.09	1.768091
$n_{1529.58}$	1529.58	1.775869
$n_{1060.0}$	1060.0	1.784438
n_t	1013.98	1.785475
n_s	852.11	1.789913
n_r	706.52	1.795912
n_C	656.27	1.798821
$n_{C'}$	643.85	1.799641
n_{He-Ne}	632.8	1.800408
n_D	589.29	1.803847
n_d	587.56	1.804000
n_e	546.07	1.808108
n_F	486.13	1.816084
$n_{F'}$	479.99	1.817086
n_g	435.83	1.825709
n_h	404.66	1.833806
n_i	365.01	1.847825
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
K_1	1.22239213E+00
L_1	4.45444481E-03
K_2	9.52859931E-01
L_2	2.29973985E-02
K_3	1.37994067E+00
L_3	9.91991267E+01

折射率温度系数常数 Constants of dn/dt	
D_0	1.15E-06
D_1	1.32E-08
D_2	-1.72E-11
E_0	6.09E-07
E_1	4.60E-10
λ_{TK}(μm)	0.211

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2571	$P'_{s,t}$	0.2544
$P_{C,s}$	0.5160	$P'_{C',s}$	0.5576
$P_{d,C}$	0.3000	$P'_{d,C'}$	0.2499
$P_{e,d}$	0.2380	$P'_{e,d}$	0.2355
$P_{g,F}$	0.5576	$P'_{g,F'}$	0.4943
$P_{i,h}$	0.8121	$P'_{i,h}$	0.8036

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0074	$\Delta P_{C,s}$	0.0042
$\Delta P_{F,e}$	-0.0022	$\Delta P_{g,F}$	-0.0088

着色度 Color Code	
λ_{80}/λ_5	380/310
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	691
T_s (℃)	719
$T_{10^{14.5}}$ (℃)	652
$T_{10^{13}}$ (℃)	683
$T_{10^{7.6}}$(℃)	768
$\alpha_{-30/70℃}$(10^{-7}/K)	62
$\alpha_{100/300℃}$(10^{-7}/K)	78
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	3
CR	1
RC(S)	1
RA(S)	2

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.852	0.726
2200	0.927	0.860
2000	0.960	0.922
1800	0.976	0.953
1600	0.985	0.970
1400	0.991	0.983
1200	0.995	0.990
1060	0.996	0.993
1000	0.997	0.995
950	0.998	0.996
900	0.998	0.996
850	0.998	0.997
800	0.998	0.996
700	0.998	0.996
650	0.998	0.996
600	0.998	0.996
550	0.998	0.996
500	0.997	0.994
480	0.996	0.993
460	0.995	0.991
440	0.993	0.986
420	0.990	0.981
400	0.985	0.970
390	0.980	0.960
380	0.971	0.943
370	0.954	0.910
360	0.926	0.857
350	0.880	0.775
340	0.805	0.648
330	0.677	0.459
320	0.451	0.203
310	0.158	0.025
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	705
F_A	96
E (10^7Pa)	12255
G (10^7Pa)	4720
μ	0.298
B (10^{-12}/Pa)	1.29

其他性质 Other Properties	
ρ (g/cm^3)	4.44

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	2.6	2.9	3.0	3.6	4.0	4.5
-40～-20	2.6	3.3	3.5	3.7	4.2	4.6
-20～0	2.6	3.2	3.7	3.9	4.3	4.8
0～20	2.6	3.5	3.7	3.9	4.5	5.3
20～40	2.7	3.5	3.8	4.1	4.6	5.4
40～60	2.7	3.6	3.9	4.2	4.7	5.5
60～80	2.9	3.8	4.0	4.3	4.8	5.6
80～100	3.2	3.9	4.1	4.3	5.2	5.8
100～120	3.7	4.0	4.2	4.5	5.4	5.8
120～140	3.8	4.5	4.6	5.1	5.7	6.2

CDGM

H-ZLaF50D	804466	n_d = 1.80400	υ_d = 46.58	$n_F - n_C$ = 0.017262
		n_e = 1.80811	υ_e = 46.33	$n_{F'} - n_{C'}$ = 0.017443

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.78543
n_s	852.11	1.78986
n_r	706.52	1.79590
n_C	656.27	1.79882
$n_{C'}$	643.85	1.79964
n_{He-Ne}	632.8	1.80041
n_D	589.29	1.80385
n_d	587.56	1.80400
n_e	546.07	1.80811
n_F	486.13	1.81608
$n_{F'}$	479.99	1.81708
n_g	435.83	1.82571
n_h	404.66	1.83382
n_i	365.01	1.84787
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	3.1712294E+00
A_1	-1.2380929E-02
A_2	3.0362875E-02
A_3	-4.1723289E-04
A_4	1.4263007E-04
A_5	-6.1975830E-06

折射率温度系数常数 Constants of dn/dt	
D_0	1.43E-06
D_1	1.84E-08
D_2	1.12E-10
E_0	9.58E-07
E_1	3.67E-09
λ_{TK}(μm)	0.085

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2566	$P'_{s,t}$	0.2540
$P_{C,s}$	0.5191	$P'_{C',s}$	0.5607
$P_{d,C}$	0.3001	$P'_{d,C'}$	0.2500
$P_{e,d}$	0.2381	$P'_{e,d}$	0.2356
$P_{g,F}$	0.5579	$P'_{g,F'}$	0.4948
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0100	$\Delta P_{C,s}$	0.0072
$\Delta P_{F,e}$	-0.0025	$\Delta P_{g,F}$	-0.0085

着色度 Color Code	
λ_{80}/λ_5	390/315
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	687
T_s (℃)	719
$T_{10^{14.5}}$ (℃)	645
$T_{10^{13}}$ (℃)	669
$T_{10^{7.6}}$(℃)	770
$\alpha_{-30/70℃}$(10^{-7}/K)	62
$\alpha_{100/300℃}$(10^{-7}/K)	79
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	3
CR	1
RC(S)	1
RA(S)	2

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.856	0.733
2200	0.963	0.927
2000	0.985	0.971
1800	0.995	0.991
1600	0.998	0.997
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.998	0.996
650	0.997	0.995
600	0.997	0.995
550	0.997	0.995
500	0.996	0.993
480	0.995	0.990
460	0.993	0.987
440	0.991	0.982
420	0.987	0.975
400	0.980	0.960
390	0.972	0.945
380	0.958	0.918
370	0.933	0.870
360	0.889	0.790
350	0.823	0.678
340	0.722	0.522
330	0.577	0.333
320	0.374	0.140
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	732
F_A	103
E (10^7Pa)	12391
G (10^7Pa)	4773
μ	0.298
B (10^{-12}/Pa)	1.34

其他性质 Other Properties	
ρ (g/cm^3)	4.52

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	2.7	3.2	4.1	4.3	4.5	4.7
-20～0	2.8	3.3	4.0	4.4	4.6	5.2
0～20	3.0	3.4	4.1	4.5	5.0	5.6
20～40	3.3	4.2	4.7	4.9	5.8	6.5
40～60	4.1	5.0	5.4	5.4	6.7	7.4
60～80	4.3	5.9	6.3	6.5	7.5	8.5
80～100						
100～120						
120～140						

CDGM

H-ZLaF51	805396	n_d = 1.80450	υ_d = 39.64	$n_F - n_C$ = 0.020298
		n_e = 1.80932	υ_e = 39.39	$n_{F'} - n_{C'}$ = 0.020549

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.78343
n_s	852.11	1.78832
n_r	706.52	1.79514
n_C	656.27	1.79849
$n_{C'}$	643.85	1.79943
n_{He-Ne}	632.8	1.80032
n_D	589.29	1.80433
n_d	587.56	1.80450
n_e	546.07	1.80932
n_F	486.13	1.81879
$n_{F'}$	479.99	1.81998
n_g	435.83	1.83042
n_h	404.66	1.84039
n_i	365.01	1.85819
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

A_0	3.1616394E+00
A_1	-1.2726242E-02
A_2	3.2548221E-02
A_3	3.7383696E-04
A_4	6.4608582E-05
A_5	7.2817771E-08

折射率温度系数常数 Constants of dn/dt

D_0	8.54E-06
D_1	1.58E-08
D_2	-6.65E-11
E_0	6.98E-07
E_1	1.18E-09
λ_{TK}(μm)	0.253

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2409	$P'_{s,t}$	0.2380
$P_{C,s}$	0.5010	$P'_{C',s}$	0.5407
$P_{d,C}$	0.2964	$P'_{d,C'}$	0.2467
$P_{e,d}$	0.2375	$P'_{e,d}$	0.2346
$P_{g,F}$	0.5730	$P'_{g,F'}$	0.5081
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	0.0089	$\Delta P_{C,s}$	0.0056
$\Delta P_{F,e}$	-0.0014	$\Delta P_{g,F}$	-0.0052

着色度 Color Code

λ_{80}/λ_5	410/345
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	601
T_s (℃)	631
$T_{10^{14.5}}$ (℃)	561
$T_{10^{13}}$ (℃)	587
$T_{10^{7.6}}$(℃)	680
$\alpha_{-30/70℃}$(10^{-7}/K)	52
$\alpha_{100/300℃}$(10^{-7}/K)	68
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	3
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.858	0.737
2200	0.960	0.922
2000	0.985	0.970
1800	0.995	0.990
1600	0.998	0.996
1400	0.998	0.997
1200	0.999	0.999
1060	0.999	0.999
1000	0.999	0.999
950	0.999	0.999
900	0.999	0.999
850	0.999	0.999
800	0.998	0.997
700	0.998	0.997
650	0.998	0.997
600	0.998	0.997
550	0.998	0.997
500	0.998	0.997
480	0.996	0.993
460	0.996	0.993
440	0.991	0.982
420	0.985	0.970
400	0.971	0.943
390	0.953	0.910
380	0.930	0.860
370	0.866	0.750
360	0.730	0.530
350	0.450	0.200
340	0.140	0.020
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties

H_K (10^7Pa)	664
F_A	101
E (10^7Pa)	11142
G (10^7Pa)	4263
μ	0.307
B (10^{-12}/Pa)	2.23

其他性质 Other Properties

ρ (g/cm^3)	4.41

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	6.3	7.4	7.6	8.2	8.6	9.2
-20～0	7.1	7.9	8.1	8.3	9.2	10.2
0～20	7.3	8.1	8.6	8.8	9.8	10.7
20～40	7.3	8.2	8.6	9.0	9.9	10.8
40～60	7.6	8.4	8.8	9.1	10.1	11.4
60～80	7.8	8.7	9.2	10.3	10.7	11.7
80～100						
100～120						
120～140						

H-ZLaF52A	806410	n_d = 1.806100	υ_d = 41.02	$n_F - n_C$ = 0.019653
		n_e = 1.810768	υ_e = 40.76	$n_{F'} - n_{C'}$ = 0.019890

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	1.762104
$n_{1970.09}$	1970.09	1.768731
$n_{1529.58}$	1529.58	1.776045
$n_{1060.0}$	1060.0	1.784591
n_t	1013.98	1.785675
n_s	852.11	1.790419
n_r	706.52	1.797016
n_C	656.27	1.800265
$n_{C'}$	643.85	1.801184
n_{He-Ne}	632.8	1.802046
n_D	589.29	1.805927
n_d	587.56	1.806100
n_e	546.07	1.810768
n_F	486.13	1.819918
$n_{F'}$	479.99	1.821074
n_g	435.83	1.831104
n_h	404.66	1.840645
n_i	365.01	1.857488
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

K_1	1.85313688E+00
L_1	9.85534639E-03
K_2	3.17938591E-01
L_2	3.92611678E-02
K_3	1.16396318E+00
L_3	9.31032763E+01

折射率温度系数常数 Constants of dn/dt

D_0	8.88E-06
D_1	1.78E-08
D_2	-3.99E-11
E_0	8.58E-07
E_1	7.59E-10
λ_{TK}(μm)	0.220

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2414	$P'_{s,t}$	0.2385
$P_{C,s}$	0.5010	$P'_{C',s}$	0.5412
$P_{d,C}$	0.2969	$P'_{d,C'}$	0.2472
$P_{e,d}$	0.2375	$P'_{e,d}$	0.2347
$P_{g,F}$	0.5692	$P'_{g,F'}$	0.5043
$P_{i,h}$	0.8570	$P'_{i,h}$	0.8468

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	0.0029	$\Delta P_{C,s}$	0.0023
$\Delta P_{F,e}$	-0.0016	$\Delta P_{g,F}$	-0.0067

着色度 Color Code

λ_{80}/λ_5	400/335
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	573
T_s (℃)	607
$T_{10^{14.5}}$ (℃)	539
$T_{10^{13}}$ (℃)	566
$T_{10^{7.6}}$(℃)	660
$\alpha_{-30/70℃}$(10^{-7}/K)	61
$\alpha_{100/300℃}$(10^{-7}/K)	75
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	3
CR	1
RC(S)	1
RA(S)	4

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.849	0.720
2200	0.956	0.913
2000	0.983	0.967
1800	0.994	0.988
1600	0.998	0.996
1400	0.998	0.997
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.996
700	0.996	0.992
650	0.996	0.992
600	0.996	0.993
550	0.997	0.994
500	0.995	0.991
480	0.994	0.988
460	0.991	0.983
440	0.987	0.975
420	0.984	0.968
400	0.973	0.947
390	0.961	0.923
380	0.938	0.880
370	0.892	0.795
360	0.789	0.622
350	0.566	0.320
340	0.219	0.048
330		
320		
310		
300		
290		
280		

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	7.0	7.7	8.0	8.6	9.3	10.2
-40～-20	7.0	8.2	8.5	8.8	9.5	10.4
-20～0	7.2	8.3	8.8	9.1	9.9	10.8
0～20	7.4	8.4	8.9	9.1	10.1	11.0
20～40	7.8	8.8	9.3	9.6	10.5	11.5
40～60	8.0	9.0	9.4	9.9	10.9	11.9
60～80	8.1	9.3	9.8	10.2	11.1	12.2
80～100	8.2	9.4	9.8	10.2	11.2	12.3
100～120	8.4	9.5	9.9	10.4	11.5	12.6
120～140	8.6	9.8	10.3	10.7	11.8	13.0

机械性质 Mechanical Properties

H_K (10^7Pa)	596
F_A	93
E (10^7Pa)	10910
G (10^7Pa)	4159
μ	0.312
B (10^{-12}/Pa)	2.38

其他性质 Other Properties

ρ (g/cm^3)	4.48

备注 Remarks

CDGM

H-ZLaF52	806410	n_d = 1.80610	υ_d = 40.95	$n_F - n_C$ = 0.019686
		n_e = 1.81077	υ_e = 40.69	$n_{F'} - n_{C'}$ = 0.019924

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.78556
n_s	852.11	1.79035
n_r	706.52	1.79699
n_C	656.27	1.80025
$n_{C'}$	643.85	1.80117
n_{He-Ne}	632.8	1.80204
n_D	589.29	1.80592
n_d	587.56	1.80610
n_e	546.07	1.81077
n_F	486.13	1.81994
$n_{F'}$	479.99	1.82110
n_g	435.83	1.83118
n_h	404.66	1.84077
n_i	365.01	1.85778
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	3.1694345E+00
A_1	-1.2437912E-02
A_2	3.2210112E-02
A_3	1.8145630E-04
A_4	8.9065293E-05
A_5	-1.9193315E-06

折射率温度系数常数 Constants of dn/dt	
D_0	7.46E-06
D_1	1.78E-08
D_2	-1.51E-10
E_0	7.13E-07
E_1	6.48E-10
λ_{TK}(μm)	0.252

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2433	$P'_{s,t}$	0.2404
$P_{C,s}$	0.5029	$P'_{C',s}$	0.5431
$P_{d,C}$	0.2970	$P'_{d,C'}$	0.2474
$P_{e,d}$	0.2372	$P'_{e,d}$	0.2344
$P_{g,F}$	0.5710	$P'_{g,F'}$	0.5059
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0070	$\Delta P_{C,s}$	0.0044
$\Delta P_{F,e}$	-0.0014	$\Delta P_{g,F}$	-0.0050

着色度 Color Code	
λ_{80}/λ_5	395/340
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	599
T_s (℃)	633
$T_{10^{14.5}}$ (℃)	555
$T_{10^{13}}$ (℃)	583
$T_{10^{7.6}}$(℃)	674
$\alpha_{-30/70℃}$(10^{-7}/K)	58
$\alpha_{100/300℃}$(10^{-7}/K)	72
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	3
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.849	0.720
2200	0.956	0.913
2000	0.983	0.967
1800	0.994	0.988
1600	0.998	0.996
1400	0.998	0.997
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.996
700	0.996	0.992
650	0.996	0.992
600	0.996	0.993
550	0.997	0.994
500	0.995	0.991
480	0.994	0.988
460	0.991	0.983
440	0.987	0.975
420	0.984	0.968
400	0.973	0.947
390	0.961	0.923
380	0.938	0.880
370	0.892	0.795
360	0.789	0.622
350	0.566	0.320
340	0.219	0.048
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	650
F_A	98
E (10^7Pa)	11146
G (10^7Pa)	4263
μ	0.307
B (10^{-12}/Pa)	2.12

其他性质 Other Properties	
ρ (g/cm^3)	4.45

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	6.0	6.2	6.6	6.5	7.6	8.4
-20～0	5.8	7.3	7.4	8.0	8.6	9.3
0～20	7.2	6.4	8.0	8.2	9.1	10.3
20～40	6.4	7.7	7.8	8.3	9.6	10.2
40～60	6.7	7.9	8.2	8.7	9.2	10.2
60～80	7.0	7.9	8.4	8.3	9.6	10.5
80～100						
100～120						
120～140						

CDGM

H-ZLaF53B	834372	n_d = 1.834000	υ_d = 37.21	$n_F - n_C$ = 0.022413
		n_e = 1.839316	υ_e = 36.96	$n_{F'} - n_{C'}$ = 0.022709

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	1.786971
$n_{1970.09}$	1970.09	1.793577
$n_{1529.58}$	1529.58	1.800996
$n_{1060.0}$	1060.0	1.810005
n_t	1013.98	1.811179
n_s	852.11	1.816384
n_r	706.52	1.823740
n_C	656.27	1.827395
$n_{C'}$	643.85	1.828432
n_{He-Ne}	632.8	1.829406
n_D	589.29	1.833804
n_d	587.56	1.834000
n_e	546.07	1.839316
n_F	486.13	1.849808
$n_{F'}$	479.99	1.851141
n_g	435.83	1.862770
n_h	404.66	1.873950
n_i	365.01	1.893997
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

K_1	3.02813825E-01
L_1	4.55920200E-02
K_2	1.25522353E+00
L_2	9.99412194E+01
K_3	1.95575794E+00
L_3	1.08167110E-02

折射率温度系数常数 Constants of dn/dt

D_0	9.87E-06
D_1	1.65E-08
D_2	-3.22E-11
E_0	8.90E-07
E_1	1.12E-09
λ_{TK}(μm)	0.243

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2322	$P'_{s,t}$	0.2292
$P_{C,s}$	0.4913	$P'_{C',s}$	0.5305
$P_{d,C}$	0.2947	$P'_{d,C'}$	0.2452
$P_{e,d}$	0.2372	$P'_{e,d}$	0.2341
$P_{g,F}$	0.5783	$P'_{g,F'}$	0.5121
$P_{i,h}$	0.8944	$P'_{i,h}$	0.8828

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	0.0019	$\Delta P_{C,s}$	0.0016
$\Delta P_{F,e}$	-0.0011	$\Delta P_{g,F}$	-0.0040

着色度 Color Code

λ_{80}/λ_5	420/345
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	569
T_s (℃)	604
$T_{10^{14.5}}$ (℃)	520
$T_{10^{13}}$ (℃)	552
$T_{10^{7.6}}$(℃)	661
$\alpha_{-30/70℃}$(10^{-7}/K)	59
$\alpha_{100/300℃}$(10^{-7}/K)	72
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	2
CR	1
RC(S)	1
RA(S)	4

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.901	0.811
2200	0.973	0.947
2000	0.990	0.980
1800	0.997	0.995
1600	0.999	0.998
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.997	0.995
700	0.996	0.993
650	0.996	0.993
600	0.995	0.990
550	0.995	0.990
500	0.993	0.987
480	0.991	0.982
460	0.988	0.976
440	0.981	0.963
420	0.975	0.951
400	0.952	0.906
390	0.928	0.861
380	0.884	0.781
370	0.792	0.628
360	0.611	0.373
350	0.283	0.080
340		
330		
320		
310		
300		
290		
280		

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	7.9	8.8	9.2	9.8	10.4	11.5
-40～-20	8.2	9.0	9.4	9.9	10.6	11.9
-20～0	8.2	9.2	9.5	9.9	11.0	12.3
0～20	8.3	9.4	9.8	10.2	11.5	12.6
20～40	8.5	9.6	10.3	10.8	11.9	13.0
40～60	8.7	10.2	10.6	11.1	12.3	13.6
60～80	9.0	10.4	10.7	11.2	12.3	13.9
80～100	9.1	10.5	10.9	11.4	12.6	14.0
100～120	9.3	10.7	11.2	11.7	13.0	14.4
120～140	9.5	11.0	11.7	12.1	13.5	14.9

机械性质 Mechanical Properties

H_K (10^7Pa)	613
F_A	93
E (10^7Pa)	11043
G (10^7Pa)	4204
μ	0.313
B (10^{-12}/Pa)	2.47

其他性质 Other Properties

ρ (g/cm^3)	4.54

备注 Remarks

CDGM

H-ZLaF53BGT	834372	n_d = 1.834000	υ_d = 37.21	$n_F - n_C$ = 0.022413
		n_e = 1.839316	υ_e = 36.96	$n_{F'} - n_{C'}$ = 0.022709

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	1.786971
$n_{1970.09}$	1970.09	1.793577
$n_{1529.58}$	1529.58	1.800996
$n_{1060.0}$	1060.0	1.810005
n_t	1013.98	1.811179
n_s	852.11	1.816384
n_r	706.52	1.823740
n_C	656.27	1.827395
$n_{C'}$	643.85	1.828432
n_{He-Ne}	632.8	1.829406
n_D	589.29	1.833804
n_d	587.56	1.834000
n_e	546.07	1.839316
n_F	486.13	1.849808
$n_{F'}$	479.99	1.851141
n_g	435.83	1.862770
n_h	404.66	1.873950
n_i	365.01	1.893997
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

K_1	3.02813825E-01
L_1	4.55920200E-02
K_2	1.25522353E+00
L_2	9.99412194E+01
K_3	1.95575794E+00
L_3	1.08167110E-02

折射率温度系数常数 Constants of dn/dt

D_0	9.87E-06
D_1	1.65E-08
D_2	-3.22E-11
E_0	8.90E-07
E_1	1.12E-09
λ_{TK}(μm)	0.243

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2322	$P'_{s,t}$	0.2292
$P_{C,s}$	0.4913	$P'_{C',s}$	0.5305
$P_{d,C}$	0.2947	$P'_{d,C'}$	0.2452
$P_{e,d}$	0.2372	$P'_{e,d}$	0.2341
$P_{g,F}$	0.5783	$P'_{g,F'}$	0.5121
$P_{i,h}$	0.8944	$P'_{i,h}$	0.8828

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	0.0019	$\Delta P_{C,s}$	0.0016
$\Delta P_{F,e}$	-0.0011	$\Delta P_{g,F}$	-0.0040

着色度 Color Code

λ_{80}/λ_5	410/340
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	569
T_s (℃)	604
$T_{10^{14.5}}$ (℃)	520
$T_{10^{13}}$ (℃)	552
$T_{10^{7.6}}$(℃)	661
$\alpha_{-30/70℃}$(10^{-7}/K)	59
$\alpha_{100/300℃}$(10^{-7}/K)	72
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	2
CR	1
RC(S)	1
RA(S)	4

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.899	0.808
2200	0.972	0.945
2000	0.988	0.977
1800	0.996	0.993
1600	0.999	0.998
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.997	0.995
700	0.996	0.993
650	0.996	0.993
600	0.997	0.994
550	0.997	0.994
500	0.996	0.992
480	0.994	0.989
460	0.992	0.985
440	0.988	0.977
420	0.984	0.969
400	0.970	0.940
390	0.954	0.911
380	0.926	0.857
370	0.865	0.748
360	0.735	0.540
350	0.454	0.206
340	0.141	0.020
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties

H_K (10^7Pa)	613
F_A	93
E (10^7Pa)	11043
G (10^7Pa)	4204
μ	0.313
B (10^{-12}/Pa)	2.47

其他性质 Other Properties

ρ (g/cm^3)	4.54

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	7.9	8.8	9.2	9.8	10.4	11.5
-40～-20	8.2	9.0	9.4	9.9	10.6	11.9
-20～0	8.2	9.2	9.5	9.9	11.0	12.3
0～20	8.3	9.4	9.8	10.2	11.5	12.6
20～40	8.5	9.6	10.3	10.8	11.9	13.0
40～60	8.7	10.2	10.6	11.1	12.3	13.6
60～80	9.0	10.4	10.7	11.2	12.3	13.9
80～100	9.1	10.5	10.9	11.4	12.6	14.0
100～120	9.3	10.7	11.2	11.7	13.0	14.4
120～140	9.5	11.0	11.7	12.1	13.5	14.9

H-ZLaF55D	835427	n_d = 1.834810	υ_d = 42.73	$n_F - n_C$ = 0.019539
		n_e = 1.839455	υ_e = 42.48	$n_{F'} - n_{C'}$ = 0.019763

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	1.789181
$n_{1970.09}$	1970.09	1.796354
$n_{1529.58}$	1529.58	1.804187
$n_{1060.0}$	1060.0	1.813124
n_t	1013.98	1.814237
n_s	852.11	1.819073
n_r	706.52	1.825726
n_C	656.27	1.828983
$n_{C'}$	643.85	1.829902
n_{He-Ne}	632.8	1.830764
n_D	589.29	1.834638
n_d	587.56	1.834810
n_e	546.07	1.839455
n_F	486.13	1.848522
$n_{F'}$	479.99	1.849665
n_g	435.83	1.859548
n_h	404.66	1.868906
n_i	365.01	1.885328
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
K_1	2.27765275E-01
L_1	4.12221798E-02
K_2	2.04686906E+00
L_2	1.07489490E-02
K_3	1.20888928E+00
L_3	8.78518998E+01

折射率温度系数常数 Constants of dn/dt	
D_0	1.05E-06
D_1	1.59E-08
D_2	-2.67E-11
E_0	6.94E-07
E_1	2.64E-10
λ_{TK}(μm)	0.221

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2475	$P'_{s,t}$	0.2447
$P_{C,s}$	0.5072	$P'_{C',s}$	0.5479
$P_{d,C}$	0.2982	$P'_{d,C'}$	0.2483
$P_{e,d}$	0.2377	$P'_{e,d}$	0.2350
$P_{g,F}$	0.5643	$P'_{g,F'}$	0.5001
$P_{i,h}$	0.8405	$P'_{i,h}$	0.8309

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0071	$\Delta P_{C,s}$	0.0044
$\Delta P_{F,e}$	-0.0022	$\Delta P_{g,F}$	-0.0086

着色度 Color Code	
λ_{80}/λ_5	400/320
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	692
T_s (℃)	722
$T_{10^{14.5}}$ (℃)	645
$T_{10^{13}}$ (℃)	674
$T_{10^{7.6}}$(℃)	771
$\alpha_{-30/70℃}$(10^{-7}/K)	64
$\alpha_{100/300℃}$(10^{-7}/K)	81
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	2
CR	1
RC(S)	1
RA(S)	2

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.869	0.756
2200	0.965	0.931
2000	0.986	0.972
1800	0.996	0.991
1600	0.999	0.997
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.999	0.998
650	0.999	0.998
600	0.999	0.998
550	0.999	0.998
500	0.997	0.995
480	0.996	0.993
460	0.994	0.989
440	0.991	0.982
420	0.987	0.974
400	0.978	0.957
390	0.969	0.939
380	0.956	0.913
370	0.929	0.863
360	0.888	0.788
350	0.817	0.668
340	0.691	0.478
330	0.468	0.219
320	0.170	0.029
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	684
F_A	97
E (10^7Pa)	12359
G (10^7Pa)	4755
μ	0.299
B (10^{-12}/Pa)	1.26

其他性质 Other Properties	
ρ (g/cm^3)	4.56

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	2.2	3.2	3.6	3.7	4.3	5.1
-40～-20	2.3	3.4	3.7	3.8	4.5	5.2
-20～0	2.4	3.4	3.7	3.9	4.6	5.4
0～20	2.5	3.5	3.7	4.1	4.8	5.5
20～40	2.9	3.6	4.0	4.3	5.2	5.7
40～60	3.2	4.0	4.2	4.6	5.3	6.0
60～80	3.3	4.1	4.3	4.7	5.4	6.3
80～100	3.5	4.2	4.5	4.8	5.6	6.6
100～120	3.5	4.3	4.6	4.9	5.8	6.9
120～140	3.6	4.5	4.8	5.1	6.1	7.1

H-ZLaF55C	835427	n_d = 1.83481	υ_d = 42.71	$n_F - n_C$ = 0.019545
		n_e = 1.83945	υ_e = 42.47	$n_{F'} - n_{C'}$ = 0.019767

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.81421
n_s	852.11	1.81904
n_r	706.52	1.82572
n_C	656.27	1.82898
$n_{C'}$	643.85	1.82990
n_{He-Ne}	632.8	1.83076
n_D	589.29	1.83464
n_d	587.56	1.83481
n_e	546.07	1.83945
n_F	486.13	1.84852
$n_{F'}$	479.99	1.84966
n_g	435.83	1.85953
n_h	404.66	1.86890
n_i	365.01	1.88534
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	3.2717095E+00
A_1	-1.2672158E-02
A_2	3.3530092E-02
A_3	-2.4910401E-05
A_4	1.0247728E-04
A_5	-2.8749646E-06

折射率温度系数常数 Constants of dn/dt	
D_0	1.91E-06
D_1	1.02E-08
D_2	-6.88E-11
E_0	7.48E-07
E_1	2.17E-10
λ_{TK}(μm)	0.194

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2471	$P'_{s,t}$	0.2443
$P_{C,s}$	0.5086	$P'_{C',s}$	0.5494
$P_{d,C}$	0.2983	$P'_{d,C'}$	0.2484
$P_{e,d}$	0.2374	$P'_{e,d}$	0.2347
$P_{g,F}$	0.5634	$P'_{g,F'}$	0.4994
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0082	$\Delta P_{C,s}$	0.0059
$\Delta P_{F,e}$	-0.0022	$\Delta P_{g,F}$	-0.0095

着色度 Color Code	
λ_{80}/λ_5	410/330
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	680
T_s (℃)	709
$T_{10}^{14.5}$ (℃)	634
T_{10}^{13} (℃)	663
$T_{10}^{7.6}$(℃)	758
$\alpha_{-30/70℃}$(10^{-7}/K)	62
$\alpha_{100/300℃}$(10^{-7}/K)	78
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	2
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.862	0.742
2200	0.963	0.927
2000	0.985	0.971
1800	0.995	0.991
1600	0.998	0.996
1400	0.999	0.997
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.997
700	0.998	0.996
650	0.998	0.996
600	0.998	0.997
550	0.999	0.998
500	0.997	0.994
480	0.993	0.987
460	0.990	0.981
440	0.984	0.970
420	0.979	0.958
400	0.965	0.931
390	0.950	0.903
380	0.928	0.861
370	0.887	0.787
360	0.822	0.675
350	0.720	0.518
340	0.560	0.314
330	0.330	0.109
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	722
F_A	93
E (10^7Pa)	12779
G (10^7Pa)	4920
μ	0.299
B (10^{-12}/Pa)	1.35

其他性质 Other Properties	
ρ (g/cm^3)	4.73

备注 Remarks
2021年6月停产，不推荐用于新设计

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	3.3	4.0	3.5	3.9	4.7	5.1
-20～0	3.1	4.5	4.9	5.3	5.8	6.8
0～20	3.3	3.8	4.4	4.7	5.0	6.5
20～40	3.9	4.5	4.7	5.2	5.6	6.3
40～60	2.9	3.2	4.0	4.1	5.2	5.5
60～80	3.3	4.2	5.2	5.3	6.3	7.1
80～100						
100～120						
120～140						

CDGM

H-ZLaF56B	806333	n_d = 1.80610	υ_d = 33.27	$n_F - n_C$ = 0.024230
		n_e = 1.81184	υ_e = 33.03	$n_{F'} - n_{C'}$ = 0.024579

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.78189
n_s	852.11	1.78732
n_r	706.52	1.79513
n_C	656.27	1.79902
$n_{C'}$	643.85	1.80012
n_{He-Ne}	632.8	1.80117
n_D	589.29	1.80589
n_d	587.56	1.80610
n_e	546.07	1.81184
n_F	486.13	1.82325
$n_{F'}$	479.99	1.82470
n_g	435.83	1.83755
n_h	404.66	1.85016
n_i	365.01	1.87351
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	3.1493343E+00
A_1	-1.1154930E-02
A_2	3.7519160E-02
A_3	7.8728879E-04
A_4	2.9727118E-05
A_5	7.4486148E-06

折射率温度系数常数 Constants of dn/dt	
D_0	-9.87E-07
D_1	1.97E-08
D_2	-1.23E-10
E_0	8.59E-07
E_1	9.48E-10
λ_{TK}(μm)	0.252

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2241	$P'_{s,t}$	0.2209
$P_{C,s}$	0.4829	$P'_{C',s}$	0.5208
$P_{d,C}$	0.2924	$P'_{d,C'}$	0.2431
$P_{e,d}$	0.2368	$P'_{e,d}$	0.2334
$P_{g,F}$	0.5903	$P'_{g,F'}$	0.5229
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0040	$\Delta P_{C,s}$	0.0025
$\Delta P_{F,e}$	-0.0005	$\Delta P_{g,F}$	0.0013

着色度 Color Code	
λ_{80}/λ_5	425/360
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	659
T_s (℃)	707
$T_{10^{14.5}}$ (℃)	616
$T_{10^{13}}$ (℃)	650
$T_{10^{7.6}}$(℃)	767
$\alpha_{-30/70℃}$(10^{-7}/K)	74
$\alpha_{100/300℃}$(10^{-7}/K)	86
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	2
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.905	0.820
2200	0.959	0.921
2000	0.985	0.971
1800	0.993	0.985
1600	0.997	0.994
1400	0.998	0.996
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.997	0.995
700	0.997	0.995
650	0.997	0.995
600	0.997	0.995
550	0.996	0.993
500	0.993	0.986
480	0.990	0.981
460	0.986	0.972
440	0.980	0.961
420	0.971	0.942
400	0.945	0.893
390	0.912	0.831
380	0.842	0.709
370	0.675	0.455
360	0.333	0.111
350		
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	582
F_A	149
E (10^7Pa)	11594
G (10^7Pa)	4526
μ	0.281
B (10^{-12}/Pa)	1.79

其他性质 Other Properties	
ρ (g/cm^3)	3.79

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	0.6	1.2	1.6	2.1	3.0	3.7
-20～0	1.1	1.9	2.4	2.6	3.4	5.0
0～20	1.4	2.6	2.8	3.3	3.8	5.3
20～40	1.5	2.8	3.3	3.6	4.8	5.4
40～60	1.8	2.9	3.3	3.7	4.9	6.0
60～80	2.1	2.9	3.3	3.7	5.0	6.3
80～100						
100～120						
120～140						

H-ZLaF66	801350	n_d = 1.801000	υ_d = 34.97	$n_F - n_C$ = 0.022907
		n_e = 1.806423	υ_e = 34.71	$n_{F'} - n_{C'}$ = 0.023233

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	1.753716
$n_{1970.09}$	1970.09	1.760302
$n_{1529.58}$	1529.58	1.767720
$n_{1060.0}$	1060.0	1.776755
n_t	1013.98	1.777934
n_s	852.11	1.783169
n_r	706.52	1.790591
n_C	656.27	1.794291
$n_{C'}$	643.85	1.795342
n_{He-Ne}	632.8	1.796330
n_D	589.29	1.800800
n_d	587.56	1.801000
n_e	546.07	1.806423
n_F	486.13	1.817198
$n_{F'}$	479.99	1.818575
n_g	435.83	1.830661
n_h	404.66	1.842432
n_i	365.01	1.863997
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
K_1	2.33018785E-01
L_1	5.37435377E-02
K_2	1.90660392E+00
L_2	1.14336559E-02
K_3	1.37147086E+00
L_3	1.10630887E+02

折射率温度系数常数 Constants of dn/dt	
D_0	-1.89E-06
D_1	1.64E-08
D_2	-1.41E-10
E_0	8.70E-07
E_1	1.01E-09
λ_{TK}(μm)	0.245

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2285	$P'_{s,t}$	0.2253
$P_{C,s}$	0.4855	$P'_{C',s}$	0.5240
$P_{d,C}$	0.2929	$P'_{d,C'}$	0.2435
$P_{e,d}$	0.2367	$P'_{e,d}$	0.2334
$P_{g,F}$	0.5877	$P'_{g,F'}$	0.5202
$P_{i,h}$	0.9414	$P'_{i,h}$	0.9282

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0031	$\Delta P_{C,s}$	0.0011
$\Delta P_{F,e}$	-0.0001	$\Delta P_{g,F}$	0.0016

着色度 Color Code	
λ_{80}/λ_5	425/355
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	657
T_s (℃)	705
$T_{10^{14.5}}$ (℃)	612
$T_{10^{13}}$ (℃)	645
$T_{10^{7.6}}$(℃)	764
$\alpha_{-30/70℃}$(10^{-7}/K)	79
$\alpha_{100/300℃}$(10^{-7}/K)	93
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	3
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.906	0.820
2200	0.964	0.929
2000	0.986	0.973
1800	0.994	0.988
1600	0.999	0.998
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.998	0.997
800	0.998	0.996
700	0.997	0.995
650	0.997	0.994
600	0.996	0.992
550	0.994	0.988
500	0.988	0.976
480	0.984	0.968
460	0.979	0.959
440	0.972	0.944
420	0.960	0.921
400	0.926	0.857
390	0.892	0.795
380	0.814	0.662
370	0.635	0.403
360	0.381	0.145
350	0.077	0.006
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	596
F_A	204
E (10^7Pa)	10980
G (10^7Pa)	4268
μ	0.286
B (10^{-12}/Pa)	1.69

其他性质 Other Properties	
ρ (g/cm^3)	3.89

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	-0.3	0.8	1.3	1.5	2.2	3.4
-20～0	0.8	1.3	1.7	2.1	3.3	4.0
0～20	1.0	2.0	2.3	2.6	3.7	4.6
20～40	1.0	2.1	2.4	3.1	3.7	5.1
40～60	1.1	2.1	2.6	3.1	3.8	5.1
60～80	1.2	2.1	3.0	3.1	4.4	5.3
80～100						
100～120						
120～140						

CDGM

H-ZLaF66GT	801350	n_d = 1.801000	υ_d = 34.97	$n_F - n_C$ = 0.022907
		n_e = 1.806423	υ_e = 34.71	$n_{F'} - n_{C'}$ = 0.023233

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	1.753716
$n_{1970.09}$	1970.09	1.760302
$n_{1529.58}$	1529.58	1.767720
$n_{1060.0}$	1060.0	1.776755
n_t	1013.98	1.777934
n_s	852.11	1.783169
n_r	706.52	1.790591
n_C	656.27	1.794291
$n_{C'}$	643.85	1.795342
n_{He-Ne}	632.8	1.796330
n_D	589.29	1.800800
n_d	587.56	1.801000
n_e	546.07	1.806423
n_F	486.13	1.817198
$n_{F'}$	479.99	1.818575
n_g	435.83	1.830661
n_h	404.66	1.842432
n_i	365.01	1.863997
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
K_1	2.33018785E-01
L_1	5.37435377E-02
K_2	1.90660392E+00
L_2	1.14336559E-02
K_3	1.37147086E+00
L_3	1.10630887E+02

折射率温度系数常数 Constants of dn/dt	
D_0	-1.89E-06
D_1	1.64E-08
D_2	-1.41E-10
E_0	8.70E-07
E_1	1.01E-09
λ_{TK}(μm)	0.245

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2285	$P'_{s,t}$	0.2253
$P_{C,s}$	0.4855	$P'_{C',s}$	0.5240
$P_{d,C}$	0.2929	$P'_{d,C'}$	0.2435
$P_{e,d}$	0.2367	$P'_{e,d}$	0.2334
$P_{g,F}$	0.5877	$P'_{g,F'}$	0.5202
$P_{i,h}$	0.9414	$P'_{i,h}$	0.9282

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0031	$\Delta P_{C,s}$	0.0011
$\Delta P_{F,e}$	-0.0001	$\Delta P_{g,F}$	0.0016

着色度 Color Code	
λ_{80}/λ_5	415/350
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	657
T_s (℃)	705
$T_{10^{14.5}}$ (℃)	612
$T_{10^{13}}$ (℃)	645
$T_{10^{7.6}}$(℃)	764
$\alpha_{-30/70℃}$(10^{-7}/K)	79
$\alpha_{100/300℃}$(10^{-7}/K)	93
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	3
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.900	0.810
2200	0.961	0.923
2000	0.984	0.969
1800	0.992	0.985
1600	0.998	0.996
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.997
700	0.997	0.995
650	0.997	0.994
600	0.996	0.992
550	0.995	0.990
500	0.991	0.983
480	0.988	0.977
460	0.985	0.971
440	0.980	0.960
420	0.971	0.943
400	0.949	0.900
390	0.921	0.849
380	0.863	0.745
370	0.723	0.523
360	0.458	0.210
350	0.122	0.015
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	596
F_A	204
E (10^7Pa)	10980
G (10^7Pa)	4268
μ	0.286
B (10^{-12}/Pa)	1.69

其他性质 Other Properties	
ρ (g/cm^3)	3.89

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	-0.3	0.8	1.3	1.5	2.2	3.4
-20～0	0.8	1.3	1.7	2.1	3.3	4.0
0～20	1.0	2.0	2.3	2.6	3.7	4.6
20～40	1.0	2.1	2.4	3.1	3.7	5.1
40～60	1.1	2.1	2.6	3.1	3.8	5.1
60～80	1.2	2.1	3.0	3.1	4.4	5.3
80～100						
100～120						
120～140						

H-ZLaF68C	883409	n_d = 1.883000	υ_d = 40.85	$n_F - n_C$ = 0.021617
		n_e = 1.888138	υ_e = 40.60	$n_{F'} - n_{C'}$ = 0.021878

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	1.837157
$n_{1970.09}$	1970.09	1.843528
$n_{1529.58}$	1529.58	1.850740
$n_{1060.0}$	1060.0	1.859565
n_t	1013.98	1.860718
n_s	852.11	1.865823
n_r	706.52	1.873021
n_C	656.27	1.876584
$n_{C'}$	643.85	1.877594
n_{He-Ne}	632.8	1.878541
n_D	589.29	1.882810
n_d	587.56	1.883000
n_e	546.07	1.888138
n_F	486.13	1.898201
$n_{F'}$	479.99	1.899472
n_g	435.83	1.910473
n_h	404.66	1.920894
n_i	365.01	1.939141
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
K_1	1.58833884E+00
L_1	6.89365045E-03
K_2	8.51761035E-01
L_2	2.88290435E-02
K_3	1.58277416E+00
L_3	1.25035659E+02

折射率温度系数常数 Constants of dn/dt	
D_0	6.22E-07
D_1	1.34E-08
D_2	-3.94E-11
E_0	8.98E-07
E_1	8.81E-10
λ_{TK}(μm)	0.175

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2362	$P'_{s,t}$	0.2333
$P_{C,s}$	0.4978	$P'_{C',s}$	0.5380
$P_{d,C}$	0.2968	$P'_{d,C'}$	0.2471
$P_{e,d}$	0.2377	$P'_{e,d}$	0.2348
$P_{g,F}$	0.5677	$P'_{g,F'}$	0.5028
$P_{i,h}$	0.8441	$P'_{i,h}$	0.8340

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	-0.0048	$\Delta P_{C,s}$	-0.0005
$\Delta P_{F,e}$	-0.0018	$\Delta P_{g,F}$	-0.0084

着色度 Color Code	
λ_{80}/λ_5	
λ_{70}/λ_5	390/330

热性质 Thermal Properties	
T_g (℃)	721
T_s (℃)	757
$T_{10}^{14.5}$ (℃)	667
T_{10}^{13} (℃)	702
$T_{10}^{7.6}$(℃)	819
$\alpha_{-30/70℃}$(10^{-7}/K)	70
$\alpha_{100/300℃}$(10^{-7}/K)	87
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	1
CR	1
RC(S)	1
RA(S)	2

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.931	0.867
2200	0.980	0.960
2000	0.992	0.984
1800	0.997	0.995
1600	0.999	0.998
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.997
800	0.998	0.996
700	0.998	0.996
650	0.997	0.995
600	0.997	0.995
550	0.997	0.995
500	0.993	0.986
480	0.989	0.979
460	0.984	0.969
440	0.976	0.953
420	0.968	0.937
400	0.950	0.902
390	0.931	0.866
380	0.901	0.811
370	0.851	0.725
360	0.777	0.603
350	0.669	0.448
340	0.522	0.273
330	0.341	0.116
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	678
F_A	99
E (10^7Pa)	12461
G (10^7Pa)	4768
μ	0.307
B (10^{-12}/Pa)	1.08

其他性质 Other Properties	
ρ (g/cm^3)	5.34

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	2.4	3.3	3.5	3.9	4.7	5.4
-40～-20	2.4	3.3	3.6	4.0	4.7	5.5
-20～0	2.5	3.4	3.8	4.1	4.8	5.6
0～20	2.6	3.5	3.9	4.5	4.9	6.0
20～40	2.6	3.9	4.2	4.6	5.6	6.3
40～60	2.9	4.1	4.4	4.9	5.6	6.6
60～80	3.1	4.1	4.5	4.7	5.8	6.8
80～100	3.1	4.2	4.6	5.0	6.0	6.9
100～120	3.2	4.2	4.7	5.1	6.1	7.0
120～140	3.2	4.3	4.7	5.1	6.1	7.1

H-ZLaF68N	883392	n_d = 1.883000	υ_d = 39.22	$n_F - n_C$ = 0.022515
		n_e = 1.888345	υ_e = 38.97	$n_{F'} - n_{C'}$ = 0.022798

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	1.834724
$n_{1970.09}$	1970.09	1.841618
$n_{1529.58}$	1529.58	1.849347
$n_{1060.0}$	1060.0	1.858653
n_t	1013.98	1.859857
n_s	852.11	1.865171
n_r	706.52	1.872640
n_C	656.27	1.876337
$n_{C'}$	643.85	1.877385
n_{He-Ne}	632.8	1.878368
n_D	589.29	1.882802
n_d	587.56	1.883000
n_e	546.07	1.888345
n_F	486.13	1.898852
$n_{F'}$	479.99	1.900183
n_g	435.83	1.911750
n_h	404.66	1.922796
n_i	365.01	1.942396
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
K_1	1.49455025E+00
L_1	1.09762523E+02
K_2	2.07574257E+00
L_2	1.04040770E-02
K_3	3.61138143E-01
L_3	4.12621420E-02

折射率温度系数常数 Constants of dn/dt	
D_0	-9.92E-09
D_1	1.31E-08
D_2	-2.62E-11
E_0	7.34E-07
E_1	7.89E-10
λ_{TK}(μm)	0.237

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2360	$P'_{s,t}$	0.2331
$P_{C,s}$	0.4959	$P'_{C',s}$	0.5357
$P_{d,C}$	0.2959	$P'_{d,C'}$	0.2463
$P_{e,d}$	0.2374	$P'_{e,d}$	0.2345
$P_{g,F}$	0.5729	$P'_{g,F'}$	0.5074
$P_{i,h}$	0.8705	$P'_{i,h}$	0.8597

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0009	$\Delta P_{C,s}$	0.0015
$\Delta P_{F,e}$	-0.0015	$\Delta P_{g,F}$	-0.0060

着色度 Color Code	
λ_{80}/λ_5	
λ_{70}/λ_5	380/340

热性质 Thermal Properties	
T_g (℃)	719
T_s (℃)	752
$T_{10^{14.5}}$ (℃)	671
$T_{10^{13}}$ (℃)	702
$T_{10^{7.6}}$(℃)	803
$\alpha_{-30/70℃}$(10^{-7}/K)	58
$\alpha_{100/300℃}$(10^{-7}/K)	86
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	1
CR	1
RC(S)	1
RA(S)	1

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.906	0.821
2200	0.975	0.951
2000	0.989	0.979
1800	0.997	0.995
1600	0.999	0.998
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.996
700	0.997	0.995
650	0.997	0.995
600	0.997	0.994
550	0.997	0.994
500	0.995	0.991
480	0.992	0.985
460	0.989	0.979
440	0.984	0.968
420	0.976	0.953
400	0.957	0.916
390	0.938	0.880
380	0.905	0.819
370	0.843	0.711
360	0.729	0.531
350	0.513	0.263
340	0.205	0.042
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	687
F_A	96
E (10^7Pa)	12583
G (10^7Pa)	4831
μ	0.303
B (10^{-12}/Pa)	1.03

其他性质 Other Properties	
ρ (g/cm^3)	5.17

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	1.9	2.6	3.0	3.3	4.1	5.0
-40～-20	2.0	2.8	3.2	3.4	4.2	5.1
-20～0	2.1	2.9	3.2	3.5	4.3	5.2
0～20	2.2	3.0	3.3	3.6	4.4	5.5
20～40	2.3	3.1	3.4	4.0	4.8	5.9
40～60	2.4	3.5	3.8	4.2	5.0	6.0
60～80	2.5	3.5	4.0	4.4	5.5	6.2
80～100	2.7	3.6	4.1	4.6	5.6	6.4
100～120	2.8	3.8	4.2	4.7	5.6	6.7
120～140	2.8	4.0	4.3	4.6	5.7	7.0

H-ZLaF68B	883408	n_d = 1.88300	υ_d = 40.79	$n_F - n_C$ = 0.021640
		n_e = 1.88815	υ_e = 40.56	$n_{F'} - n_{C'}$ = 0.021897

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.86058
n_s	852.11	1.86572
n_r	706.52	1.87299
n_C	656.27	1.87657
$n_{C'}$	643.85	1.87758
n_{He-Ne}	632.8	1.87853
n_D	589.29	1.88281
n_d	587.56	1.88300
n_e	546.07	1.88815
n_F	486.13	1.89821
$n_{F'}$	479.99	1.89948
n_g	435.83	1.91054
n_h	404.66	1.92103
n_i	365.01	1.93949
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	3.4341826E+00
A_1	-1.0619954E-02
A_2	4.0004630E-02
A_3	-6.3794224E-04
A_4	2.1635303E-04
A_5	-8.4987645E-06

折射率温度系数常数 Constants of dn/dt	
D_0	3.45E-07
D_1	1.47E-08
D_2	-7.21E-11
E_0	7.69E-07
E_1	2.19E-10
λ_{TK}(μm)	0.208

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2375	$P'_{s,t}$	0.2347
$P_{C,s}$	0.5014	$P'_{C',s}$	0.5416
$P_{d,C}$	0.2971	$P'_{d,C'}$	0.2475
$P_{e,d}$	0.2380	$P'_{e,d}$	0.2352
$P_{g,F}$	0.5695	$P'_{g,F'}$	0.5049
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0004	$\Delta P_{C,s}$	0.0032
$\Delta P_{F,e}$	-0.0025	$\Delta P_{g,F}$	-0.0067

着色度 Color Code	
λ_{80}/λ_5	
λ_{70}/λ_5	390/340

热性质 Thermal Properties	
T_g (℃)	735
T_s (℃)	771
$T_{10^{14.5}}$ (℃)	691
$T_{10^{13}}$ (℃)	723
$T_{10^{7.6}}$(℃)	830
$\alpha_{-30/70℃}$(10^{-7}/K)	68
$\alpha_{100/300℃}$(10^{-7}/K)	84
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	1
CR	1
RC(S)	1
RA(S)	2

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.913	0.833
2200	0.976	0.952
2000	0.989	0.979
1800	0.996	0.993
1600	0.998	0.997
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.996	0.993
700	0.996	0.993
650	0.996	0.993
600	0.997	0.994
550	0.997	0.994
500	0.992	0.985
480	0.989	0.979
460	0.985	0.971
440	0.978	0.957
420	0.969	0.939
400	0.946	0.894
390	0.921	0.849
380	0.879	0.772
370	0.804	0.647
360	0.671	0.450
350	0.447	0.200
340	0.173	0.030
330		
320		
310		
300		
290		
280		

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	2.3	2.5	3.0	3.7	4.3	4.6
-20～0	2.0	3.0	3.4	4.1	4.4	5.2
0～20	2.1	3.3	3.6	3.9	4.9	5.7
20～40	2.4	3.4	3.8	4.0	4.9	5.9
40～60	2.8	3.6	4.1	4.3	4.9	5.9
60～80	2.7	3.5	3.8	4.1	5.1	6.0
80～100						
100～120						
120～140						

机械性质 Mechanical Properties	
H_K (10^7Pa)	741
F_A	93
E (10^7Pa)	12728
G (10^7Pa)	4886
μ	0.302
B (10^{-12}/Pa)	1.00

其他性质 Other Properties	
ρ (g/cm^3)	5.53

备注 Remarks
已停产，不推荐用于新设计

CDGM

H-ZLaF69	816466	n_d = 1.816000	υ_d = 46.55	$n_F - n_C$ = 0.017530
		n_e = 1.820173	υ_e = 46.30	$n_{F'} - n_{C'}$ = 0.017714

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	1.773156
$n_{1970.09}$	1970.09	1.780148
$n_{1529.58}$	1529.58	1.787736
$n_{1060.0}$	1060.0	1.796213
n_t	1013.98	1.797250
n_s	852.11	1.801716
n_r	706.52	1.807789
n_C	656.27	1.810741
$n_{C'}$	643.85	1.811573
n_{He-Ne}	632.8	1.812352
n_D	589.29	1.815845
n_d	587.56	1.816000
n_e	546.07	1.820173
n_F	486.13	1.828271
$n_{F'}$	479.99	1.829287
n_g	435.83	1.838034
n_h	404.66	1.846239
n_i	365.01	1.860430
$n_{313.18}$	313.18	1.890130
$n_{302.15}$	302.15	1.899167

色散公式常数 Constants of Dispersion Formula

K_1	6.59414732E-01
L_1	2.56059960E-02
K_2	1.55675638E+00
L_2	7.27769577E-03
K_3	1.25417967E+00
L_3	9.31176682E+01

折射率温度系数常数 Constants of dn/dt

D_0	1.12E-06
D_1	1.52E-08
D_2	-3.71E-11
E_0	6.39E-07
E_1	4.90E-10
λ_{TK}(μm)	0.192

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2548	$P'_{s,t}$	0.2521
$P_{C,s}$	0.5148	$P'_{C',s}$	0.5565
$P_{d,C}$	0.3000	$P'_{d,C'}$	0.2499
$P_{e,d}$	0.2380	$P'_{e,d}$	0.2356
$P_{g,F}$	0.5569	$P'_{g,F'}$	0.4938
$P_{i,h}$	0.8095	$P'_{i,h}$	0.8011

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	0.0040	$\Delta P_{C,s}$	0.0030
$\Delta P_{F,e}$	-0.0023	$\Delta P_{g,F}$	-0.0095

着色度 Color Code

λ_{80}/λ_5	390/305
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	720
T_s (℃)	747
$T_{10^{14.5}}$ (℃)	665
$T_{10^{13}}$ (℃)	693
$T_{10^{7.6}}$(℃)	797
$\alpha_{-30/70℃}$(10^{-7}/K)	64
$\alpha_{100/300℃}$(10^{-7}/K)	78
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	2
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.870	0.757
2200	0.964	0.930
2000	0.986	0.971
1800	0.995	0.990
1600	0.998	0.996
1400	0.999	0.997
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.996
700	0.998	0.995
650	0.997	0.994
600	0.997	0.993
550	0.996	0.992
500	0.995	0.990
480	0.993	0.987
460	0.991	0.983
440	0.989	0.978
420	0.985	0.971
400	0.978	0.957
390	0.970	0.941
380	0.955	0.912
370	0.931	0.866
360	0.900	0.810
350	0.828	0.685
340	0.738	0.545
330	0.626	0.392
320	0.492	0.242
310	0.305	0.093
300	0.237	0.056
290		
280		

机械性质 Mechanical Properties

H_K (10^7Pa)	721
F_A	128
E (10^7Pa)	12469
G (10^7Pa)	4802
μ	0.298
B (10^{-12}/Pa)	1.22

其他性质 Other Properties

ρ (g/cm^3)	5.01

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	2.4	3.0	3.2	3.4	4.1	4.7
-40～-20	2.5	3.1	3.3	3.6	4.1	4.7
-20～0	2.6	3.1	3.4	3.6	4.1	4.8
0～20	2.6	3.2	3.5	3.7	4.3	5.0
20～40	2.9	3.7	3.8	4.3	4.7	5.4
40～60	2.9	3.7	3.9	4.3	5.0	5.4
60～80	3.1	3.8	4.1	4.3	5.1	5.5
80～100	3.2	4.0	4.3	4.4	5.1	5.8
100～120	3.2	4.0	4.4	4.5	5.2	6.1
120～140	3.3	4.1	4.5	4.7	5.3	6.3

H-ZLaF69A	816466	n_d = 1.816000	υ_d = 46.56	$n_F - n_C$ = 0.017527
		n_e = 1.820172	υ_e = 46.30	$n_{F'} - n_{C'}$ = 0.017713

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	1.773062
$n_{1970.09}$	1970.09	1.780090
$n_{1529.58}$	1529.58	1.787717
$n_{1060.0}$	1060.0	1.796218
n_t	1013.98	1.797257
n_s	852.11	1.801724
n_r	706.52	1.807793
n_C	656.27	1.810744
$n_{C'}$	643.85	1.811575
n_{He-Ne}	632.8	1.812353
n_D	589.29	1.815845
n_d	587.56	1.816000
n_e	546.07	1.820172
n_F	486.13	1.828271
$n_{F'}$	479.99	1.829288
n_g	435.83	1.838042
n_h	404.66	1.846258
n_i	365.01	1.860476
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
K_1	1.39269903E+00
L_1	5.93335223E-03
K_2	8.23697428E-01
L_2	2.40980834E-02
K_3	1.29547295E+00
L_3	9.53762858E+01

折射率温度系数常数 Constants of dn/dt	
D_0	1.27E-06
D_1	1.30E-08
D_2	-2.95E-11
E_0	6.42E-07
E_1	8.08E-10
λ_{TK}(μm)	0.182

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2549	$P'_{s,t}$	0.2522
$P_{C,s}$	0.5146	$P'_{C',s}$	0.5561
$P_{d,C}$	0.2999	$P'_{d,C'}$	0.2498
$P_{e,d}$	0.2380	$P'_{e,d}$	0.2355
$P_{g,F}$	0.5575	$P'_{g,F'}$	0.4942
$P_{i,h}$	0.8112	$P'_{i,h}$	0.8027

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0039	$\Delta P_{C,s}$	0.0028
$\Delta P_{F,e}$	-0.0021	$\Delta P_{g,F}$	-0.0089

着色度 Color Code	
λ_{80}/λ_5	395/330
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	719
T_s (℃)	740
$T_{10^{14.5}}$ (℃)	666
$T_{10^{13}}$ (℃)	694
$T_{10^{7.6}}$(℃)	790
$\alpha_{-30/70℃}$(10^{-7}/K)	64
$\alpha_{100/300℃}$(10^{-7}/K)	78
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	2
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.868	0.753
2200	0.965	0.931
2000	0.986	0.971
1800	0.995	0.990
1600	0.998	0.996
1400	0.998	0.997
1200	0.998	0.997
1060	0.998	0.997
1000	0.998	0.997
950	0.998	0.997
900	0.998	0.997
850	0.998	0.997
800	0.998	0.996
700	0.998	0.996
650	0.997	0.995
600	0.997	0.994
550	0.996	0.993
500	0.995	0.992
480	0.993	0.987
460	0.991	0.983
440	0.988	0.977
420	0.984	0.969
400	0.974	0.948
390	0.961	0.924
380	0.940	0.884
370	0.904	0.817
360	0.839	0.704
350	0.729	0.531
340	0.549	0.301
330	0.293	0.086
320	0.164	0.027
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	710
F_A	92
E (10^7Pa)	12538
G (10^7Pa)	4831
μ	0.298
B (10^{-12}/Pa)	1.21

其他性质 Other Properties	
ρ (g/cm^3)	5.06

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	2.8	3.3	3.7	3.8	4.5	4.9
-40～-20	2.5	3.2	3.4	3.7	4.1	4.7
-20～0	2.7	3.3	3.5	3.7	4.2	4.9
0～20	2.8	3.4	3.6	3.8	4.5	5.0
20～40	3.1	3.5	3.9	4.2	4.7	5.3
40～60	3.1	3.8	4.0	4.3	4.8	5.6
60～80	3.1	4.0	4.2	4.5	5.3	5.8
80～100	3.0	4.1	4.4	4.6	5.4	5.9
100～120	2.9	4.1	4.5	4.7	5.3	6.1
120～140	3.2	4.2	4.6	4.8	5.5	6.3

H-ZLaF71	850323	n_d = 1.850260	υ_d = 32.30	$n_F - n_C$ = 0.026326
		n_e = 1.856486	υ_e = 32.06	$n_{F'} - n_{C'}$ = 0.026715

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	1.796256
$n_{1970.09}$	1970.09	1.803819
$n_{1529.58}$	1529.58	1.812301
$n_{1060.0}$	1060.0	1.822589
n_t	1013.98	1.823931
n_s	852.11	1.829889
n_r	706.52	1.838352
n_C	656.27	1.842579
$n_{C'}$	643.85	1.843781
n_{He-Ne}	632.8	1.844911
n_D	589.29	1.850031
n_d	587.56	1.850260
n_e	546.07	1.856486
n_F	486.13	1.868905
$n_{F'}$	479.99	1.870496
n_g	435.83	1.884518
n_h	404.66	1.898268
n_i	365.01	1.923720
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
K_1	2.76154598E-01
L_1	5.57996382E-02
K_2	2.02569085E+00
L_2	1.20700588E-02
K_3	1.44513509E+00
L_3	9.98778223E+01

折射率温度系数常数 Constants of dn/dt	
D_0	-2.79E-06
D_1	1.48E-08
D_2	-2.75E-11
E_0	8.00E-07
E_1	8.15E-10
λ_{TK}(μm)	0.275

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2263	$P'_{s,t}$	0.2230
$P_{C,s}$	0.4820	$P'_{C',s}$	0.5200
$P_{d,C}$	0.2918	$P'_{d,C'}$	0.2425
$P_{e,d}$	0.2365	$P'_{e,d}$	0.2331
$P_{g,F}$	0.5931	$P'_{g,F'}$	0.5249
$P_{i,h}$	0.9668	$P'_{i,h}$	0.9527

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0099	$\Delta P_{C,s}$	0.0039
$\Delta P_{F,e}$	-0.0002	$\Delta P_{g,F}$	0.0024

着色度 Color Code	
λ_{80}/λ_5	
λ_{70}/λ_5	405/360

热性质 Thermal Properties	
T_g (℃)	612
T_s (℃)	655
$T_{10^{14.5}}$ (℃)	574
$T_{10^{13}}$ (℃)	605
$T_{10^{7.6}}$(℃)	706
$\alpha_{-30/70℃}$(10^{-7}/K)	76
$\alpha_{100/300℃}$(10^{-7}/K)	92
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	3
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.864	0.746
2200	0.954	0.910
2000	0.983	0.967
1800	0.993	0.987
1600	0.997	0.995
1400	0.998	0.996
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.996	0.992
700	0.995	0.991
650	0.994	0.989
600	0.994	0.989
550	0.993	0.986
500	0.986	0.972
480	0.981	0.962
460	0.974	0.949
440	0.963	0.927
420	0.945	0.893
400	0.901	0.812
390	0.858	0.737
380	0.782	0.611
370	0.627	0.393
360	0.332	0.110
350		
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	607
F_A	131
E (10^7Pa)	11225
G (10^7Pa)	4352
μ	0.290
B (10^{-12}/Pa)	1.78

其他性质 Other Properties	
ρ (g/cm^3)	4.22

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	-0.2	0.9	1.3	1.7	2.7	3.7
-40～-20	0.1	0.9	1.4	1.9	2.7	3.9
-20～0	0.1	1.2	1.5	1.9	2.8	4.1
0～20	0.4	1.3	1.7	1.9	3.2	4.5
20～40	0.7	1.3	1.9	2.1	3.5	4.7
40～60	0.8	1.7	2.3	2.6	3.7	5.1
60～80	0.9	2.1	2.4	3.1	4.2	5.7
80～100	0.9	2.3	2.6	3.3	4.5	6.0
100～120	0.9	2.3	2.7	3.4	4.7	6.1
120～140	0.9	2.3	2.7	3.4	4.8	6.2

CDGM

H-ZLaF71AGT	850322	n_d = 1.85026	υ_d = 32.22	$n_F - n_C$ = 0.026392
		n_e = 1.85650	υ_e = 31.97	$n_{F'} - n_{C'}$ = 0.026792

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.82422
n_s	852.11	1.82998
n_r	706.52	1.83836
n_C	656.27	1.84257
$n_{C'}$	643.85	1.84377
n_{He-Ne}	632.8	1.84490
n_D	589.29	1.85004
n_d	587.56	1.85026
n_e	546.07	1.85650
n_F	486.13	1.86897
$n_{F'}$	479.99	1.87056
n_g	435.83	1.88463
n_h	404.66	1.89840
n_i	365.01	1.92389
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	3.2986974E+00
A_1	-1.1281954E-02
A_2	4.0627063E-02
A_3	1.2255254E-03
A_4	2.5692446E-06
A_5	9.1593361E-06

折射率温度系数常数 Constants of dn/dt	
D_0	1.47E-06
D_1	1.75E-08
D_2	-1.77E-11
E_0	6.76E-07
E_1	4.45E-10
λ_{TK}(μm)	0.301

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2182	$P'_{s,t}$	0.2150
$P_{C,s}$	0.4770	$P'_{C',s}$	0.5147
$P_{d,C}$	0.2914	$P'_{d,C'}$	0.2422
$P_{e,d}$	0.2364	$P'_{e,d}$	0.2329
$P_{g,F}$	0.5934	$P'_{g,F'}$	0.5252
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	-0.0028	$\Delta P_{C,s}$	-0.0009
$\Delta P_{F,e}$	0.0005	$\Delta P_{g,F}$	0.0025

着色度 Color Code	
λ_{80}/λ_5	
λ_{70}/λ_5	395/355

热性质 Thermal Properties	
T_g (℃)	720
T_s (℃)	762
$T_{10}^{14.5}$ (℃)	671
T_{10}^{13} (℃)	706
$T_{10}^{7.6}$(℃)	831
$\alpha_{-30/70℃}$(10^{-7}/K)	72
$\alpha_{100/300℃}$(10^{-7}/K)	82
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	1
CR	1
RC(S)	1
RA(S)	2

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.952	0.906
2200	0.980	0.961
2000	0.990	0.981
1800	0.995	0.990
1600	0.998	0.996
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.996
700	0.997	0.994
650	0.996	0.993
600	0.995	0.991
550	0.994	0.989
500	0.989	0.978
480	0.985	0.971
460	0.981	0.962
440	0.973	0.947
420	0.959	0.920
400	0.925	0.856
390	0.884	0.782
380	0.801	0.641
370	0.616	0.379
360	0.277	0.077
350		
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	588
F_A	177
E (10^7Pa)	10696
G (10^7Pa)	4186
μ	0.277
B (10^{-12}/Pa)	1.76

其他性质 Other Properties	
ρ (g/cm^3)	4.42

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	2.7	3.5	3.9	4.2	5.4	6.6
-20～0	2.9	3.6	4.1	4.5	5.5	7.0
0～20	3.0	3.7	4.2	4.8	5.7	7.3
20～40	3.2	4.3	4.4	5.1	6.2	7.5
40～60	3.4	4.5	4.8	5.3	6.4	7.9
60～80	3.6	4.6	5.1	5.6	6.8	8.3
80～100						
100～120						
120～140						

CDGM

H-ZLaF73	881402	n_d = 1.881000	υ_d = 40.16	$n_F - n_C$ = 0.021937
		n_e = 1.886212	υ_e = 39.91	$n_{F'} - n_{C'}$ = 0.022206

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	1.834346
$n_{1970.09}$	1970.09	1.840882
$n_{1529.58}$	1529.58	1.848256
$n_{1060.0}$	1060.0	1.857237
n_t	1013.98	1.858408
n_s	852.11	1.863587
n_r	706.52	1.870883
n_C	656.27	1.874495
$n_{C'}$	643.85	1.875518
n_{He-Ne}	632.8	1.876479
n_D	589.29	1.880807
n_d	587.56	1.881000
n_e	546.07	1.886212
n_F	486.13	1.896432
$n_{F'}$	479.99	1.897724
n_g	435.83	1.908921
n_h	404.66	1.919557
n_i	365.01	1.938267
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

K_1	5.07090015E-01
L_1	3.49987602E-02
K_2	1.92430260E+00
L_2	9.42878144E-03
K_3	1.49886410E+00
L_3	1.16086666E+02

折射率温度系数常数 Constants of dn/dt

D_0	1.20E-06
D_1	1.22E-08
D_2	-2.53E-11
E_0	8.04E-07
E_1	7.88E-10
λ_{TK}(μm)	0.213

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2361	$P'_{s,t}$	0.2332
$P_{C,s}$	0.4972	$P'_{C',s}$	0.5373
$P_{d,C}$	0.2965	$P'_{d,C'}$	0.2469
$P_{e,d}$	0.2376	$P'_{e,d}$	0.2347
$P_{g,F}$	0.5693	$P'_{g,F'}$	0.5042
$P_{i,h}$	0.8529	$P'_{i,h}$	0.8426

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	-0.0021	$\Delta P_{C,s}$	0.0006
$\Delta P_{F,e}$	-0.0018	$\Delta P_{g,F}$	-0.0080

着色度 Color Code

λ_{80}/λ_5	
λ_{70}/λ_5	375/325

热性质 Thermal Properties

T_g (℃)	707
T_s (℃)	741
$T_{10^{14.5}}$ (℃)	658
$T_{10^{13}}$ (℃)	691
$T_{10^{7.6}}$(℃)	805
$\alpha_{-30/70℃}$(10^{-7}/K)	68
$\alpha_{100/300℃}$(10^{-7}/K)	86
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	2
CR	1
RC(S)	2
RA(S)	1

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.919	0.845
2200	0.977	0.954
2000	0.990	0.980
1800	0.997	0.993
1600	0.999	0.997
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.999	0.998
650	0.999	0.997
600	0.998	0.996
550	0.997	0.995
500	0.995	0.990
480	0.992	0.985
460	0.989	0.979
440	0.986	0.973
420	0.981	0.962
400	0.968	0.937
390	0.956	0.914
380	0.936	0.876
370	0.901	0.812
360	0.844	0.713
350	0.757	0.573
340	0.620	0.385
330	0.411	0.169
320	0.187	0.035
310		
300		
290		
280		

机械性质 Mechanical Properties

H_K (10^7Pa)	664
F_A	143
E (10^7Pa)	12387
G (10^7Pa)	4741
μ	0.306
B (10^{-12}/Pa)	

其他性质 Other Properties

ρ (g/cm^3)	5.20

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	2.7	3.6	3.8	4.3	5.1	5.8
-40～-20	2.9	3.7	4.1	4.4	5.2	6.0
-20～0	3.0	3.7	4.2	4.4	5.4	6.1
0～20	3.1	4.0	4.4	4.6	5.6	6.4
20～40	3.1	4.2	4.6	4.8	5.7	6.6
40～60	3.2	4.2	4.6	5.0	5.8	6.8
60～80	3.2	4.3	4.8	5.2	6.0	7.1
80～100	3.4	4.5	5.0	5.4	6.3	7.4
100～120	3.6	4.7	5.0	5.4	6.5	7.6
120～140	3.6	4.8	5.0	5.5	6.6	7.7

H-ZLaF75A	904313	n_d = 1.903660	υ_d = 31.32	$n_F - n_C$ = 0.028857
		n_e = 1.910483	υ_e = 31.08	$n_{F'} - n_{C'}$ = 0.029293

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	1.846873
$n_{1970.09}$	1970.09	1.854381
$n_{1529.58}$	1529.58	1.862924
$n_{1060.0}$	1060.0	1.873634
n_t	1013.98	1.875063
n_s	852.11	1.881462
n_r	706.52	1.890648
n_C	656.27	1.895259
$n_{C'}$	643.85	1.896572
n_{He-Ne}	632.8	1.897808
n_D	589.29	1.903409
n_d	587.56	1.903660
n_e	546.07	1.910483
n_F	486.13	1.924116
$n_{F'}$	479.99	1.925865
n_g	435.83	1.941294
n_h	404.66	1.956452
n_i	365.01	1.984596
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
K_1	1.50615126E+00
L_1	1.02994725E+02
K_2	2.18809221E+00
L_2	1.27716105E-02
K_3	2.97955776E-01
L_3	5.69661668E-02

折射率温度系数常数 Constants of dn/dt	
D_0	-2.09E-06
D_1	1.28E-08
D_2	-7.59E-11
E_0	8.54E-07
E_1	8.32E-10
λ_{TK}(μm)	0.275

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2217	$P'_{s,t}$	0.2184
$P_{C,s}$	0.4781	$P'_{C',s}$	0.5158
$P_{d,C}$	0.2911	$P'_{d,C'}$	0.2420
$P_{e,d}$	0.2364	$P'_{e,d}$	0.2329
$P_{g,F}$	0.5953	$P'_{g,F'}$	0.5267
$P_{i,h}$	0.9753	$P'_{i,h}$	0.9608

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0061	$\Delta P_{C,s}$	0.0024
$\Delta P_{F,e}$	0.0000	$\Delta P_{g,F}$	0.0029

着色度 Color Code	
λ_{80}/λ_5	
λ_{70}/λ_5	405/360

热性质 Thermal Properties	
T_g (℃)	671
T_s (℃)	702
$T_{10^{14.5}}$ (℃)	622
$T_{10^{13}}$ (℃)	654
$T_{10^{7.6}}$(℃)	753
$\alpha_{-30/70℃}$(10^{-7}/K)	73
$\alpha_{100/300℃}$(10^{-7}/K)	88
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	2
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.906	0.821
2200	0.973	0.946
2000	0.989	0.978
1800	0.997	0.994
1600	0.999	0.998
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.997	0.995
700	0.996	0.993
650	0.996	0.993
600	0.996	0.993
550	0.995	0.991
500	0.988	0.977
480	0.984	0.969
460	0.977	0.955
440	0.966	0.934
420	0.949	0.901
400	0.909	0.827
390	0.868	0.753
380	0.791	0.625
370	0.625	0.390
360	0.302	0.091
350		
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	685
F_A	124
E (10^7Pa)	11734
G (10^7Pa)	4523
μ	0.297
B (10^{-12}/Pa)	

其他性质 Other Properties	
ρ (g/cm^3)	4.56

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	0.0	1.4	1.5	2.1	3.1	4.3
-20～0	0.8	1.8	2.3	2.7	3.8	5.2
0～20	1.0	1.9	2.5	3.0	4.1	5.7
20～40	1.1	1.9	2.6	3.0	4.2	5.7
40～60	1.0	2.2	2.6	3.2	4.5	6.0
60～80	1.1	2.6	3.0	3.4	5.1	6.4
80～100						
100～120						
120～140						

H-ZLaF75B	904314	n_d = 1.903660	υ_d = 31.42	$n_F - n_C$ = 0.028762
		n_e = 1.910461	υ_e = 31.19	$n_{F'} - n_{C'}$ = 0.029193

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	1.846830
$n_{1970.09}$	1970.09	1.854371
$n_{1529.58}$	1529.58	1.862952
$n_{1060.0}$	1060.0	1.873687
n_t	1013.98	1.875116
n_s	852.11	1.881511
n_r	706.52	1.890681
n_C	656.27	1.895282
$n_{C'}$	643.85	1.896592
n_{He-Ne}	632.8	1.897824
n_D	589.29	1.903410
n_d	587.56	1.903660
n_e	546.07	1.910461
n_F	486.13	1.924044
$n_{F'}$	479.99	1.925785
n_g	435.83	1.941137
n_h	404.66	1.956195
n_i	365.01	1.984062
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
K_1	3.22804345E-01
L_1	5.52627060E-02
K_2	2.16371144E+00
L_2	1.24574436E-02
K_3	1.59867722E+00
L_3	1.08245897E+02

折射率温度系数常数 Constants of dn/dt	
D_0	-2.36E-06
D_1	1.27E-08
D_2	-2.37E-11
E_0	9.10E-07
E_1	1.21E-09
λ_{TK}(μm)	0.262

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2223	$P'_{s,t}$	0.2191
$P_{C,s}$	0.4788	$P'_{C',s}$	0.5166
$P_{d,C}$	0.2913	$P'_{d,C'}$	0.2421
$P_{e,d}$	0.2365	$P'_{e,d}$	0.2330
$P_{g,F}$	0.5943	$P'_{g,F'}$	0.5259
$P_{i,h}$	0.9689	$P'_{i,h}$	0.9546

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0069	$\Delta P_{C,s}$	0.0028
$\Delta P_{F,e}$	-0.0001	$\Delta P_{g,F}$	0.0021

着色度 Color Code	
λ_{80}/λ_5	
λ_{70}/λ_5	400/360

热性质 Thermal Properties	
T_g (℃)	668
T_s (℃)	696
$T_{10^{14.5}}$ (℃)	625
$T_{10^{13}}$ (℃)	655
$T_{10^{7.6}}$(℃)	748
$\alpha_{-30/70℃}$(10^{-7}/K)	70
$\alpha_{100/300℃}$(10^{-7}/K)	88
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	1
CR	
RC(S)	1
RA(S)	1

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.889	0.790
2200	0.964	0.930
2000	0.986	0.973
1800	0.995	0.990
1600	0.998	0.996
1400	0.998	0.997
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.998	0.997
800	0.998	0.996
700	0.997	0.994
650	0.997	0.994
600	0.996	0.993
550	0.996	0.993
500	0.991	0.983
480	0.988	0.977
460	0.983	0.967
440	0.976	0.952
420	0.962	0.926
400	0.930	0.864
390	0.891	0.793
380	0.814	0.663
370	0.647	0.418
360	0.321	0.103
350		
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	587
F_A	122
E (10^7Pa)	11641
G (10^7Pa)	4495
μ	0.295
B (10^{-12}/Pa)	1.47

其他性质 Other Properties	
ρ (g/cm^3)	4.56

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	-0.3	1.3	1.9	2.2	3.3	4.1
-40～-20	0.6	1.4	2.0	2.4	3.4	4.3
-20～0	0.8	1.8	2.1	2.6	3.6	5.3
0～20	0.9	1.9	2.2	2.8	4.0	5.4
20～40	1.0	2.0	2.4	2.8	4.2	5.5
40～60	1.0	2.2	2.8	3.5	4.5	6.1
60～80	1.1	2.5	3.0	3.6	5.1	6.5
80～100	1.1	2.6	3.3	3.7	5.3	7.1
100～120	1.2	2.9	3.4	3.9	5.5	7.3
120～140	1.5	3.0	3.7	4.2	5.7	7.5

CDGM

H-ZLaF76A	850300	n_d = 1.850130	υ_d = 30.01	$n_F - n_C$ = 0.028326
		n_e = 1.856823	υ_e = 29.78	$n_{F'} - n_{C'}$ = 0.028771

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	1.798014
$n_{1970.09}$	1970.09	1.804203
$n_{1529.58}$	1529.58	1.811471
$n_{1060.0}$	1060.0	1.821147
n_t	1013.98	1.822484
n_s	852.11	1.828561
n_r	706.52	1.837432
n_C	656.27	1.841919
$n_{C'}$	643.85	1.843200
n_{He-Ne}	632.8	1.844406
n_D	589.29	1.849884
n_d	587.56	1.850130
n_e	546.07	1.856823
n_F	486.13	1.870245
$n_{F'}$	479.99	1.871971
n_g	435.83	1.887236
n_h	404.66	1.902295
n_i	365.01	1.930422
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
K_1	2.00079286E+00
L_1	1.29599870E-02
K_2	1.53020671E+00
L_2	1.31107483E+02
K_3	2.89955307E-01
L_3	5.77379770E-02

折射率温度系数常数 Constants of dn/dt	
D_0	4.09E-06
D_1	1.67E-08
D_2	-4.15E-11
E_0	1.04E-06
E_1	1.10E-09
λ_{TK}(μm)	0.255

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2145	$P'_{s,t}$	0.2112
$P_{C,s}$	0.4716	$P'_{C',s}$	0.5088
$P_{d,C}$	0.2899	$P'_{d,C'}$	0.2409
$P_{e,d}$	0.2363	$P'_{e,d}$	0.2326
$P_{g,F}$	0.5998	$P'_{g,F'}$	0.5306
$P_{i,h}$	0.9930	$P'_{i,h}$	0.9776

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	-0.0015	$\Delta P_{C,s}$	-0.0011
$\Delta P_{F,e}$	0.0007	$\Delta P_{g,F}$	0.0052

着色度 Color Code	
λ_{80}/λ_5	
λ_{70}/λ_5	410/360

热性质 Thermal Properties	
T_g (℃)	685
T_s (℃)	733
$T_{10^{14.5}}$ (℃)	642
$T_{10^{13}}$ (℃)	677
$T_{10^{7.6}}$(℃)	804
$\alpha_{-30/70℃}$(10^{-7}/K)	64
$\alpha_{100/300℃}$(10^{-7}/K)	76
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	1
CR	1
RC(S)	1
RA(S)	2

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.960	0.921
2200	0.982	0.964
2000	0.991	0.983
1800	0.994	0.989
1600	0.997	0.995
1400	0.998	0.996
1200	0.998	0.996
1060	0.998	0.996
1000	0.998	0.995
950	0.998	0.996
900	0.998	0.996
850	0.998	0.996
800	0.997	0.994
700	0.996	0.993
650	0.995	0.991
600	0.992	0.985
550	0.988	0.976
500	0.976	0.953
480	0.970	0.940
460	0.961	0.924
440	0.949	0.901
420	0.930	0.864
400	0.883	0.780
390	0.831	0.690
380	0.724	0.524
370	0.503	0.253
360	0.167	0.028
350		
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	569
F_A	158
E (10^7Pa)	10356
G (10^7Pa)	4022
μ	0.287
B (10^{-12}/Pa)	2.45

其他性质 Other Properties	
ρ (g/cm^3)	4.31

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	4.5	5.5	5.8	6.6	7.6	8.9
-40～-20	4.5	5.5	6.0	6.6	7.6	9.2
-20～0	4.7	5.8	6.5	6.7	8.1	9.6
0～20	4.8	6.1	6.6	7.1	8.5	9.9
20～40	4.8	6.4	6.9	7.6	8.8	10.4
40～60	5.4	6.8	7.3	8.1	9.4	11.0
60～80	5.5	6.9	7.5	8.2	9.7	11.3
80～100	5.6	7.0	7.8	8.3	9.8	11.6
100～120	5.7	7.2	7.9	8.5	9.9	11.9
120～140	6.0	7.3	8.1	8.5	10.1	12.2

H-ZLaF76	850301	n_d = 1.850130	υ_d = 30.06	$n_F - n_C$ = 0.028285
		n_e = 1.856810	υ_e = 29.83	$n_{F'} - n_{C'}$ = 0.028724

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	1.792488
$n_{1970.09}$	1970.09	1.800593
$n_{1529.58}$	1529.58	1.809665
$n_{1060.0}$	1060.0	1.820629
n_t	1013.98	1.822056
n_s	852.11	1.828393
n_r	706.52	1.837404
n_C	656.27	1.841914
$n_{C'}$	643.85	1.843198
n_{He-Ne}	632.8	1.844406
n_D	589.29	1.849884
n_d	587.56	1.850130
n_e	546.07	1.856810
n_F	486.13	1.870199
$n_{F'}$	479.99	1.871922
n_g	435.83	1.887172
n_h	404.66	1.902267
n_i	365.01	1.930642
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
K_1	2.79518569E-01
L_1	5.93856526E-02
K_2	2.01429741E+00
L_2	1.26257440E-02
K_3	1.55073360E+00
L_3	1.00032291E+02

折射率温度系数常数 Constants of dn/dt	
D_0	-8.76E-07
D_1	1.45E-08
D_2	-5.38E-11
E_0	7.77E-07
E_1	8.10E-10
λ_{TK}(μm)	0.291

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2240	$P'_{s,t}$	0.2206
$P_{C,s}$	0.4780	$P'_{C',s}$	0.5154
$P_{d,C}$	0.2905	$P'_{d,C'}$	0.2413
$P_{e,d}$	0.2362	$P'_{e,d}$	0.2326
$P_{g,F}$	0.6001	$P'_{g,F'}$	0.5309
$P_{i,h}$	1.0032	$P'_{i,h}$	0.9878

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0142	$\Delta P_{C,s}$	0.0052
$\Delta P_{F,e}$	0.0002	$\Delta P_{g,F}$	0.0056

着色度 Color Code	
λ_{80}/λ_5	
λ_{70}/λ_5	415/360

热性质 Thermal Properties	
T_g (℃)	607
T_s (℃)	650
$T_{10^{14.5}}$ (℃)	570
$T_{10^{13}}$ (℃)	603
$T_{10^{7.6}}$(℃)	703
$\alpha_{-30/70℃}$(10^{-7}/K)	68
$\alpha_{100/300℃}$(10^{-7}/K)	83
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	3
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.860	0.740
2200	0.956	0.914
2000	0.985	0.971
1800	0.996	0.992
1600	0.999	0.998
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.997
700	0.998	0.996
650	0.997	0.994
600	0.996	0.992
550	0.993	0.986
500	0.985	0.971
480	0.980	0.960
460	0.973	0.946
440	0.961	0.923
420	0.938	0.880
400	0.890	0.790
390	0.840	0.700
380	0.730	0.530
370	0.490	0.240
360	0.140	0.020
350		
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	615
F_A	137
E (10^7Pa)	10535
G (10^7Pa)	4192
μ	0.257
B (10^{-12}/Pa)	2.16

其他性质 Other Properties	
ρ (g/cm^3)	3.98

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	1.0	2.2	2.4	3.3	3.7	5.3
-20～0	1.4	2.2	2.7	3.3	4.0	5.6
0～20	1.5	2.5	3.2	3.4	4.8	6.1
20～40	1.7	2.9	3.3	3.5	4.9	6.4
40～60	1.8	2.9	3.4	3.6	5.1	6.6
60～80	2.1	3.1	3.7	3.9	5.2	7.2
80～100						
100～120						
120～140						

CDGM

H-ZLaF78B	901371	n_d = 1.900690	υ_d = 37.05	$n_F - n_C$ = 0.024310
		n_e = 1.906456	υ_e = 36.80	$n_{F'} - n_{C'}$ = 0.024631

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	1.850411
$n_{1970.09}$	1970.09	1.857300
$n_{1529.58}$	1529.58	1.865103
$n_{1060.0}$	1060.0	1.874715
n_t	1013.98	1.875979
n_s	852.11	1.881596
n_r	706.52	1.889563
n_C	656.27	1.893526
$n_{C'}$	643.85	1.894650
n_{He-Ne}	632.8	1.895707
n_D	589.29	1.900477
n_d	587.56	1.900690
n_e	546.07	1.906456
n_F	486.13	1.917836
$n_{F'}$	479.99	1.919281
n_g	435.83	1.931887
n_h	404.66	1.944002
n_i	365.01	1.965719
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

K_1	2.99636528E-01
L_1	4.70546260E-02
K_2	2.19452718E+00
L_2	1.15403970E-02
K_3	1.53572385E+00
L_3	1.12608928E+02

折射率温度系数常数 Constants of dn/dt

D_0	-4.39E-07
D_1	1.46E-08
D_2	-2.76E-11
E_0	8.87E-07
E_1	7.53E-10
λ_{TK}(μm)	0.220

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2311	$P'_{s,t}$	0.2280
$P_{C,s}$	0.4907	$P'_{C',s}$	0.5300
$P_{d,C}$	0.2947	$P'_{d,C'}$	0.2452
$P_{e,d}$	0.2372	$P'_{e,d}$	0.2341
$P_{g,F}$	0.5780	$P'_{g,F'}$	0.5118
$P_{i,h}$	0.8933	$P'_{i,h}$	0.8817

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	0.0010	$\Delta P_{C,s}$	0.0014
$\Delta P_{F,e}$	-0.0012	$\Delta P_{g,F}$	-0.0046

着色度 Color Code

λ_{80}/λ_5	
λ_{70}/λ_5	395/350

热性质 Thermal Properties

T_g (℃)	725
T_s (℃)	762
$T_{10^{14.5}}$ (℃)	679
$T_{10^{13}}$ (℃)	710
$T_{10^{7.6}}$(℃)	769
$\alpha_{-30/70℃}$(10^{-7}/K)	68
$\alpha_{100/300℃}$(10^{-7}/K)	86
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	1
CR	1
RC(S)	1
RA(S)	1

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.915	0.837
2200	0.975	0.951
2000	0.990	0.980
1800	0.997	0.994
1600	0.999	0.998
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.998	0.996
650	0.998	0.996
600	0.997	0.994
550	0.997	0.994
500	0.992	0.984
480	0.987	0.975
460	0.981	0.962
440	0.972	0.945
420	0.958	0.918
400	0.928	0.862
390	0.898	0.806
380	0.849	0.721
370	0.764	0.583
360	0.605	0.366
350	0.327	0.107
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties

H_K (10^7Pa)	716
F_A	101
E (10^7Pa)	12650
G (10^7Pa)	4853
μ	0.303
B (10^{-12}/Pa)	0.95

其他性质 Other Properties

ρ (g/cm^3)	4.95

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	1.7	2.4	2.7	3.0	4.1	4.9
-40～-20	1.7	2.7	3.1	3.5	4.3	5.3
-20～0	1.8	2.8	3.2	3.7	4.6	5.5
0～20	1.9	2.9	3.5	3.9	4.9	5.7
20～40	2.0	3.3	3.7	4.1	4.9	6.0
40～60	2.4	3.4	3.9	4.3	5.2	6.4
60～80	2.5	3.6	4.2	4.5	5.6	6.9
80～100	2.6	3.8	4.3	4.6	5.8	7.1
100～120	2.7	4.0	4.4	4.8	6.1	7.3
120～140	2.9	4.2	4.6	5.0	6.2	7.5

CDGM

H-ZLaF89L	954323	n_d = 1.95375	υ_d = 32.31	$n_F - n_C$ = 0.029520
		n_e = 1.96073	υ_e = 32.09	$n_{F'} - n_{C'}$ = 0.029940

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.92448
n_s	852.11	1.93098
n_r	706.52	1.94040
n_C	656.27	1.94513
$n_{C'}$	643.85	1.94648
n_{He-Ne}	632.8	1.94774
n_D	589.29	1.95349
n_d	587.56	1.95375
n_e	546.07	1.96073
n_F	486.13	1.97465
$n_{F'}$	479.99	1.97642
n_g	435.83	1.99208
n_h	404.66	2.00732
n_i	365.01	2.03535
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
A_0	3.6693281E+00
A_1	-1.3691999E-02
A_2	4.8421636E-02
A_3	1.3216048E-03
A_4	2.4217258E-05
A_5	8.5012435E-06

折射率温度系数常数 Constants of dn/dt	
D_0	-4.45E-07
D_1	1.40E-08
D_2	-3.45E-11
E_0	9.44E-07
E_1	1.04E-09
λ_{TK}(μm)	0.253

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2202	$P'_{s,t}$	0.2171
$P_{C,s}$	0.4793	$P'_{C',s}$	0.5177
$P_{d,C}$	0.2920	$P'_{d,C'}$	0.2428
$P_{e,d}$	0.2364	$P'_{e,d}$	0.2331
$P_{g,F}$	0.5904	$P'_{g,F'}$	0.5230
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0011	$\Delta P_{C,s}$	0.0012
$\Delta P_{F,e}$	-0.0004	$\Delta P_{g,F}$	-0.0002

着色度 Color Code	
λ_{80}/λ_5	
λ_{70}/λ_5	420/360

热性质 Thermal Properties	
T_g (℃)	708
T_s (℃)	745
$T_{10}^{14.5}$ (℃)	649
T_{10}^{13} (℃)	685
$T_{10}^{7.6}$(℃)	800
$\alpha_{-30/70℃}$(10^{-7}/K)	72
$\alpha_{100/300℃}$(10^{-7}/K)	88
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	1
CR	1
RC(S)	1
RA(S)	1

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.931	0.866
2200	0.980	0.960
2000	0.991	0.983
1800	0.998	0.996
1600	0.999	0.998
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.996
700	0.998	0.996
650	0.998	0.996
600	0.998	0.996
550	0.996	0.993
500	0.988	0.977
480	0.981	0.963
460	0.972	0.944
440	0.956	0.914
420	0.927	0.860
400	0.868	0.754
390	0.813	0.661
380	0.725	0.526
370	0.574	0.330
360	0.318	0.101
350		
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	698
F_A	107
E (10^7Pa)	13043
G (10^7Pa)	4998
μ	0.305
B (10^{-12}/Pa)	0.93

其他性质 Other Properties	
ρ (g/cm^3)	5.10

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	1.9	2.8	3.3	3.8	4.6	6.3
-20～0	1.9	3.0	3.6	4.0	5.2	6.6
0～20	1.9	3.5	3.9	4.3	5.6	6.8
20～40	2.2	3.6	4.0	4.6	5.9	7.3
40～60	2.6	3.8	4.3	4.7	6.3	7.8
60～80	2.8	3.9	4.4	5.1	6.4	8.1
80～100						
100～120						
120～140						

CDGM

H-ZLaF90	001254	n_d = 2.000690	υ_d = 25.43	$n_F - n_C$ = 0.039357
		n_e = 2.009964	υ_e = 25.22	$n_{F'} - n_{C'}$ = 0.040040

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	1.932093
$n_{1970.09}$	1970.09	1.939734
$n_{1529.58}$	1529.58	1.948854
$n_{1060.0}$	1060.0	1.961397
n_t	1013.98	1.963165
n_s	852.11	1.971278
n_r	706.52	1.983278
n_C	656.27	1.989403
$n_{C'}$	643.85	1.991156
n_{He-Ne}	632.8	1.992810
n_D	589.29	2.000350
n_d	587.56	2.000690
n_e	546.07	2.009964
n_F	486.13	2.028760
$n_{F'}$	479.99	2.031196
n_g	435.83	2.052931
n_h	404.66	2.074723
n_i	365.01	
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
K_1	4.94167183E-01
L_1	6.02358038E-02
K_2	2.31375143E+00
L_2	1.37149187E-02
K_3	2.27929870E+00
L_3	1.48088436E+02

折射率温度系数常数 Constants of dn/dt	
D_0	-2.20E-06
D_1	1.40E-08
D_2	-1.91E-11
E_0	1.04E-06
E_1	1.38E-09
λ_{TK}(μm)	0.290

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2061	$P'_{s,t}$	0.2026
$P_{C,s}$	0.4605	$P'_{C',s}$	0.4965
$P_{d,C}$	0.2868	$P'_{d,C'}$	0.2381
$P_{e,d}$	0.2356	$P'_{e,d}$	0.2316
$P_{g,F}$	0.6141	$P'_{g,F'}$	0.5428
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0006	$\Delta P_{C,s}$	-0.0013
$\Delta P_{F,e}$	0.0019	$\Delta P_{g,F}$	0.0117

着色度 Color Code	
λ_{80}/λ_5	
λ_{70}/λ_5	455/375

热性质 Thermal Properties	
T_g (℃)	683
T_s (℃)	724
$T_{10^{14.5}}$ (℃)	634
$T_{10^{13}}$ (℃)	668
$T_{10^{7.6}}$(℃)	785
$\alpha_{-30/70℃}$(10^{-7}/K)	70
$\alpha_{100/300℃}$(10^{-7}/K)	87
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	1
CR	
RC(S)	1
RA(S)	1

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.941	0.886
2200	0.981	0.962
2000	0.992	0.983
1800	0.997	0.993
1600	0.998	0.997
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.998	0.997
950	0.998	0.997
900	0.998	0.997
850	0.998	0.997
800	0.997	0.995
700	0.995	0.990
650	0.994	0.988
600	0.992	0.985
550	0.987	0.975
500	0.970	0.940
480	0.957	0.915
460	0.939	0.882
440	0.908	0.825
420	0.849	0.720
400	0.721	0.520
390	0.602	0.363
380	0.409	0.167
370	0.148	0.022
360		
350		
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	625
F_A	124
E (10^7Pa)	12348
G (10^7Pa)	4756
μ	0.298
B (10^{-12}/Pa)	

其他性质 Other Properties	
ρ (g/cm^3)	4.74

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	0.5	1.7	1.9	2.8	4.4	6.0
-40～-20	0.7	2.1	2.3	2.9	4.8	6.4
-20～0	0.8	2.2	2.9	3.3	5.3	7.2
0～20	1.0	2.3	3.2	3.8	5.5	7.8
20～40	1.2	2.7	3.5	4.3	6.0	8.4
40～60	1.3	3.0	3.7	4.6	6.6	9.0
60～80	1.4	3.2	3.9	4.7	6.8	9.4
80～100	1.6	3.5	4.1	5.1	7.1	9.8
100～120	2.1	4.0	4.7	5.6	7.7	10.5
120～140	2.5	4.5	5.4	6.5	8.5	11.4

H-ZLaF92	003283	n_d = 2.003300	υ_d = 28.32	$n_F - n_C$ = 0.035432
		n_e = 2.011667	υ_e = 28.10	$n_{F'} - n_{C'}$ = 0.036002

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	1.938998
$n_{1970.09}$	1970.09	1.946522
$n_{1529.58}$	1529.58	1.955378
$n_{1060.0}$	1060.0	1.967261
n_t	1013.98	1.968913
n_s	852.11	1.976440
n_r	706.52	1.987465
n_C	656.27	1.993055
$n_{C'}$	643.85	1.994652
n_{He-Ne}	632.8	1.996155
n_D	589.29	2.002993
n_d	587.56	2.003300
n_e	546.07	2.011667
n_F	486.13	2.028487
$n_{F'}$	479.99	2.030654
n_g	435.83	2.049860
n_h	404.66	2.068887
n_i	365.01	2.104669
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

K_1	1.86762237E+00
L_1	1.23078620E+02
K_2	3.75569196E-01
L_2	5.96643730E-02
K_3	2.45933103E+00
L_3	1.41481580E-02

折射率温度系数常数 Constants of dn/dt

D_0	-5.53E-07
D_1	1.56E-08
D_2	-5.25E-11
E_0	1.00E-06
E_1	1.17E-09
λ_{TK}(μm)	0.275

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2124	$P'_{s,t}$	0.2091
$P_{C,s}$	0.4689	$P'_{C',s}$	0.5059
$P_{d,C}$	0.2891	$P'_{d,C'}$	0.2402
$P_{e,d}$	0.2361	$P'_{e,d}$	0.2324
$P_{g,F}$	0.6032	$P'_{g,F'}$	0.5335
$P_{i,h}$	1.0099	$P'_{i,h}$	0.9939

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	0.0017	$\Delta P_{C,s}$	0.0003
$\Delta P_{F,e}$	0.0006	$\Delta P_{g,F}$	0.0057

着色度 Color Code

λ_{80}/λ_5	
λ_{70}/λ_5	445/370

热性质 Thermal Properties

T_g (℃)	703
T_s (℃)	747
$T_{10}^{14.5}$ (℃)	658
T_{10}^{13} (℃)	693
$T_{10}^{7.6}$(℃)	800
$\alpha_{-30/70℃}$(10^{-7}/K)	69
$\alpha_{100/300℃}$(10^{-7}/K)	87
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	1
CR	1
RC(S)	1
RA(S)	1

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.939	0.882
2200	0.981	0.963
2000	0.991	0.983
1800	0.997	0.993
1600	0.998	0.996
1400	0.998	0.997
1200	0.998	0.997
1060	0.998	0.996
1000	0.998	0.996
950	0.998	0.995
900	0.997	0.995
850	0.997	0.995
800	0.993	0.987
700	0.992	0.984
650	0.990	0.980
600	0.988	0.976
550	0.979	0.959
500	0.956	0.913
480	0.939	0.882
460	0.918	0.843
440	0.885	0.784
420	0.830	0.689
400	0.722	0.521
390	0.629	0.396
380	0.482	0.232
370	0.257	0.066
360	0.095	0.009
350		
340		
330		
320		
310		
300		
290		
280		

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	1.4	2.6	3.2	3.7	5.0	6.6
-40～-20	1.4	2.7	3.4	3.9	5.2	7.0
-20～0	1.8	3.2	3.7	4.1	5.6	7.2
0～20	2.0	3.5	4.0	4.6	6.1	8.0
20～40	2.0	3.9	4.4	5.1	7.1	9.0
40～60	2.5	4.1	4.8	5.4	7.2	9.1
60～80	2.7	4.2	4.9	5.5	7.3	9.3
80～100	2.9	4.2	5.0	5.6	7.5	9.6
100～120	3.0	4.5	5.3	6.0	7.9	10.0
120～140	2.8	4.5	5.3	6.1	8.1	10.3

机械性质 Mechanical Properties

H_K (10^7Pa)	697
F_A	96
E (10^7Pa)	13318
G (10^7Pa)	5106
μ	0.304
B (10^{-12}/Pa)	0.96

其他性质 Other Properties

ρ (g/cm^3)	5.02

备注 Remarks

CDGM

H-TF3L	613441	n_d = 1.613400	υ_d = 44.11	$n_F - n_C$ = 0.013907
		n_e = 1.616703	υ_e = 43.86	$n_{F'} - n_{C'}$ = 0.014062

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	1.576164
$n_{1970.09}$	1970.09	1.582844
$n_{1529.58}$	1529.58	1.589976
$n_{1060.0}$	1060.0	1.597489
n_t	1013.98	1.598363
n_s	852.11	1.602039
n_r	706.52	1.606902
n_C	656.27	1.609242
$n_{C'}$	643.85	1.609900
n_{He-Ne}	632.8	1.610516
n_D	589.29	1.613277
n_d	587.56	1.613400
n_e	546.07	1.616703
n_F	486.13	1.623149
$n_{F'}$	479.99	1.623962
n_g	435.83	1.631015
n_h	404.66	1.637732
n_i	365.01	1.649630
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

K_1	1.35609817E+00
L_1	8.23370212E-03
K_2	1.92047799E-01
L_2	4.10079104E-02
K_3	1.32583600E+00
L_3	1.11798686E+02

折射率温度系数常数 Constants of dn/dt

D_0	4.34E-06
D_1	1.58E-08
D_2	-2.17E-11
E_0	6.07E-07
E_1	6.66E-10
λ_{TK}(μm)	0.227

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2643	$P'_{s,t}$	0.2614
$P_{C,s}$	0.5179	$P'_{C',s}$	0.5590
$P_{d,C}$	0.2990	$P'_{d,C'}$	0.2489
$P_{e,d}$	0.2375	$P'_{e,d}$	0.2349
$P_{g,F}$	0.5656	$P'_{g,F'}$	0.5016
$P_{i,h}$	0.8555	$P'_{i,h}$	0.8461

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	0.0282	$\Delta P_{C,s}$	0.0119
$\Delta P_{F,e}$	-0.0020	$\Delta P_{g,F}$	-0.0050

着色度 Color Code

λ_{80}/λ_5	360/330
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	525
T_s (℃)	574
$T_{10^{14.5}}$ (℃)	477
$T_{10^{13}}$ (℃)	514
$T_{10^{7.6}}$(℃)	663
$\alpha_{-30/70℃}$(10^{-7}/K)	63
$\alpha_{100/300℃}$(10^{-7}/K)	77
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	1
CR	1
RC(S)	1
RA(S)	1

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.890	0.790
2200	0.938	0.880
2000	0.986	0.973
1800	0.993	0.987
1600	0.997	0.993
1400	0.990	0.980
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.998	0.997
850	0.998	0.996
800	0.998	0.996
700	0.997	0.994
650	0.996	0.992
600	0.996	0.992
550	0.996	0.992
500	0.995	0.989
480	0.994	0.988
460	0.993	0.986
440	0.992	0.984
420	0.991	0.982
400	0.988	0.977
390	0.985	0.970
380	0.980	0.960
370	0.970	0.941
360	0.947	0.900
350	0.890	0.790
340	0.720	0.510
330	0.330	0.110
320		
310		
300		
290		
280		

机械性质 Mechanical Properties

H_K (10^7Pa)	625
F_A	90
E (10^7Pa)	9070
G (10^7Pa)	3690
μ	0.229
B (10^{-12}/Pa)	

其他性质 Other Properties

ρ (g/cm^3)	2.80

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	3.7	4.1	4.4	4.6	5.1	5.6
-40～-20	3.6	4.0	4.3	4.5	5.0	5.5
-20～0	3.8	4.1	4.5	4.8	5.1	5.7
0～20	3.9	4.4	4.7	4.9	5.4	5.9
20～40	3.9	4.6	4.8	4.9	5.5	6.2
40～60	4.1	4.8	5.0	5.0	5.7	6.2
60～80	4.1	4.9	5.0	5.4	5.9	6.5
80～100	4.4	5.1	5.3	5.6	6.2	6.8
100～120	4.6	5.2	5.4	5.7	6.3	7.1
120～140	4.6	5.2	5.4	5.7	6.4	7.2

TF3	612441	n_d = 1.61242	υ_d = 44.09	$n_F - n_C$ = 0.013890
		n_e = 1.61573	υ_e = 43.85	$n_{F'} - n_{C'}$ = 0.014041

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	
$n_{1970.09}$	1970.09	
$n_{1529.58}$	1529.58	
$n_{1060.0}$	1060.0	
n_t	1013.98	1.59728
n_s	852.11	1.60098
n_r	706.52	1.60590
n_C	656.27	1.60825
$n_{C'}$	643.85	1.60891
n_{He-Ne}	632.8	1.60953
n_D	589.29	1.61230
n_d	587.56	1.61242
n_e	546.07	1.61573
n_F	486.13	1.62214
$n_{F'}$	479.99	1.62295
n_g	435.83	1.62997
n_h	404.66	1.63662
n_i	365.01	1.64833
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

A_0	2.5414159E+00
A_1	-1.0660779E-02
A_2	2.1716721E-02
A_3	-4.0184848E-04
A_4	1.2247573E-04
A_5	-4.7776413E-06

折射率温度系数常数 Constants of dn/dt

D_0	5.03E-06
D_1	2.69E-08
D_2	-1.67E-10
E_0	5.52E-07
E_1	-6.81E-10
λ_{TK}(μm)	0.246

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2664	$P'_{s,t}$	0.2635
$P_{C,s}$	0.5234	$P'_{C',s}$	0.5648
$P_{d,C}$	0.3002	$P'_{d,C'}$	0.2500
$P_{e,d}$	0.2383	$P'_{e,d}$	0.2357
$P_{g,F}$	0.5634	$P'_{g,F'}$	0.4996
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	0.0358	$\Delta P_{C,s}$	0.0174
$\Delta P_{F,e}$	-0.0041	$\Delta P_{g,F}$	-0.0073

着色度 Color Code

λ_{80}/λ_5	380/320
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	486
T_s (℃)	522
$T_{10}^{14.5}$ (℃)	446
T_{10}^{13} (℃)	475
$T_{10}^{7.6}$(℃)	580
$\alpha_{-30/70℃}$(10^{-7}/K)	55
$\alpha_{100/300℃}$(10^{-7}/K)	64
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	2
D_A	6
CR	4a
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.610	0.380
2200	0.770	0.600
2000	0.937	0.878
1800	0.975	0.951
1600	0.986	0.973
1400	0.976	0.952
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.999	0.998
650	0.998	0.997
600	0.998	0.997
550	0.998	0.997
500	0.998	0.996
480	0.997	0.995
460	0.996	0.993
440	0.994	0.989
420	0.990	0.980
400	0.975	0.951
390	0.958	0.918
380	0.929	0.863
370	0.880	0.770
360	0.790	0.630
350	0.670	0.450
340	0.510	0.260
330	0.320	0.100
320	0.140	0.020
310		
300		
290		
280		

机械性质 Mechanical Properties

H_K (10^7Pa)	440
F_A	99
E (10^7Pa)	5780
G (10^7Pa)	2262
μ	0.278
B (10^{-12}/Pa)	3.09

其他性质 Other Properties

ρ (g/cm^3)	3.25

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	2.7	3.4	3.7	3.8	4.1	4.9
-20～0	3.7	4.2	4.6	4.9	5.3	6.0
0～20	4.0	4.4	4.9	5.1	5.5	6.0
20～40	4.4	4.8	5.0	5.2	5.7	6.2
40～60	4.5	5.0	5.1	5.2	5.8	6.5
60～80	4.5	5.1	5.2	5.4	6.1	6.5
80～100						
100～120						
120～140						

CDGM

H-TF5	654395	n_d = 1.654100	υ_d = 39.54	$n_F - n_C$ = 0.016543
		n_e = 1.658025	υ_e = 39.30	$n_{F'} - n_{C'}$ = 0.016742

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	1.612564
$n_{1970.09}$	1970.09	1.619690
$n_{1529.58}$	1529.58	1.627320
$n_{1060.0}$	1060.0	1.635573
n_t	1013.98	1.636559
n_s	852.11	1.640764
n_r	706.52	1.646429
n_C	656.27	1.649182
$n_{C'}$	643.85	1.649958
n_{He-Ne}	632.8	1.650685
n_D	589.29	1.653955
n_d	587.56	1.654100
n_e	546.07	1.658025
n_F	486.13	1.665725
$n_{F'}$	479.99	1.666700
n_g	435.83	1.675196
n_h	404.66	1.683359
n_i	365.01	1.698056
$n_{313.18}$	313.18	1.732560
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula

K_1	1.55856807E+00
L_1	1.10562787E-02
K_2	1.09731968E-01
L_2	5.44047450E-02
K_3	1.10774896E+00
L_3	8.83222356E+01

折射率温度系数常数 Constants of dn/dt

D_0	1.61E-06
D_1	1.46E-08
D_2	-3.13E-11
E_0	6.67E-07
E_1	7.58E-10
λ_{TK}(μm)	0.241

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2542	$P'_{s,t}$	0.2512
$P_{C,s}$	0.5089	$P'_{C',s}$	0.5492
$P_{d,C}$	0.2973	$P'_{d,C'}$	0.2474
$P_{e,d}$	0.2373	$P'_{e,d}$	0.2344
$P_{g,F}$	0.5725	$P'_{g,F'}$	0.5075
$P_{i,h}$	0.8884	$P'_{i,h}$	0.8779

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	0.0305	$\Delta P_{C,s}$	0.0136
$\Delta P_{F,e}$	-0.0026	$\Delta P_{g,F}$	-0.0059

着色度 Color Code

λ_{80}/λ_5	380/330
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	539
T_s (℃)	590
$T_{10^{14.5}}$ (℃)	499
$T_{10^{13}}$ (℃)	532
$T_{10^{7.6}}$(℃)	667
$\alpha_{-30/70℃}$(10^{-7}/K)	65
$\alpha_{100/300℃}$(10^{-7}/K)	84
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	2
D_A	1
CR	1
RC(S)	3
RA(S)	1

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.816	0.666
2200	0.911	0.830
2000	0.976	0.952
1800	0.989	0.979
1600	0.994	0.988
1400	0.988	0.976
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.998	0.997
650	0.998	0.996
600	0.997	0.995
550	0.997	0.994
500	0.995	0.990
480	0.993	0.986
460	0.992	0.984
440	0.988	0.976
420	0.985	0.970
400	0.975	0.951
390	0.965	0.932
380	0.950	0.902
370	0.920	0.846
360	0.861	0.742
350	0.744	0.553
340	0.491	0.241
330	0.148	0.022
320		
310		
300		
290		
280		

机械性质 Mechanical Properties

H_K (10^7Pa)	548
F_A	113
E (10^7Pa)	8647
G (10^7Pa)	3462
μ	0.249
B (10^{-12}/Pa)	3.36

其他性质 Other Properties

ρ (g/cm^3)	3.01

备注 Remarks

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	2.4	2.9	3.2	3.4	4.1	4.6
-40～-20	2.3	2.8	3.1	3.3	4.0	4.5
-20～0	2.6	3.3	3.4	3.6	4.3	4.9
0～20	2.7	3.4	3.5	3.9	4.4	5.1
20～40	2.7	3.4	3.7	4.0	4.5	5.3
40～60	2.9	3.6	3.9	4.1	4.9	5.6
60～80	2.9	3.6	3.9	4.2	4.9	5.7
80～100	3.0	3.7	4.1	4.3	5.1	5.9
100～120	3.1	3.9	4.2	4.6	5.3	6.1
120～140	3.3	4.0	4.3	4.8	5.4	6.3

D-FK61	497815	n_d = 1.496530	υ_d = 81.53	$n_F - n_C$ = 0.006090
		n_e = 1.497984	υ_e = 81.10	$n_{F'} - n_{C'}$ = 0.006140

折射率 Refractive Index**		
	λ（nm）	
$n_{2325.42}$	2325.42	1.479733
$n_{1970.09}$	1970.09	1.482685
$n_{1529.58}$	1529.58	1.485880
$n_{1060.0}$	1060.0	1.489305
n_t	1013.98	1.489707
n_s	852.11	1.491396
n_r	706.52	1.493615
n_C	656.27	1.494673
$n_{C'}$	643.85	1.494968
n_{He-Ne}	632.8	1.495245
n_D	589.29	1.496476
n_d	587.56	1.496530
n_e	546.07	1.497984
n_F	486.13	1.500763
$n_{F'}$	479.99	1.501108
n_g	435.83	1.504045
n_h	404.66	1.506749
n_i	365.01	1.511314
$n_{313.18}$	313.18	1.520422
$n_{302.15}$	302.15	1.523076

色散公式常数 Constants of Dispersion Formula	
K_1	8.94432499E-01
L_1	4.36678978E-03
K_2	3.21652123E-01
L_2	1.41909741E-02
K_3	7.48704285E-01
L_3	1.49771388E+02

折射率温度系数常数 Constants of dn/dt	
D_0	-2.54E-05
D_1	6.55E-09
D_2	-2.07E-11
E_0	4.52E-07
E_1	1.38E-09
λ_{TK}(μm)	0.100

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2773	$P'_{s,t}$	0.2751
$P_{C,s}$	0.5381	$P'_{C',s}$	0.5818
$P_{d,C}$	0.3049	$P'_{d,C'}$	0.2544
$P_{e,d}$	0.2388	$P'_{e,d}$	0.2368
$P_{g,F}$	0.5389	$P'_{g,F'}$	0.4783
$P_{i,h}$	0.7496	$P'_{i,h}$	0.7435

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	-0.1150	$\Delta P_{C,s}$	-0.0564
$\Delta P_{F,e}$	0.0110	$\Delta P_{g,F}$	0.0321

着色度 Color Code	
λ_{80}/λ_5	325/275
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	440
T_s (℃)	471
$T_{10}^{14.5}$ (℃)	404
T_{10}^{13} (℃)	432
$T_{10}^{7.6}$(℃)	517
$\alpha_{-30/70℃}$(10^{-7}/K)	145
$\alpha_{100/300℃}$(10^{-7}/K)	170
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	2
CR	1
RC(S)	1
RA(S)	1

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.998	0.996
2200	0.999	0.998
2000	0.999	0.998
1800	0.999	0.998
1600	0.999	0.998
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.999	0.998
650	0.999	0.998
600	0.999	0.998
550	0.999	0.998
500	0.999	0.998
480	0.999	0.998
460	0.999	0.998
440	0.998	0.997
420	0.998	0.996
400	0.998	0.997
390	0.997	0.995
380	0.997	0.994
370	0.996	0.992
360	0.991	0.983
350	0.984	0.968
340	0.965	0.931
330	0.929	0.863
320	0.853	0.728
310	0.674	0.454
300	0.558	0.311
290	0.374	0.140
280	0.219	0.048

机械性质 Mechanical Properties	
H_K (10^7Pa)	332
F_A	358
E (10^7Pa)	6890
G (10^7Pa)	2647
μ	0.301
B (10^{-12}/Pa)	0.53

其他性质 Other Properties	
ρ (g/cm^3)	3.90

备注 Remarks

**:退火速率 anneal rate 25℃/h

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	-9.1	-8.5	-8.5	-8.5	-8.4	-8.2
-20～0	-9.1	-8.5	-8.5	-8.5	-8.4	-8.2
0～20	-9.1	-8.5	-8.5	-8.5	-8.4	-8.2
20～40	-9.1	-8.5	-8.5	-8.5	-8.4	-8.2
40～60	-9.1	-8.5	-8.5	-8.5	-8.4	-8.0
60～80	-9.1	-8.5	-8.5	-8.4	-8.3	-8.0
80～100						
100～120						
120～140						

CDGM

D-FK61A	497816	n_d = 1.496650	υ_d = 81.55	$n_F - n_C$ = 0.006090
		n_e = 1.498104	υ_e = 81.15	$n_{F'} - n_{C'}$ = 0.006138

折射率 Refractive Index**		
	λ（nm）	
$n_{2325.42}$	2325.42	1.479108
$n_{1970.09}$	1970.09	1.482303
$n_{1529.58}$	1529.58	1.485737
$n_{1060.0}$	1060.0	1.489341
n_t	1013.98	1.489756
n_s	852.11	1.491484
n_r	706.52	1.493727
n_C	656.27	1.494789
$n_{C'}$	643.85	1.495086
n_{He-Ne}	632.8	1.495363
n_D	589.29	1.496596
n_d	587.56	1.496650
n_e	546.07	1.498104
n_F	486.13	1.500879
$n_{F'}$	479.99	1.501224
n_g	435.83	1.504154
n_h	404.66	1.506851
n_i	365.01	1.511403
$n_{313.18}$	313.18	1.520479
$n_{302.15}$	302.15	1.523122

色散公式常数 Constants of Dispersion Formula	
K_1	7.14581002E-01
L_1	1.08378966E-02
K_2	5.02174967E-01
L_2	1.32310137E-03
K_3	8.38296164E-01
L_3	1.53775939E+02

折射率温度系数常数 Constants of dn/dt	
D_0	-1.94E-05
D_1	2.54E-09
D_2	-2.83E-11
E_0	3.05E-07
E_1	-9.31E-11
λ_{TK}(μm)	0.242

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2837	$P'_{s,t}$	0.2815
$P_{C,s}$	0.5427	$P'_{C',s}$	0.5868
$P_{d,C}$	0.3056	$P'_{d,C'}$	0.2548
$P_{e,d}$	0.2388	$P'_{e,d}$	0.2369
$P_{g,F}$	0.5378	$P'_{g,F'}$	0.4774
$P_{i,h}$	0.7475	$P'_{i,h}$	0.7416

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	-0.1041	$\Delta P_{C,s}$	-0.0519
$\Delta P_{F,e}$	0.0104	$\Delta P_{g,F}$	0.0309

着色度 Color Code	
λ_{80}/λ_5	325/-
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	467
T_s (℃)	493
$T_{10}^{14.5}$ (℃)	430
T_{10}^{13} (℃)	459
$T_{10}^{7.6}$(℃)	538
$\alpha_{-30/70℃}$(10^{-7}/K)	126
$\alpha_{100/300℃}$(10^{-7}/K)	155
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	3
CR	1
RC(S)	1
RA(S)	2

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.998	0.997
2200	0.999	0.998
2000	0.999	0.999
1800	0.999	0.999
1600	0.999	0.999
1400	0.999	0.999
1200	0.999	0.999
1060	0.999	0.999
1000	0.999	0.999
950	0.999	0.999
900	0.999	0.999
850	0.999	0.999
800	0.999	0.998
700	0.999	0.998
650	0.999	0.998
600	0.999	0.998
550	0.999	0.998
500	0.999	0.998
480	0.999	0.998
460	0.999	0.998
440	0.998	0.996
420	0.998	0.997
400	0.998	0.996
390	0.997	0.996
380	0.997	0.996
370	0.994	0.989
360	0.988	0.977
350	0.976	0.953
340	0.948	0.899
330	0.897	0.804
320	0.800	0.640
310	0.657	0.431
300	0.483	0.233
290	0.315	0.099
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	360
F_A	308
E (10^7Pa)	7367
G (10^7Pa)	2840
μ	0.297
B (10^{-12}/Pa)	0.71

其他性质 Other Properties	
ρ (g/cm^3)	3.68

备注 Remarks

**:退火速率 anneal rate 25℃/h

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	-5.7	-5.6	-5.4	-5.2	-5.2	-5.0
-40～-20	-5.9	-5.7	-5.7	-5.6	-5.5	-5.2
-20～0	-6.2	-6.1	-6.1	-6.0	-5.7	-5.4
0～20	-6.5	-6.3	-6.1	-6.2	-5.9	-5.7
20～40	-6.6	-6.5	-6.2	-6.2	-6.1	-5.9
40～60	-6.6	-6.5	-6.3	-6.3	-6.2	-6.0
60～80	-6.7	-6.6	-6.6	-6.5	-6.3	-6.1
80～100	-6.9	-6.8	-6.8	-6.7	-6.5	-6.3
100～120	-7.2	-7.1	-7.1	-6.9	-6.6	-6.5
120～140	-7.4	-7.2	-7.2	-7.0	-6.8	-6.6

CDGM

D-FK95	437944	n_d = 1.437440	υ_d = 94.44	$n_F - n_C$ = 0.004632
		n_e = 1.438546	υ_e = 93.99	$n_{F'} - n_{C'}$ = 0.004666

折射率 Refractive Index**		
	λ（nm）	
$n_{2325.42}$	2325.42	1.423503
$n_{1970.09}$	1970.09	1.426112
$n_{1529.58}$	1529.58	1.428905
$n_{1060.0}$	1060.0	1.431792
n_t	1013.98	1.432119
n_s	852.11	1.433470
n_r	706.52	1.435203
n_C	656.27	1.436018
$n_{C'}$	643.85	1.436245
n_{He-Ne}	632.8	1.436457
n_D	589.29	1.437399
n_d	587.56	1.437440
n_e	546.07	1.438546
n_F	486.13	1.440650
$n_{F'}$	479.99	1.440911
n_g	435.83	1.443121
n_h	404.66	1.445149
n_i	365.01	1.448556
$n_{313.18}$	313.18	1.455310
$n_{302.15}$	302.15	1.457268

色散公式常数 Constants of Dispersion Formula	
K_1	9.89211963E-01
L_1	5.06590700E-03
K_2	6.01412620E-02
L_2	1.97053860E-02
K_3	6.85377886E-01
L_3	1.58935083E+02

折射率温度系数常数 Constants of dn/dt	
D_0	-2.24E-05
D_1	-5.60E-09
D_2	-9.96E-12
E_0	3.32E-07
E_1	4.01E-12
λ_{TK}(μm)	0.182

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2917	$P'_{s,t}$	0.2895
$P_{C,s}$	0.5501	$P'_{C',s}$	0.5947
$P_{d,C}$	0.3070	$P'_{d,C'}$	0.2561
$P_{e,d}$	0.2388	$P'_{e,d}$	0.2370
$P_{g,F}$	0.5335	$P'_{g,F'}$	0.4736
$P_{i,h}$	0.7355	$P'_{i,h}$	0.7302

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	-0.1495	$\Delta P_{C,s}$	-0.0750
$\Delta P_{F,e}$	0.0159	$\Delta P_{g,F}$	0.0486

着色度 Color Code	
λ_{80}/λ_5	310/-
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	409
T_s (℃)	446
$T_{10}^{14.5}$ (℃)	380
T_{10}^{13} (℃)	403
$T_{10}^{7.6}$(℃)	482
$\alpha_{-30/70℃}$(10^{-7}/K)	143
$\alpha_{100/300℃}$(10^{-7}/K)	169
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	2
CR	1
RC(S)	1
RA(S)	2

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.999	0.998
2200	0.999	0.999
2000	0.999	0.999
1800	0.999	0.999
1600	0.999	0.999
1400	0.999	0.999
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.999	0.998
650	0.999	0.998
600	0.999	0.998
550	0.999	0.998
500	0.999	0.998
480	0.998	0.997
460	0.998	0.997
440	0.998	0.996
420	0.998	0.996
400	0.998	0.996
390	0.998	0.996
380	0.997	0.995
370	0.997	0.994
360	0.994	0.988
350	0.991	0.983
340	0.980	0.961
330	0.962	0.926
320	0.925	0.856
310	0.855	0.731
300	0.752	0.566
290	0.620	0.384
280	0.488	0.238

机械性质 Mechanical Properties	
H_K (10^7Pa)	348
F_A	355
E (10^7Pa)	7195
G (10^7Pa)	2764
μ	0.302
B (10^{-12}/Pa)	

其他性质 Other Properties	
ρ (g/cm^3)	3.52

备注 Remarks

**:退火速率 anneal rate 25℃/h

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	-5.5	-5.4	-5.4	-5.4	-5.2	-5.1
-40～-20	-6.0	-5.8	-5.7	-5.7	-5.5	-5.4
-20～0	-6.4	-6.1	-6.1	-6.0	-6.0	-5.9
0～20	-6.8	-6.6	-6.5	-6.4	-6.3	-6.1
20～40	-6.9	-6.7	-6.7	-6.5	-6.5	-6.4
40～60	-7.1	-7.0	-7.0	-6.9	-6.8	-6.6
60～80	-7.2	-7.3	-7.2	-7.1	-6.8	-6.8
80～100	-7.6	-7.5	-7.4	-7.3	-7.3	-7.2
100～120	-7.9	-7.8	-7.6	-7.6	-7.4	-7.3
120～140	-8.0	-7.8	-7.8	-7.7	-7.5	-7.3

CDGM

D-QK3L	487704	n_d = 1.486870	υ_d = 70.42	$n_F - n_C$ = 0.006914
		n_e = 1.488521	υ_e = 70.24	$n_{F'} - n_{C'}$ = 0.006955

折射率 Refractive Index**		
	λ（nm）	
$n_{2325.42}$	2325.42	1.461174
$n_{1970.09}$	1970.09	1.466772
$n_{1529.58}$	1529.58	1.472519
$n_{1060.0}$	1060.0	1.477945
n_t	1013.98	1.478512
n_s	852.11	1.480760
n_r	706.52	1.483484
n_C	656.27	1.484729
$n_{C'}$	643.85	1.485073
n_{He-Ne}	632.8	1.485393
n_D	589.29	1.486808
n_d	587.56	1.486870
n_e	546.07	1.488521
n_F	486.13	1.491643
$n_{F'}$	479.99	1.492028
n_g	435.83	1.495301
n_h	404.66	1.498304
n_i	365.01	1.503369
$n_{313.18}$	313.18	1.513494
$n_{302.15}$	302.15	1.516456

色散公式常数 Constants of Dispersion Formula	
K_1	8.34888200E-01
L_1	9.01036067E+01
K_2	1.40256117E-01
L_2	1.99283160E-02
K_3	1.04638050E+00
L_3	6.08195700E-03

折射率温度系数常数 Constants of dn/dt	
D_0	-9.26E-06
D_1	1.71E-08
D_2	-1.54E-11
E_0	3.26E-07
E_1	5.95E-10
λ_{TK}(μm)	0.187

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.3251	$P'_{s,t}$	0.3232
$P_{C,s}$	0.5741	$P'_{C',s}$	0.6201
$P_{d,C}$	0.3097	$P'_{d,C'}$	0.2584
$P_{e,d}$	0.2388	$P'_{e,d}$	0.2374
$P_{g,F}$	0.5291	$P'_{g,F'}$	0.4706
$P_{i,h}$	0.7326	$P'_{i,h}$	0.7283

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0211	$\Delta P_{C,s}$	0.0058
$\Delta P_{F,e}$	0.0002	$\Delta P_{g,F}$	0.0033

着色度 Color Code	
λ_{80}/λ_5	305/270
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	473
T_s (℃)	567
$T_{10^{14.5}}$ (℃)	431
$T_{10^{13}}$ (℃)	463
$T_{10^{7.6}}$(℃)	673
$\alpha_{-30/70℃}$(10^{-7}/K)	91
$\alpha_{100/300℃}$(10^{-7}/K)	101
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	2
D_A	4
CR	2
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.918	0.844
2200	0.938	0.879
2000	0.989	0.977
1800	0.994	0.989
1600	0.996	0.992
1400	0.990	0.980
1200	0.999	0.998
1060	0.999	0.999
1000	0.999	0.999
950	0.999	0.999
900	0.999	0.999
850	0.999	0.999
800	0.999	0.998
700	0.999	0.998
650	0.999	0.998
600	0.998	0.997
550	0.998	0.996
500	0.998	0.996
480	0.998	0.996
460	0.998	0.996
440	0.997	0.995
420	0.997	0.995
400	0.998	0.996
390	0.997	0.995
380	0.997	0.994
370	0.996	0.993
360	0.996	0.993
350	0.994	0.989
340	0.990	0.980
330	0.987	0.974
320	0.974	0.948
310	0.945	0.893
300	0.868	0.753
290	0.688	0.474
280	0.385	0.148

机械性质 Mechanical Properties	
H_K (10^7Pa)	518
F_A	93
E (10^7Pa)	6228
G (10^7Pa)	2539
μ	0.227
B (10^{-12}/Pa)	2.80

其他性质 Other Properties	
ρ (g/cm^3)	2.43

备注 Remarks

**:退火速率 anneal rate 25℃/h

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	-2.6	-2.3	-2.2	-2.2	-2.0	-1.9
-40～-20	-2.5	-2.2	-2.1	-2.1	-2.0	-1.8
-20～0	-2.3	-2.1	-2.0	-2.0	-1.9	-1.7
0～20	-2.1	-2.0	-2.0	-1.9	-1.8	-1.6
20～40	-2.1	-1.9	-1.8	-1.8	-1.6	-1.5
40～60	-2.1	-1.9	-1.7	-1.7	-1.5	-1.4
60～80	-1.9	-1.9	-1.7	-1.6	-1.4	-1.1
80～100	-1.7	-1.6	-1.4	-1.3	-1.1	-0.8
100～120	-1.7	-1.3	-1.2	-1.2	-0.9	-0.7
120～140	-1.5	-1.1	-1.1	-1.1	-0.8	-0.6

CDGM

D-K9	516640	n_d = 1.515770	υ_d = 63.99	$n_F - n_C$ = 0.008060
		n_e = 1.517694	υ_e = 63.79	$n_{F'} - n_{C'}$ = 0.008115

折射率 Refractive Index**		
	λ（nm）	
$n_{2325.42}$	2325.42	1.487733
$n_{1970.09}$	1970.09	1.493607
$n_{1529.58}$	1529.58	1.499705
$n_{1060.0}$	1060.0	1.505595
n_t	1013.98	1.506224
n_s	852.11	1.508745
n_r	706.52	1.511853
n_C	656.27	1.513287
$n_{C'}$	643.85	1.513685
n_{He-Ne}	632.8	1.514056
n_D	589.29	1.515698
n_d	587.56	1.515770
n_e	546.07	1.517694
n_F	486.13	1.521347
$n_{F'}$	479.99	1.521800
n_g	435.83	1.525650
n_h	404.66	1.529196
n_i	365.01	1.535196
$n_{313.18}$	313.18	1.547251
$n_{302.15}$	302.15	1.550788

色散公式常数 Constants of Dispersion Formula	
K_1	1.08234297E+00
L_1	1.07907645E+02
K_2	5.48438846E-01
L_2	2.19092900E-03
K_3	7.19999855E-01
L_3	1.34070020E-02

折射率温度系数常数 Constants of dn/dt	
D_0	4.87E-06
D_1	1.55E-08
D_2	-1.35E-11
E_0	4.17E-07
E_1	5.20E-10
λ_{TK}(μm)	0.177

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.3128	$P'_{s,t}$	0.3107
$P_{C,s}$	0.5635	$P'_{C',s}$	0.6087
$P_{d,C}$	0.3081	$P'_{d,C'}$	0.2569
$P_{e,d}$	0.2387	$P'_{e,d}$	0.2371
$P_{g,F}$	0.5339	$P'_{g,F'}$	0.4744
$P_{i,h}$	0.7444	$P'_{i,h}$	0.7394

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0285	$\Delta P_{C,s}$	0.0105
$\Delta P_{F,e}$	-0.0016	$\Delta P_{g,F}$	-0.0029

着色度 Color Code	
λ_{80}/λ_5	315/280
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	496
T_s (℃)	558
$T_{10}^{14.5}$ (℃)	451
T_{10}^{13} (℃)	483
$T_{10}^{7.6}$(℃)	637
$\alpha_{-30/70℃}$(10^{-7}/K)	63
$\alpha_{100/300℃}$(10^{-7}/K)	78
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	2
CR	1
RC(S)	1
RA(S)	2

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.918	0.842
2200	0.952	0.906
2000	0.989	0.978
1800	0.995	0.990
1600	0.997	0.995
1400	0.991	0.982
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.999	0.998
650	0.999	0.998
600	0.999	0.997
550	0.998	0.996
500	0.998	0.996
480	0.998	0.996
460	0.998	0.996
440	0.998	0.996
420	0.998	0.996
400	0.998	0.996
390	0.997	0.994
380	0.996	0.992
370	0.994	0.989
360	0.990	0.981
350	0.980	0.960
340	0.968	0.937
330	0.927	0.860
320	0.851	0.725
310	0.710	0.504
300	0.498	0.248
290	0.257	0.066
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	492
F_A	72
E (10^7Pa)	8318
G (10^7Pa)	3430
μ	0.212
B (10^{-12}/Pa)	2.72

其他性质 Other Properties	
ρ (g/cm^3)	2.41

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	3.7	4.0	4.1	4.2	4.4	4.6
-40～-20	3.5	3.8	3.9	4.0	4.2	4.5
-20～0	3.6	3.8	3.9	4.0	4.2	4.6
0～20	3.6	3.9	4.0	4.1	4.3	4.7
20～40	3.7	4.0	4.1	4.3	4.5	4.8
40～60	3.8	4.1	4.2	4.5	4.6	4.9
60～80	3.8	4.2	4.3	4.5	4.8	5.0
80～100	3.9	4.4	4.5	4.7	5.0	5.3
100～120	4.1	4.5	4.6	4.7	5.1	5.5
120～140	4.3	4.7	4.8	4.9	5.3	5.6

备注 Remarks

**:退火速率 anneal rate 25℃/h

CDGM

D-K9GT	516640	n_d = 1.515770	υ_d = 63.99	$n_F - n_C$ = 0.008060
		n_e = 1.517694	υ_e = 63.79	$n_{F'} - n_{C'}$ = 0.008115

折射率 Refractive Index**		
	λ（nm）	
$n_{2325.42}$	2325.42	1.487733
$n_{1970.09}$	1970.09	1.493607
$n_{1529.58}$	1529.58	1.499705
$n_{1060.0}$	1060.0	1.505595
n_t	1013.98	1.506224
n_s	852.11	1.508745
n_r	706.52	1.511853
n_C	656.27	1.513287
$n_{C'}$	643.85	1.513685
n_{He-Ne}	632.8	1.514056
n_D	589.29	1.515698
n_d	587.56	1.515770
n_e	546.07	1.517694
n_F	486.13	1.521347
$n_{F'}$	479.99	1.521800
n_g	435.83	1.525650
n_h	404.66	1.529196
n_i	365.01	1.535196
$n_{313.18}$	313.18	1.547251
$n_{302.15}$	302.15	1.550788

色散公式常数 Constants of Dispersion Formula	
K_1	1.08234297E+00
L_1	1.07907645E+02
K_2	5.48438846E-01
L_2	2.19092900E-03
K_3	7.19999855E-01
L_3	1.34070020E-02

折射率温度系数常数 Constants of dn/dt	
D_0	4.87E-06
D_1	1.55E-08
D_2	-1.35E-11
E_0	4.17E-07
E_1	5.20E-10
λ_{TK}(μm)	0.177

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.3128	$P'_{s,t}$	0.3107
$P_{C,s}$	0.5635	$P'_{C',s}$	0.6087
$P_{d,C}$	0.3081	$P'_{d,C'}$	0.2569
$P_{e,d}$	0.2387	$P'_{e,d}$	0.2371
$P_{g,F}$	0.5339	$P'_{g,F'}$	0.4744
$P_{i,h}$	0.7444	$P'_{i,h}$	0.7394

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0285	$\Delta P_{C,s}$	0.0105
$\Delta P_{F,e}$	-0.0016	$\Delta P_{g,F}$	-0.0029

着色度 Color Code	
λ_{80}/λ_5	310/270
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	496
T_s (℃)	558
$T_{10^{14.5}}$ (℃)	451
$T_{10^{13}}$ (℃)	483
$T_{10^{7.6}}$(℃)	637
$\alpha_{-30/70℃}$(10^{-7}/K)	63
$\alpha_{100/300℃}$(10^{-7}/K)	78
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	2
CR	1
RC(S)	1
RA(S)	2

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.911	0.829
2200	0.940	0.884
2000	0.987	0.974
1800	0.993	0.987
1600	0.997	0.993
1400	0.988	0.977
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.999	0.998
650	0.999	0.998
600	0.999	0.998
550	0.999	0.998
500	0.999	0.998
480	0.999	0.998
460	0.999	0.998
440	0.999	0.998
420	0.999	0.998
400	0.999	0.998
390	0.998	0.996
380	0.996	0.992
370	0.995	0.990
360	0.993	0.986
350	0.990	0.981
340	0.987	0.975
330	0.980	0.961
320	0.964	0.930
310	0.931	0.866
300	0.859	0.738
290	0.717	0.514
280	0.483	0.233

机械性质 Mechanical Properties	
H_K (10^7Pa)	492
F_A	72
E (10^7Pa)	8318
G (10^7Pa)	3430
μ	0.212
B (10^{-12}/Pa)	2.72

其他性质 Other Properties	
ρ (g/cm^3)	2.41

备注 Remarks

**:退火速率 anneal rate 25℃/h

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	3.7	4.0	4.1	4.2	4.4	4.6
-40～-20	3.5	3.8	3.9	4.0	4.2	4.5
-20～0	3.6	3.8	3.9	4.0	4.2	4.6
0～20	3.6	3.9	4.0	4.1	4.3	4.7
20～40	3.7	4.0	4.1	4.3	4.5	4.8
40～60	3.8	4.1	4.2	4.5	4.6	4.9
60～80	3.8	4.2	4.3	4.5	4.8	5.0
80～100	3.9	4.4	4.5	4.7	5.0	5.3
100～120	4.1	4.5	4.6	4.7	5.1	5.5
120～140	4.3	4.7	4.8	4.9	5.3	5.6

CDGM

D-K59	517634	n_d = 1.516980	υ_d = 63.41	$n_F - n_C$ = 0.008153
		n_e = 1.518925	υ_e = 63.21	$n_{F'} - n_{C'}$ = 0.008210

折射率 Refractive Index**		
	λ（nm）	
$n_{2325.42}$	2325.42	1.488727
$n_{1970.09}$	1970.09	1.494651
$n_{1529.58}$	1529.58	1.500787
$n_{1060.0}$	1060.0	1.506710
n_t	1013.98	1.507343
n_s	852.11	1.509884
n_r	706.52	1.513021
n_C	656.27	1.514470
$n_{C'}$	643.85	1.514872
n_{He-Ne}	632.8	1.515247
n_D	589.29	1.516907
n_d	587.56	1.516980
n_e	546.07	1.518925
n_F	486.13	1.522623
$n_{F'}$	479.99	1.523082
n_g	435.83	1.526983
n_h	404.66	1.530582
n_i	365.01	1.536689
$n_{313.18}$	313.18	1.549052
$n_{302.15}$	302.15	1.552711

色散公式常数 Constants of Dispersion Formula	
K_1	1.16665743E+00
L_1	7.07953299E-03
K_2	1.05028598E-01
L_2	2.61090052E-02
K_3	9.90269002E-01
L_3	9.86724455E+01

折射率温度系数常数 Constants of dn/dt	
D_0	5.85E-06
D_1	2.25E-08
D_2	-1.51E-10
E_0	3.09E-07
E_1	-8.98E-10
λ_{TK}(μm)	0.268

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.3117	$P'_{s,t}$	0.3095
$P_{C,s}$	0.5625	$P'_{C',s}$	0.6076
$P_{d,C}$	0.3079	$P'_{d,C'}$	0.2568
$P_{e,d}$	0.2386	$P'_{e,d}$	0.2369
$P_{g,F}$	0.5348	$P'_{g,F'}$	0.4752
$P_{i,h}$	0.7490	$P'_{i,h}$	0.7438

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0291	$\Delta P_{C,s}$	0.0108
$\Delta P_{F,e}$	-0.0015	$\Delta P_{g,F}$	-0.0029

着色度 Color Code	
λ_{80}/λ_5	335/305
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	497
T_s (℃)	551
$T_{10^{14.5}}$ (℃)	460
$T_{10^{13}}$ (℃)	492
$T_{10^{7.6}}$(℃)	637
$\alpha_{-30/70℃}$(10^{-7}/K)	60
$\alpha_{100/300℃}$(10^{-7}/K)	80
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	1
CR	1
RC(S)	1
RA(S)	1

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.900	0.810
2200	0.933	0.870
2000	0.987	0.975
1800	0.994	0.989
1600	0.997	0.995
1400	0.987	0.975
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.997	0.995
700	0.997	0.994
650	0.996	0.993
600	0.996	0.993
550	0.997	0.994
500	0.996	0.993
480	0.996	0.992
460	0.996	0.992
440	0.995	0.990
420	0.995	0.990
400	0.995	0.990
390	0.994	0.988
380	0.991	0.983
370	0.989	0.979
360	0.982	0.964
350	0.966	0.933
340	0.927	0.860
330	0.830	0.690
320	0.620	0.380
310	0.280	0.080
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	609
F_A	70
E (10^7Pa)	8303
G (10^7Pa)	3424
μ	0.212
B (10^{-12}/Pa)	2.72

其他性质 Other Properties	
ρ (g/cm^3)	2.41

备注 Remarks
**:退火速率 anneal rate 25℃/h

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	2.7	3.0	3.2	4.1	4.3	4.8
-20～0	3.8	4.1	4.2	4.4	4.6	4.9
0～20	4.1	4.2	4.3	4.6	4.7	4.9
20～40	4.1	4.3	4.4	4.5	4.7	5.0
40～60	4.0	4.3	4.4	4.5	4.7	5.1
60～80	4.1	4.5	4.5	4.6	5.0	5.4
80～100						
100～120						
120～140						

CDGM

D-PK3	524703	n_d = 1.523680	υ_d = 70.27	$n_F - n_C$ = 0.007452
		n_e = 1.525459	υ_e = 70.07	$n_{F'} - n_{C'}$ = 0.007499

折射率 Refractive Index**		
	λ（nm）	
$n_{2325.42}$	2325.42	1.496982
$n_{1970.09}$	1970.09	1.502678
$n_{1529.58}$	1529.58	1.508556
$n_{1060.0}$	1060.0	1.514174
n_t	1013.98	1.514769
n_s	852.11	1.517141
n_r	706.52	1.520044
n_C	656.27	1.521378
$n_{C'}$	643.85	1.521747
n_{He-Ne}	632.8	1.522092
n_D	589.29	1.523613
n_d	587.56	1.523680
n_e	546.07	1.525459
n_F	486.13	1.528830
$n_{F'}$	479.99	1.529246
n_g	435.83	1.532785
n_h	404.66	1.536036
n_i	365.01	1.541517
$n_{313.18}$	313.18	1.552459
$n_{302.15}$	302.15	1.555652

色散公式常数 Constants of Dispersion Formula	
K_1	5.13407653E-01
L_1	1.73535467E-03
K_2	9.23806373E-01
L_2	9.53262202E+01
K_3	7.81224837E-01
L_3	1.18350221E-02

折射率温度系数常数 Constants of dn/dt	
D_0	-3.49E-06
D_1	1.52E-08
D_2	-7.04E-11
E_0	4.13E-07
E_1	3.57E-10
λ_{TK}(μm)	0.131

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.3183	$P'_{s,t}$	0.3163
$P_{C,s}$	0.5686	$P'_{C',s}$	0.6142
$P_{d,C}$	0.3089	$P'_{d,C'}$	0.2578
$P_{e,d}$	0.2387	$P'_{e,d}$	0.2372
$P_{g,F}$	0.5307	$P'_{g,F'}$	0.4719
$P_{i,h}$	0.7355	$P'_{i,h}$	0.7309

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0095	$\Delta P_{C,s}$	0.0007
$\Delta P_{F,e}$	0.0010	$\Delta P_{g,F}$	0.0047

着色度 Color Code	
λ_{80}/λ_5	340/300
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	545
T_s (℃)	592
$T_{10^{14.5}}$ (℃)	493
$T_{10^{13}}$ (℃)	529
$T_{10^{7.6}}$(℃)	648
$\alpha_{-30/70℃}$(10^{-7}/K)	81
$\alpha_{100/300℃}$(10^{-7}/K)	98
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	3
D_A	3
CR	2
RC(S)	1
RA(S)	1

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.758	0.574
2200	0.810	0.656
2000	0.897	0.805
1800	0.945	0.892
1600	0.984	0.969
1400	0.998	0.997
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.998	0.996
650	0.998	0.996
600	0.998	0.996
550	0.998	0.996
500	0.996	0.992
480	0.994	0.989
460	0.994	0.988
440	0.994	0.988
420	0.994	0.988
400	0.994	0.988
390	0.993	0.986
380	0.990	0.980
370	0.984	0.969
360	0.975	0.950
350	0.956	0.913
340	0.916	0.839
330	0.833	0.693
320	0.686	0.471
310	0.469	0.220
300	0.235	0.055
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	447
F_A	136
E (10^7Pa)	7071
G (10^7Pa)	2863
μ	0.235
B (10^{-12}/Pa)	2.22

其他性质 Other Properties	
ρ (g/cm^3)	2.65

备注 Remarks
**:退火速率 anneal rate 25℃/h

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	-0.4	-0.1	0.1	0.2	0.3	0.5
-20～0	0.0	0.2	0.3	0.4	0.5	0.9
0～20	0.1	0.3	0.5	0.5	0.7	0.9
20～40	0.2	0.2	0.5	0.6	0.8	1.0
40～60	0.1	0.3	0.5	0.6	0.8	1.0
60～80	0.2	0.6	0.7	0.9	1.1	1.3
80～100						
100～120						
120～140						

D-ZPK1A	620638	n_d = 1.619990	υ_d = 63.76	$n_F - n_C$ = 0.009724
		n_e = 1.622309	υ_e = 63.45	$n_{F'} - n_{C'}$ = 0.009808

折射率 Refractive Index**		
	λ（nm）	
$n_{2325.42}$	2325.42	1.593409
$n_{1970.09}$	1970.09	1.598117
$n_{1529.58}$	1529.58	1.603168
$n_{1060.0}$	1060.0	1.608555
n_t	1013.98	1.609187
n_s	852.11	1.611848
n_r	706.52	1.615358
n_C	656.27	1.617035
$n_{C'}$	643.85	1.617505
n_{He-Ne}	632.8	1.617944
n_D	589.29	1.619903
n_d	587.56	1.619990
n_e	546.07	1.622309
n_F	486.13	1.626759
$n_{F'}$	479.99	1.627313
n_g	435.83	1.632042
n_h	404.66	1.636417
n_i	365.01	1.643848
$n_{313.18}$	313.18	1.658842
$n_{302.15}$	302.15	1.663253

色散公式常数 Constants of Dispersion Formula	
K_1	8.60621496E-01
L_1	1.42471941E-02
K_2	7.23408663E-01
L_2	2.93226364E-03
K_3	9.15278780E-01
L_3	1.09074599E+02

折射率温度系数常数 Constants of dn/dt	
D_0	-1.27E-05
D_1	7.36E-09
D_2	-1.75E-13
E_0	4.58E-07
E_1	2.54E-10
λ_{TK}(μm)	0.183

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2737	$P'_{s,t}$	0.2713
$P_{C,s}$	0.5334	$P'_{C',s}$	0.5768
$P_{d,C}$	0.3039	$P'_{d,C'}$	0.2534
$P_{e,d}$	0.2385	$P'_{e,d}$	0.2364
$P_{g,F}$	0.5433	$P'_{g,F'}$	0.4822
$P_{i,h}$	0.7642	$P'_{i,h}$	0.7576

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	-0.0396	$\Delta P_{C,s}$	-0.0191
$\Delta P_{F,e}$	0.0027	$\Delta P_{g,F}$	0.0062

着色度 Color Code	
λ_{80}/λ_5	360/295
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	546
T_s (℃)	580
$T_{10}^{14.5}$ (℃)	502
T_{10}^{13} (℃)	531
$T_{10}^{7.6}$(℃)	
$\alpha_{-30/70℃}$(10^{-7}/K)	105
$\alpha_{100/300℃}$(10^{-7}/K)	128
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	4
CR	
RC(S)	1
RA(S)	1

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.956	0.913
2200	0.970	0.942
2000	0.986	0.972
1800	0.992	0.985
1600	0.997	0.995
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.997
700	0.998	0.997
650	0.997	0.995
600	0.998	0.996
550	0.998	0.996
500	0.997	0.995
480	0.997	0.994
460	0.996	0.993
440	0.995	0.990
420	0.994	0.989
400	0.991	0.983
390	0.986	0.973
380	0.977	0.955
370	0.957	0.915
360	0.916	0.839
350	0.842	0.710
340	0.730	0.530
330	0.560	0.310
320	0.400	0.160
310	0.240	0.060
300	0.170	0.030
290		
280		

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	-4.1	-3.6	-3.8	-3.4	-3.3	-2.8
-40～-20	-4.3	-3.9	-3.9	-3.7	-3.5	-3.2
-20～0	-4.4	-4.1	-4.0	-3.9	-3.6	-3.4
0～20	-4.5	-4.3	-4.1	-4.0	-3.8	-3.5
20～40	-4.6	-4.4	-4.2	-4.1	-3.9	-3.5
40～60	-4.7	-4.4	-4.2	-4.0	-3.7	-3.5
60～80	-4.5	-4.2	-4.0	-4.0	-3.6	-3.3
80～100	-4.5	-4.2	-4.0	-4.0	-3.6	-3.3
100～120	-4.5	-4.1	-4.0	-4.0	-3.6	-3.3
120～140	-4.5	-4.1	-4.0	-4.0	-3.6	-3.3

机械性质 Mechanical Properties	
H_K (10^7Pa)	
F_A	340
E (10^7Pa)	7911
G (10^7Pa)	3073
μ	0.287
B (10^{-12}/Pa)	0.87

其他性质 Other Properties	
ρ (g/cm^3)	3.69

备注 Remarks

**:退火速率 anneal rate 25℃/h

CDGM

D-ZPK3	593672	n_d = 1.593270	υ_d = 67.23	$n_F - n_C$ = 0.008825
		n_e = 1.595376	υ_e = 66.96	$n_{F'} - n_{C'}$ = 0.008891

折射率 Refractive Index**		
	λ（nm）	
$n_{2325.42}$	2325.42	1.565250
$n_{1970.09}$	1970.09	1.570800
$n_{1529.58}$	1529.58	1.576619
$n_{1060.0}$	1060.0	1.582430
n_t	1013.98	1.583072
n_s	852.11	1.585694
n_r	706.52	1.589012
n_C	656.27	1.590565
$n_{C'}$	643.85	1.590997
n_{He-Ne}	632.8	1.591400
n_D	589.29	1.593191
n_d	587.56	1.593270
n_e	546.07	1.595376
n_F	486.13	1.599390
$n_{F'}$	479.99	1.599888
n_g	435.83	1.604126
n_h	404.66	1.608033
n_i	365.01	1.614643
$n_{313.18}$	313.18	1.627905
$n_{302.15}$	302.15	1.631788

色散公式常数 Constants of Dispersion Formula	
K_1	5.80374258E-01
L_1	1.72131188E-03
K_2	9.23503788E-01
L_2	1.26541722E-02
K_3	1.03923776E+00
L_3	1.05366349E+02

折射率温度系数常数 Constants of dn/dt	
D_0	-8.61E-06
D_1	1.14E-08
D_2	-3.06E-11
E_0	3.50E-07
E_1	1.08E-10
λ_{TK}(μm)	0.215

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2971	$P'_{s,t}$	0.2949
$P_{C,s}$	0.5520	$P'_{C',s}$	0.5964
$P_{d,C}$	0.3065	$P'_{d,C'}$	0.2557
$P_{e,d}$	0.2386	$P'_{e,d}$	0.2369
$P_{g,F}$	0.5367	$P'_{g,F'}$	0.4767
$P_{i,h}$	0.7490	$P'_{i,h}$	0.7434

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	-0.0140	$\Delta P_{C,s}$	-0.0087
$\Delta P_{F,e}$	0.0018	$\Delta P_{g,F}$	0.0054

着色度 Color Code	
λ_{80}/λ_5	335/235
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	519
T_s (℃)	545
$T_{10^{14.5}}$ (℃)	468
$T_{10^{13}}$ (℃)	499
$T_{10^{7.6}}$(℃)	604
$\alpha_{-30/70℃}$(10^{-7}/K)	92
$\alpha_{100/300℃}$(10^{-7}/K)	115
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	4
CR	1
RC(S)	4
RA(S)	1

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.911	0.830
2200	0.936	0.875
2000	0.969	0.939
1800	0.984	0.968
1600	0.994	0.989
1400	0.998	0.996
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.999	0.998
650	0.999	0.998
600	0.998	0.997
550	0.998	0.997
500	0.998	0.996
480	0.997	0.995
460	0.998	0.996
440	0.997	0.995
420	0.998	0.996
400	0.997	0.994
390	0.997	0.994
380	0.995	0.991
370	0.991	0.983
360	0.986	0.973
350	0.976	0.953
340	0.957	0.915
330	0.922	0.851
320	0.869	0.755
310	0.762	0.581
300	0.702	0.493
290	0.613	0.376
280	0.523	0.274

机械性质 Mechanical Properties	
H_K (10^7Pa)	437
F_A	316
E (10^7Pa)	8074
G (10^7Pa)	3174
μ	0.272
B (10^{-12}/Pa)	

其他性质 Other Properties	
ρ (g/cm^3)	3.37

备注 Remarks
**:退火速率 anneal rate 25℃/h

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	-2.4	-2.1	-2.0	-1.9	-1.6	-1.5
-40～-20	-2.6	-2.2	-2.2	-2.0	-1.7	-1.6
-20～0	-2.5	-2.2	-2.1	-2.0	-1.7	-1.6
0～20	-2.4	-2.2	-2.1	-2.0	-1.8	-1.5
20～40	-2.4	-2.2	-2.1	-2.0	-1.8	-1.5
40～60	-2.4	-2.2	-2.1	-1.9	-1.7	-1.5
60～80	-2.4	-2.2	-2.1	-1.9	-1.7	-1.4
80～100	-2.4	-2.2	-2.1	-1.9	-1.7	-1.4
100～120	-2.5	-2.2	-2.1	-1.9	-1.7	-1.4
120～140	-2.5	-2.2	-2.1	-1.9	-1.7	-1.4

D-ZPK5	592683	n_d = 1.592160	υ_d = 68.28	$n_F - n_C$ = 0.008672
		n_e = 1.594229	υ_e = 67.90	$n_{F'} - n_{C'}$ = 0.008751

折射率 Refractive Index**		
	λ（nm）	
$n_{2325.42}$	2325.42	1.570135
$n_{1970.09}$	1970.09	1.573760
$n_{1529.58}$	1529.58	1.577723
$n_{1060.0}$	1060.0	1.582137
n_t	1013.98	1.582672
n_s	852.11	1.584964
n_r	706.52	1.588046
n_C	656.27	1.589532
$n_{C'}$	643.85	1.589949
n_{He-Ne}	632.8	1.590339
n_D	589.29	1.592083
n_d	587.56	1.592160
n_e	546.07	1.594229
n_F	486.13	1.598204
$n_{F'}$	479.99	1.598700
n_g	435.83	1.602929
n_h	404.66	1.606843
n_i	365.01	1.613489
$n_{313.18}$	313.18	1.626896
$n_{302.15}$	302.15	1.630841

色散公式常数 Constants of Dispersion Formula	
K_1	3.53073711E-01
L_1	1.78712877E-02
K_2	1.14580426E+00
L_2	5.63723799E-03
K_3	7.95754681E-01
L_3	1.25202885E+02

折射率温度系数常数 Constants of dn/dt	
D_0	-2.01E-05
D_1	4.05E-09
D_2	-1.52E-11
E_0	4.00E-07
E_1	1.43E-10
λ_{TK}(μm)	0.192

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2643	$P'_{s,t}$	0.2619
$P_{C,s}$	0.5268	$P'_{C',s}$	0.5696
$P_{d,C}$	0.3030	$P'_{d,C'}$	0.2527
$P_{e,d}$	0.2386	$P'_{e,d}$	0.2364
$P_{g,F}$	0.5449	$P'_{g,F'}$	0.4833
$P_{i,h}$	0.7664	$P'_{i,h}$	0.7595

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	-0.0770	$\Delta P_{C,s}$	-0.0364
$\Delta P_{F,e}$	0.0059	$\Delta P_{g,F}$	0.0154

着色度 Color Code	
λ_{80}/λ_5	350/285
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	565
T_s (℃)	585
$T_{10^{14.5}}$ (℃)	520
$T_{10^{13}}$ (℃)	543
$T_{10^{7.6}}$(℃)	630
$\alpha_{-30/70℃}$(10^{-7}/K)	123
$\alpha_{100/300℃}$(10^{-7}/K)	143
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	2
CR	1
RC(S)	1
RA(S)	1

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.992	0.983
2200	0.995	0.991
2000	0.997	0.995
1800	0.998	0.997
1600	0.999	0.998
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.997
700	0.998	0.997
650	0.998	0.997
600	0.998	0.997
550	0.998	0.997
500	0.998	0.996
480	0.997	0.995
460	0.997	0.994
440	0.996	0.993
420	0.996	0.993
400	0.995	0.991
390	0.994	0.989
380	0.991	0.982
370	0.983	0.966
360	0.964	0.930
350	0.932	0.868
340	0.872	0.761
330	0.780	0.609
320	0.656	0.430
310	0.504	0.254
300	0.387	0.150
290	0.285	0.081
280	0.207	0.043

机械性质 Mechanical Properties	
H_K (10^7Pa)	372
F_A	435
E (10^7Pa)	7385
G (10^7Pa)	2840
μ	0.300
B (10^{-12}/Pa)	0.34

其他性质 Other Properties	
ρ (g/cm^3)	4.29

备注 Remarks

**:退火速率 anneal rate 25℃/h

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	-7.0	-6.9	-6.8	-6.6	-6.5	-6.2
-40～-20	-7.4	-7.2	-7.0	-7.0	-6.7	-6.6
-20～0	-7.8	-7.5	-7.5	-7.4	-7.2	-6.9
0～20	-7.8	-7.6	-7.6	-7.4	-7.3	-7.0
20～40	-8.0	-7.7	-7.7	-7.5	-7.3	-7.2
40～60	-8.0	-7.8	-7.7	-7.6	-7.3	-7.2
60～80	-8.1	-7.9	-7.7	-7.7	-7.4	-7.2
80～100	-8.2	-7.9	-7.8	-7.8	-7.5	-7.3
100～120	-8.3	-8.1	-8.0	-7.9	-7.7	-7.4
120～140	-8.5	-8.3	-8.1	-8.1	-7.8	-7.6

CDGM

D-ZPK7	569712	n_d = 1.568540	υ_d = 71.24	$n_F - n_C$ = 0.007981
		n_e = 1.570444	υ_e = 70.84	$n_{F'} - n_{C'}$ = 0.008053

折射率 Refractive Index**		
	λ（nm）	
$n_{2325.42}$	2325.42	1.548388
$n_{1970.09}$	1970.09	1.551677
$n_{1529.58}$	1529.58	1.555284
$n_{1060.0}$	1060.0	1.559321
n_t	1013.98	1.559813
n_s	852.11	1.561918
n_r	706.52	1.564753
n_C	656.27	1.566121
$n_{C'}$	643.85	1.566505
n_{He-Ne}	632.8	1.566864
n_D	589.29	1.568469
n_d	587.56	1.568540
n_e	546.07	1.570444
n_F	486.13	1.574102
$n_{F'}$	479.99	1.574558
n_g	435.83	1.578446
n_h	404.66	1.582041
n_i	365.01	1.588138
$n_{313.18}$	313.18	1.600393
$n_{302.15}$	302.15	1.603985

色散公式常数 Constants of Dispersion Formula	
K_1	7.14112710E-01
L_1	1.33604289E-02
K_2	7.13400795E-01
L_2	2.89391230E-03
K_3	7.65480668E-01
L_3	1.34125223E+02

折射率温度系数常数 Constants of dn/dt	
D_0	-2.47E-05
D_1	-2.21E-09
D_2	5.20E-12
E_0	4.58E-07
E_1	5.69E-10
λ_{TK}(μm)	0.082

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2638	$P'_{s,t}$	0.2614
$P_{C,s}$	0.5266	$P'_{C',s}$	0.5696
$P_{d,C}$	0.3031	$P'_{d,C'}$	0.2527
$P_{e,d}$	0.2386	$P'_{e,d}$	0.2364
$P_{g,F}$	0.5443	$P'_{g,F'}$	0.4828
$P_{i,h}$	0.7639	$P'_{i,h}$	0.7571

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	-0.0916	$\Delta P_{C,s}$	-0.0435
$\Delta P_{F,e}$	0.0075	$\Delta P_{g,F}$	0.0199

着色度 Color Code	
λ_{80}/λ_5	340/270
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	497
T_s (℃)	522
$T_{10^{14.5}}$ (℃)	459
$T_{10^{13}}$ (℃)	483
$T_{10^{7.6}}$(℃)	563
$\alpha_{-30/70℃}$(10^{-7}/K)	133
$\alpha_{100/300℃}$(10^{-7}/K)	158
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	1
CR	1
RC(S)	1
RA(S)	1

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.998	0.995
2200	0.998	0.997
2000	0.999	0.998
1800	0.999	0.998
1600	0.999	0.998
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.998	0.997
950	0.998	0.996
900	0.998	0.996
850	0.998	0.996
800	0.998	0.996
700	0.998	0.996
650	0.998	0.996
600	0.998	0.996
550	0.998	0.996
500	0.998	0.996
480	0.998	0.996
460	0.998	0.996
440	0.998	0.996
420	0.998	0.996
400	0.998	0.996
390	0.998	0.996
380	0.997	0.994
370	0.994	0.987
360	0.988	0.977
350	0.977	0.954
340	0.955	0.913
330	0.913	0.834
320	0.843	0.711
310	0.722	0.522
300	0.607	0.369
290	0.463	0.214
280	0.370	0.137

机械性质 Mechanical Properties	
H_K (10^7Pa)	338
F_A	402
E (10^7Pa)	6638
G (10^7Pa)	2541
μ	0.306
B (10^{-12}/Pa)	0.18

其他性质 Other Properties	
ρ (g/cm^3)	4.36

备注 Remarks

**:退火速率 anneal rate 25℃/h

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	-8.7	-8.6	-8.5	-8.4	-8.3	-7.9
-40～-20	-9.0	-8.9	-8.8	-8.7	-8.5	-8.3
-20～0	-9.3	-9.0	-8.9	-8.8	-8.8	-8.7
0～20	-9.7	-9.4	-9.3	-9.2	-9.0	-8.9
20～40	-10.0	-9.7	-9.5	-9.5	-9.3	-9.1
40～60	-10.0	-9.8	-9.6	-9.5	-9.5	-9.2
60～80	-10.1	-9.9	-9.8	-9.7	-9.5	-9.3
80～100	-10.2	-10.0	-9.9	-9.8	-9.6	-9.4
100～120	-10.3	-10.1	-10.0	-9.9	-9.7	-9.6
120～140	-10.4	-10.2	-10.1	-10.0	-9.8	-9.7

CDGM

D-ZK2	582593	n_d = 1.582410	υ_d = 59.31	$n_F - n_C$ = 0.009820
		n_e = 1.584752	υ_e = 59.07	$n_{F'} - n_{C'}$ = 0.009900

折射率 Refractive Index**		
	λ（nm）	
$n_{2325.42}$	2325.42	1.552673
$n_{1970.09}$	1970.09	1.558401
$n_{1529.58}$	1529.58	1.564432
$n_{1060.0}$	1060.0	1.570550
n_t	1013.98	1.571238
n_s	852.11	1.574070
n_r	706.52	1.577701
n_C	656.27	1.579413
$n_{C'}$	643.85	1.579891
n_{He-Ne}	632.8	1.580337
n_D	589.29	1.582322
n_d	587.56	1.582410
n_e	546.07	1.584752
n_F	486.13	1.589233
$n_{F'}$	479.99	1.589791
n_g	435.83	1.594548
n_h	404.66	1.598952
n_i	365.01	1.606444
$n_{313.18}$	313.18	1.621644
$n_{302.15}$	302.15	1.626144

色散公式常数 Constants of Dispersion Formula	
K_1	1.10449460E+00
L_1	6.20948070E-03
K_2	3.60941240E-01
L_2	1.96844329E-02
K_3	1.01208343E+00
L_3	1.01038646E+02

折射率温度系数常数 Constants of dn/dt	
D_0	2.00E-06
D_1	1.15E-08
D_2	4.47E-11
E_0	6.34E-07
E_1	6.43E-10
λ_{TK}(μm)	0.089

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2884	$P'_{s,t}$	0.2861
$P_{C,s}$	0.5441	$P'_{C',s}$	0.5880
$P_{d,C}$	0.3052	$P'_{d,C'}$	0.2544
$P_{e,d}$	0.2385	$P'_{e,d}$	0.2366
$P_{g,F}$	0.5412	$P'_{g,F'}$	0.4805
$P_{i,h}$	0.7629	$P'_{i,h}$	0.7568

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0068	$\Delta P_{C,s}$	0.0021
$\Delta P_{F,e}$	-0.0010	$\Delta P_{g,F}$	-0.0035

着色度 Color Code	
λ_{80}/λ_5	335/285
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	501
T_s (℃)	533
$T_{10}^{14.5}$ (℃)	456
T_{10}^{13} (℃)	490
$T_{10}^{7.6}$(℃)	604
$\alpha_{-30/70℃}$(10^{-7}/K)	73
$\alpha_{100/300℃}$(10^{-7}/K)	92
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	6
CR	2
RC(S)	2
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.897	0.804
2200	0.943	0.888
2000	0.983	0.966
1800	0.991	0.982
1600	0.996	0.992
1400	0.993	0.986
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.999	0.998
650	0.998	0.997
600	0.998	0.997
550	0.998	0.997
500	0.998	0.997
480	0.998	0.996
460	0.997	0.995
440	0.996	0.992
420	0.996	0.992
400	0.995	0.991
390	0.994	0.989
380	0.993	0.987
370	0.989	0.979
360	0.982	0.965
350	0.967	0.936
340	0.939	0.881
330	0.887	0.786
320	0.794	0.631
310	0.650	0.422
300	0.462	0.213
290	0.270	0.073
280	0.148	0.022

机械性质 Mechanical Properties	
H_K (10^7Pa)	610
F_A	93
E (10^7Pa)	9044
G (10^7Pa)	3635
μ	0.244
B (10^{-12}/Pa)	2.20

其他性质 Other Properties	
ρ (g/cm^3)	2.96

备注 Remarks

**:退火速率 anneal rate 25℃/h

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	2.5	3.2	3.5	3.7	3.9	4.2
-20～0	2.4	3.1	3.3	3.5	3.9	4.2
0～20	2.7	3.1	3.4	3.5	3.8	4.2
20～40	2.7	3.1	3.5	3.6	3.9	4.2
40～60	2.8	3.2	3.4	3.6	3.9	4.3
60～80	3.1	3.5	3.8	4.1	4.4	4.6
80～100						
100～120						
120～140						

D-ZK2L	586595	n_d = 1.586250	υ_d = 59.52	$n_F - n_C$ = 0.009849
		n_e = 1.588599	υ_e = 59.29	$n_{F'} - n_{C'}$ = 0.009928

折射率 Refractive Index**		
	λ（nm）	
$n_{2325.42}$	2325.42	1.556125
$n_{1970.09}$	1970.09	1.561957
$n_{1529.58}$	1529.58	1.568102
$n_{1060.0}$	1060.0	1.574318
n_t	1013.98	1.575013
n_s	852.11	1.577871
n_r	706.52	1.581524
n_C	656.27	1.583243
$n_{C'}$	643.85	1.583723
n_{He-Ne}	632.8	1.584171
n_D	589.29	1.586162
n_d	587.56	1.586250
n_e	546.07	1.588599
n_F	486.13	1.593092
$n_{F'}$	479.99	1.593651
n_g	435.83	1.598419
n_h	404.66	1.602832
n_i	365.01	1.610338
$n_{313.18}$	313.18	1.625557
$n_{302.15}$	302.15	1.630057

色散公式常数 Constants of Dispersion Formula	
K_1	5.30248488E-01
L_1	1.75027403E-02
K_2	1.12537335E+00
L_2	1.09192004E+02
K_3	9.47317341E-01
L_3	4.98306497E-03

折射率温度系数常数 Constants of dn/dt	
D_0	2.09E-06
D_1	1.37E-08
D_2	-3.16E-11
E_0	4.84E-07
E_1	4.03E-10
λ_{TK}(μm)	0.189

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2902	$P'_{s,t}$	0.2879
$P_{C,s}$	0.5454	$P'_{C',s}$	0.5894
$P_{d,C}$	0.3053	$P'_{d,C'}$	0.2545
$P_{e,d}$	0.2385	$P'_{e,d}$	0.2366
$P_{g,F}$	0.5409	$P'_{g,F'}$	0.4803
$P_{i,h}$	0.7621	$P'_{i,h}$	0.7560

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0089	$\Delta P_{C,s}$	0.0030
$\Delta P_{F,e}$	-0.0010	$\Delta P_{g,F}$	-0.0035

着色度 Color Code	
λ_{80}/λ_5	350/300
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	509
T_s (℃)	549
$T_{10}^{14.5}$ (℃)	458
T_{10}^{13} (℃)	490
$T_{10}^{7.6}$(℃)	614
$\alpha_{-30/70℃}$(10^{-7}/K)	
$\alpha_{100/300℃}$(10^{-7}/K)	90
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	6
CR	
RC(S)	2
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.880	0.780
2200	0.935	0.874
2000	0.981	0.962
1800	0.991	0.982
1600	0.998	0.997
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.997
700	0.998	0.996
650	0.997	0.995
600	0.997	0.995
550	0.997	0.995
500	0.997	0.994
480	0.996	0.993
460	0.996	0.992
440	0.995	0.991
420	0.995	0.991
400	0.994	0.988
390	0.992	0.985
380	0.989	0.979
370	0.984	0.969
360	0.972	0.944
350	0.948	0.898
340	0.900	0.810
330	0.810	0.660
320	0.680	0.460
310	0.480	0.230
300	0.270	0.070
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	592
F_A	93
E (10^7Pa)	9225
G (10^7Pa)	3689
μ	0.250
B (10^{-12}/Pa)	

其他性质 Other Properties	
ρ (g/cm^3)	2.99

备注 Remarks

**:退火速率 anneal rate 25℃/h

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	2.5	2.9	3.0	3.1	3.5	3.8
-40～-20	2.5	2.9	3.0	3.1	3.6	3.8
-20～0	2.6	3.0	3.1	3.3	3.6	3.9
0～20	2.7	3.1	3.3	3.4	3.6	4.0
20～40	2.8	3.2	3.3	3.5	3.7	4.1
40～60	2.8	3.2	3.3	3.6	3.8	4.2
60～80	2.8	3.2	3.3	3.7	3.9	4.3
80～100	2.9	3.3	3.4	3.7	4.1	4.4
100～120	2.9	3.4	3.5	3.7	4.1	4.5
120～140	2.9	3.4	3.7	3.8	4.2	4.6

D-ZK3	588613	n_d = 1.588330	υ_d = 61.28	$n_F - n_C$ = 0.009600
		n_e = 1.590620	υ_e = 61.08	$n_{F'} - n_{C'}$ = 0.009670

折射率 Refractive Index**		
	λ（nm）	
$n_{2325.42}$	2325.42	1.556588
$n_{1970.09}$	1970.09	1.563055
$n_{1529.58}$	1529.58	1.569801
$n_{1060.0}$	1060.0	1.576422
n_t	1013.98	1.577141
n_s	852.11	1.580052
n_r	706.52	1.583692
n_C	656.27	1.585385
$n_{C'}$	643.85	1.585857
n_{He-Ne}	632.8	1.586296
n_D	589.29	1.588244
n_d	587.56	1.588330
n_e	546.07	1.590620
n_F	486.13	1.594985
$n_{F'}$	479.99	1.595527
n_g	435.83	1.600144
n_h	404.66	1.604408
n_i	365.01	1.611644
$n_{313.18}$	313.18	1.626253
$n_{302.15}$	302.15	1.630556

色散公式常数 Constants of Dispersion Formula	
K_1	1.24347604E+00
L_1	1.08031442E+02
K_2	9.18798491E-01
L_2	1.39520404E-02
K_3	5.67180042E-01
L_3	1.27620015E-03

折射率温度系数常数 Constants of dn/dt	
D_0	1.68E-06
D_1	9.68E-09
D_2	-2.00E-11
E_0	5.34E-07
E_1	1.41E-09
λ_{TK}(μm)	0.172

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.3032	$P'_{s,t}$	0.3010
$P_{C,s}$	0.5555	$P'_{C',s}$	0.6003
$P_{d,C}$	0.3068	$P'_{d,C'}$	0.2557
$P_{e,d}$	0.2385	$P'_{e,d}$	0.2368
$P_{g,F}$	0.5374	$P'_{g,F'}$	0.4775
$P_{i,h}$	0.7537	$P'_{i,h}$	0.7483

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0237	$\Delta P_{C,s}$	0.0089
$\Delta P_{F,e}$	-0.0016	$\Delta P_{g,F}$	-0.0039

着色度 Color Code	
λ_{80}/λ_5	345/295
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	511
T_s (℃)	546
$T_{10^{14.5}}$ (℃)	471
$T_{10^{13}}$ (℃)	499
$T_{10^{7.6}}$(℃)	605
$\alpha_{-30/70℃}$(10^{-7}/K)	72
$\alpha_{100/300℃}$(10^{-7}/K)	93
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	3
D_A	6
CR	4c
RC(S)	2
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.830	0.690
2200	0.916	0.839
2000	0.977	0.954
1800	0.989	0.979
1600	0.998	0.996
1400	0.994	0.989
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.999	0.998
650	0.999	0.998
600	0.999	0.998
550	0.999	0.998
500	0.998	0.997
480	0.998	0.996
460	0.998	0.996
440	0.997	0.995
420	0.997	0.994
400	0.995	0.991
390	0.993	0.987
380	0.990	0.980
370	0.983	0.966
360	0.967	0.936
350	0.939	0.882
340	0.880	0.780
330	0.790	0.630
320	0.660	0.430
310	0.470	0.220
300	0.280	0.080
290	0.130	0.020
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	628
F_A	125
E (10^7Pa)	9767
G (10^7Pa)	3958
μ	0.234
B (10^{-12}/Pa)	2.08

其他性质 Other Properties	
ρ (g/cm^3)	2.83

备注 Remarks

**:退火速率 anneal rate 25℃/h

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	2.5	3.0	3.1	3.2	3.4	3.5
-20～0	2.3	2.8	2.9	3.3	3.5	3.7
0～20	2.5	2.8	3.2	3.4	3.5	3.8
20～40	2.3	3.1	3.0	3.2	3.7	4.6
40～60	2.6	3.0	3.1	3.1	3.9	3.9
60～80	3.1	3.3	3.4	3.4	3.8	3.9
80～100						
100～120						
120～140						

CDGM

D-ZK3L	591606	n_d = 1.590900	υ_d = 60.62	$n_F - n_C$ = 0.009748
		n_e = 1.593225	υ_e = 60.40	$n_{F'} - n_{C'}$ = 0.009821

折射率 Refractive Index**		
	λ（nm）	
$n_{2325.42}$	2325.42	1.559069
$n_{1970.09}$	1970.09	1.565505
$n_{1529.58}$	1529.58	1.572227
$n_{1060.0}$	1060.0	1.578855
n_t	1013.98	1.579578
n_s	852.11	1.582513
n_r	706.52	1.586195
n_C	656.27	1.587912
$n_{C'}$	643.85	1.588390
n_{He-Ne}	632.8	1.588835
n_D	589.29	1.590813
n_d	587.56	1.590900
n_e	546.07	1.593225
n_F	486.13	1.597660
$n_{F'}$	479.99	1.598211
n_g	435.83	1.602903
n_h	404.66	1.607239
n_i	365.01	1.614598
$n_{313.18}$	313.18	1.629466
$n_{302.15}$	302.15	1.633848

色散公式常数 Constants of Dispersion Formula	
K_1	6.36443631E-01
L_1	2.17371740E-03
K_2	8.56921557E-01
L_2	1.44861653E-02
K_3	1.23247717E+00
L_3	1.07585666E+02

折射率温度系数常数 Constants of dn/dt	
D_0	2.09E-06
D_1	1.33E-08
D_2	5.99E-11
E_0	4.94E-07
E_1	2.85E-10
λ_{TK}(μm)	0.176

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.3011	$P'_{s,t}$	0.2988
$P_{C,s}$	0.5539	$P'_{C',s}$	0.5984
$P_{d,C}$	0.3065	$P'_{d,C'}$	0.2556
$P_{e,d}$	0.2385	$P'_{e,d}$	0.2367
$P_{g,F}$	0.5379	$P'_{g,F'}$	0.4778
$P_{i,h}$	0.7549	$P'_{i,h}$	0.7493

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0231	$\Delta P_{C,s}$	0.0088
$\Delta P_{F,e}$	-0.0016	$\Delta P_{g,F}$	-0.0046

着色度 Color Code	
λ_{80}/λ_5	345/295
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	506
T_s (℃)	545
$T_{10}^{14.5}$ (℃)	461
T_{10}^{13} (℃)	492
$T_{10}^{7.6}$(℃)	601
$\alpha_{-30/70℃}$(10^{-7}/K)	
$\alpha_{100/300℃}$(10^{-7}/K)	92
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	2
D_A	6
CR	
RC(S)	2
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.849	0.720
2200	0.933	0.870
2000	0.981	0.962
1800	0.992	0.985
1600	0.998	0.996
1400	0.997	0.995
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.999	0.998
650	0.998	0.997
600	0.998	0.997
550	0.998	0.997
500	0.998	0.996
480	0.998	0.996
460	0.997	0.995
440	0.996	0.993
420	0.996	0.992
400	0.994	0.989
390	0.992	0.985
380	0.988	0.977
370	0.980	0.960
360	0.962	0.925
350	0.928	0.861
340	0.866	0.750
330	0.755	0.570
320	0.600	0.360
310	0.410	0.170
300	0.220	0.050
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	643
F_A	93
E (10^7Pa)	9745
G (10^7Pa)	3950
μ	0.233
B (10^{-12}/Pa)	

其他性质 Other Properties	
ρ (g/cm^3)	2.84

备注 Remarks

**:退火速率 anneal rate 25℃/h

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	2.6	3.3	3.5	3.6	3.7	4.4
-20～0	2.9	3.1	3.3	3.3	3.6	4.2
0～20	2.8	3.0	3.2	3.6	3.6	4.1
20～40	2.9	3.0	3.2	3.7	3.7	4.2
40～60	2.9	3.0	3.2	3.8	4.0	4.3
60～80	2.9	3.9	4.2	4.2	4.3	4.3
80～100						
100～120						
120～140						

CDGM

D-ZK79	608578	n_d = 1.608090	υ_d = 57.82	$n_F - n_C$ = 0.010517
		n_e = 1.610598	υ_e = 57.55	$n_{F'} - n_{C'}$ = 0.010609

折射率 Refractive Index**		
	λ（nm）	
$n_{2325.42}$	2325.42	1.578205
$n_{1970.09}$	1970.09	1.583688
$n_{1529.58}$	1529.58	1.589530
$n_{1060.0}$	1060.0	1.595627
n_t	1013.98	1.596329
n_s	852.11	1.599258
n_r	706.52	1.603078
n_C	656.27	1.604895
$n_{C'}$	643.85	1.605403
n_{He-Ne}	632.8	1.605878
n_D	589.29	1.607997
n_d	587.56	1.608090
n_e	546.07	1.610598
n_F	486.13	1.615412
$n_{F'}$	479.99	1.616012
n_g	435.83	1.621140
n_h	404.66	1.625897
n_i	365.01	1.634008
$n_{313.18}$	313.18	1.650507
$n_{302.15}$	302.15	1.655397

色散公式常数 Constants of Dispersion Formula	
K_1	7.54687333E-01
L_1	3.15353195E-03
K_2	7.88729239E-01
L_2	1.62517857E-02
K_3	1.10213843E+00
L_3	1.12786360E+02

折射率温度系数常数 Constants of dn/dt	
D_0	6.70E-07
D_1	1.89E-08
D_2	-2.68E-10
E_0	2.21E-07
E_1	1.09E-09
λ_{TK}(μm)	0.312

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2785	$P'_{s,t}$	0.2761
$P_{C,s}$	0.5360	$P'_{C',s}$	0.5792
$P_{d,C}$	0.3038	$P'_{d,C'}$	0.2533
$P_{e,d}$	0.2385	$P'_{e,d}$	0.2364
$P_{g,F}$	0.5446	$P'_{g,F'}$	0.4834
$P_{i,h}$	0.7712	$P'_{i,h}$	0.7645

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	-0.0042	$\Delta P_{C,s}$	-0.0025
$\Delta P_{F,e}$	-0.0004	$\Delta P_{g,F}$	-0.0026

着色度 Color Code	
λ_{80}/λ_5	350/295
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	509
T_s (℃)	551
$T_{10^{14.5}}$ (℃)	468
$T_{10^{13}}$ (℃)	500
$T_{10^{7.6}}$(℃)	619
$\alpha_{-30/70℃}$(10^{-7}/K)	81
$\alpha_{100/300℃}$(10^{-7}/K)	99
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	2
D_A	2
CR	4b
RC(S)	3
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.916	0.839
2200	0.964	0.929
2000	0.987	0.974
1800	0.994	0.988
1600	0.999	0.998
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.999	0.997
650	0.998	0.996
600	0.998	0.996
550	0.999	0.998
500	0.998	0.997
480	0.998	0.995
460	0.997	0.993
440	0.996	0.992
420	0.996	0.992
400	0.995	0.991
390	0.993	0.986
380	0.989	0.979
370	0.981	0.963
360	0.963	0.927
350	0.930	0.866
340	0.869	0.755
330	0.766	0.587
320	0.614	0.377
310	0.430	0.180
300	0.250	0.060
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	586
F_A	141
E (10^7Pa)	9301
G (10^7Pa)	3684
μ	0.262
B (10^{-12}/Pa)	1.83

其他性质 Other Properties	
ρ (g/cm^3)	3.19

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	0.7	1.0	1.3	1.5	1.7	1.8
-20～0	1.4	1.7	1.9	2.0	2.3	2.8
0～20	1.6	1.8	2.0	2.1	2.4	2.9
20～40	1.7	2.0	2.3	2.3	2.7	3.0
40～60	1.8	2.1	2.3	2.5	2.9	3.2
60～80	1.8	2.2	2.3	2.5	3.0	3.3
80～100						
100～120						
120～140						

备注 Remarks

**:退火速率 anneal rate 25℃/h

CDGM

D-LaK5	677548	n_d = 1.676860	υ_d = 54.81	$n_F - n_C$ = 0.012350
		n_e = 1.679804	υ_e = 54.57	$n_{F'} - n_{C'}$ = 0.012458

折射率 Refractive Index**		
	λ（nm）	
$n_{2325.42}$	2325.42	1.640442
$n_{1970.09}$	1970.09	1.647361
$n_{1529.58}$	1529.58	1.654660
$n_{1060.0}$	1060.0	1.662119
n_t	1013.98	1.662963
n_s	852.11	1.666457
n_r	706.52	1.670970
n_C	656.27	1.673107
$n_{C'}$	643.85	1.673704
n_{He-Ne}	632.8	1.674263
n_D	589.29	1.676750
n_d	587.56	1.676860
n_e	546.07	1.679804
n_F	486.13	1.685457
$n_{F'}$	479.99	1.686162
n_g	435.83	1.692194
n_h	404.66	1.697799
n_i	365.01	1.707379
$n_{313.18}$	313.18	1.726958
$n_{302.15}$	302.15	1.732782

色散公式常数 Constants of Dispersion Formula	
K_1	6.02363510E-01
L_1	3.07499779E-08
K_2	1.15823046E+00
L_2	1.58379352E-02
K_3	1.30267215E+00
L_3	1.01976296E+02

折射率温度系数常数 Constants of dn/dt	
D_0	1.76E-06
D_1	1.72E-08
D_2	-6.77E-11
E_0	3.92E-07
E_1	6.44E-10
λ_{TK}(μm)	0.230

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2829	$P'_{s,t}$	0.2805
$P_{C,s}$	0.5385	$P'_{C',s}$	0.5817
$P_{d,C}$	0.3039	$P'_{d,C'}$	0.2533
$P_{e,d}$	0.2384	$P'_{e,d}$	0.2363
$P_{g,F}$	0.5455	$P'_{g,F'}$	0.4842
$P_{i,h}$	0.7757	$P'_{i,h}$	0.7690

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0169	$\Delta P_{C,s}$	0.0071
$\Delta P_{F,e}$	-0.0020	$\Delta P_{g,F}$	-0.0069

着色度 Color Code	
λ_{80}/λ_5	355/280
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	539
T_s (℃)	578
$T_{10^{14.5}}$ (℃)	499
$T_{10^{13}}$ (℃)	525
$T_{10^{7.6}}$(℃)	625
$\alpha_{-30/70℃}$(10^{-7}/K)	73
$\alpha_{100/300℃}$(10^{-7}/K)	94
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	3
CR	1
RC(S)	4
RA(S)	4

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.843	0.711
2200	0.955	0.911
2000	0.984	0.968
1800	0.994	0.987
1600	0.998	0.996
1400	0.998	0.996
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.998	0.997
650	0.998	0.997
600	0.998	0.997
550	0.998	0.997
500	0.998	0.997
480	0.998	0.997
460	0.998	0.996
440	0.996	0.993
420	0.996	0.993
400	0.994	0.989
390	0.992	0.984
380	0.990	0.980
370	0.983	0.967
360	0.971	0.942
350	0.948	0.898
340	0.908	0.824
330	0.848	0.719
320	0.757	0.573
310	0.645	0.416
300	0.517	0.267
290	0.381	0.145
280	0.251	0.063

机械性质 Mechanical Properties	
H_K (10^7Pa)	647
F_A	139
E (10^7Pa)	11292
G (10^7Pa)	4439
μ	0.272
B (10^{-12}/Pa)	1.89

其他性质 Other Properties	
ρ (g/cm^3)	3.37

备注 Remarks

**:退火速率 anneal rate 25℃/h

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	1.8	2.4	2.6	2.7	3.2	3.6
-20～0	2.5	2.6	2.7	3.0	3.2	3.7
0～20	2.7	3.0	3.3	3.4	3.7	3.8
20～40	2.8	3.2	3.5	3.6	3.8	4.2
40～60	2.9	3.3	3.5	3.7	4.0	4.5
60～80	2.9	3.3	3.6	3.8	4.3	5.0
80～100						
100～120						
120～140						

CDGM

D-LaK6	693531	n_d = 1.692810	υ_d = 53.05	$n_F - n_C$ = 0.013060
		n_e = 1.695922	υ_e = 52.82	$n_{F'} - n_{C'}$ = 0.013176

折射率 Refractive Index**

	λ（nm）	
$n_{2325.42}$	2325.42	1.655163
$n_{1970.09}$	1970.09	1.662215
$n_{1529.58}$	1529.58	1.669660
$n_{1060.0}$	1060.0	1.677333
n_t	1013.98	1.678210
n_s	852.11	1.681855
n_r	706.52	1.686595
n_C	656.27	1.688847
$n_{C'}$	643.85	1.689478
n_{He-Ne}	632.8	1.690067
n_D	589.29	1.692694
n_d	587.56	1.692810
n_e	546.07	1.695922
n_F	486.13	1.701907
$n_{F'}$	479.99	1.702654
n_g	435.83	1.709051
n_h	404.66	1.715006
n_i	365.01	1.725210
$n_{313.18}$	313.18	1.746210
$n_{302.15}$	302.15	1.752506

色散公式常数 Constants of Dispersion Formula

K_1	1.22299893E+00
L_1	9.40859262E+01
K_2	4.71209941E-01
L_2	2.27830104E-02
K_3	1.33928922E+00
L_3	6.65285316E-03

折射率温度系数常数 Constants of dn/dt

D_0	1.33E-06
D_1	1.27E-08
D_2	-2.36E-11
E_0	5.62E-07
E_1	7.08E-10
λ_{TK}(μm)	0.199

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2791	$P'_{s,t}$	0.2766
$P_{C,s}$	0.5354	$P'_{C',s}$	0.5786
$P_{d,C}$	0.3034	$P'_{d,C'}$	0.2529
$P_{e,d}$	0.2383	$P'_{e,d}$	0.2362
$P_{g,F}$	0.5470	$P'_{g,F'}$	0.4855
$P_{i,h}$	0.7813	$P'_{i,h}$	0.7744

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	0.0183	$\Delta P_{C,s}$	0.0082
$\Delta P_{F,e}$	-0.0024	$\Delta P_{g,F}$	-0.0083

着色度 Color Code

λ_{80}/λ_5	360/305
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	522
T_s (℃)	560
$T_{10^{14.5}}$ (℃)	485
$T_{10^{13}}$ (℃)	513
$T_{10^{7.6}}$(℃)	616
$\alpha_{-30/70℃}$(10^{-7}/K)	75
$\alpha_{100/300℃}$(10^{-7}/K)	95
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	6
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.840	0.710
2200	0.960	0.922
2000	0.987	0.974
1800	0.998	0.996
1600	0.999	0.998
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.997
700	0.998	0.996
650	0.998	0.996
600	0.998	0.996
550	0.998	0.996
500	0.997	0.994
480	0.995	0.990
460	0.993	0.987
440	0.991	0.983
420	0.990	0.980
400	0.988	0.977
390	0.987	0.974
380	0.983	0.966
370	0.974	0.949
360	0.958	0.918
350	0.933	0.870
340	0.883	0.780
330	0.800	0.640
320	0.650	0.430
310	0.400	0.160
300	0.120	0.010
290		
280		

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	2.4	2.9	3.0	3.2	3.8	4.0
-40～-20	2.4	2.9	3.0	3.2	3.7	4.0
-20～0	2.4	3.0	3.3	3.5	3.8	4.3
0～20	2.5	3.1	3.3	3.6	3.9	4.3
20～40	2.6	3.2	3.5	3.7	4.2	4.5
40～60	2.7	3.3	3.5	3.7	4.3	4.7
60～80	2.8	3.3	3.5	3.7	4.3	4.9
80～100	2.9	3.4	3.8	4.0	4.4	5.1
100～120	3.0	3.5	4.0	4.2	4.6	5.3
120～140	3.1	3.7	4.1	4.3	4.7	5.4

机械性质 Mechanical Properties

H_K (10^7Pa)	665
F_A	138
E (10^7Pa)	11369
G (10^7Pa)	4445
μ	0.279
B (10^{-12}/Pa)	

其他性质 Other Properties

ρ (g/cm^3)	3.50

备注 Remarks

**:退火速率 anneal rate 25℃/h

CDGM

D-LaK52	729539	n_d = 1.729240	υ_d = 53.85	$n_F - n_C$ = 0.013542
		n_e = 1.732468	υ_e = 53.62	$n_{F'} - n_{C'}$ = 0.013660

折射率 Refractive Index**		
	λ（nm）	
$n_{2325.42}$	2325.42	1.689516
$n_{1970.09}$	1970.09	1.697072
$n_{1529.58}$	1529.58	1.705007
$n_{1060.0}$	1060.0	1.713113
n_t	1013.98	1.714033
n_s	852.11	1.717847
n_r	706.52	1.722785
n_C	656.27	1.725126
$n_{C'}$	643.85	1.725781
n_{He-Ne}	632.8	1.726393
n_D	589.29	1.729120
n_d	587.56	1.729240
n_e	546.07	1.732468
n_F	486.13	1.738668
$n_{F'}$	479.99	1.739441
n_g	435.83	1.746056
n_h	404.66	1.752204
n_i	365.01	1.762712
$n_{313.18}$	313.18	1.784202
$n_{302.15}$	302.15	1.790601

色散公式常数 Constants of Dispersion Formula	
K_1	1.04345567E+00
L_1	1.73669450E-02
K_2	8.88612736E-01
L_2	3.01494124E-03
K_3	1.23102650E+00
L_3	8.71255673E+01

折射率温度系数常数 Constants of dn/dt	
D_0	1.80E-06
D_1	1.72E-08
D_2	-5.24E-11
E_0	4.52E-07
E_1	1.37E-10
λ_{TK}(μm)	0.229

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2816	$P'_{s,t}$	0.2792
$P_{C,s}$	0.5375	$P'_{C',s}$	0.5808
$P_{d,C}$	0.3038	$P'_{d,C'}$	0.2532
$P_{e,d}$	0.2384	$P'_{e,d}$	0.2363
$P_{g,F}$	0.5456	$P'_{g,F'}$	0.4843
$P_{i,h}$	0.7760	$P'_{i,h}$	0.7693

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0192	$\Delta P_{C,s}$	0.0085
$\Delta P_{F,e}$	-0.0024	$\Delta P_{g,F}$	-0.0084

着色度 Color Code	
λ_{80}/λ_5	355/275
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	620
T_s (℃)	648
$T_{10}^{14.5}$ (℃)	572
T_{10}^{13} (℃)	601
$T_{10}^{7.6}$(℃)	702
$\alpha_{-30/70℃}$(10^{-7}/K)	61
$\alpha_{100/300℃}$(10^{-7}/K)	78
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	3
CR	1
RC(S)	2
RA(S)	2

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.805	0.648
2200	0.948	0.899
2000	0.982	0.964
1800	0.994	0.988
1600	0.998	0.996
1400	0.998	0.997
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.999	0.998
650	0.999	0.998
600	0.999	0.998
550	0.999	0.998
500	0.999	0.998
480	0.998	0.997
460	0.998	0.996
440	0.997	0.995
420	0.996	0.992
400	0.994	0.989
390	0.992	0.985
380	0.989	0.979
370	0.983	0.966
360	0.971	0.943
350	0.952	0.907
340	0.925	0.856
330	0.885	0.784
320	0.832	0.692
310	0.744	0.553
300	0.693	0.480
290	0.625	0.391
280	0.539	0.291

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	2.4	2.8	3.0	3.1	3.5	3.9
-40～-20	2.5	2.9	3.1	3.2	3.7	4.0
-20～0	2.5	3.0	3.2	3.5	3.8	4.2
0～20	2.6	3.2	3.4	3.7	4.1	4.6
20～40	3.0	3.5	3.8	3.9	4.4	4.8
40～60	3.1	3.6	3.8	4.0	4.4	4.9
60～80	3.2	3.6	3.8	4.0	4.4	4.9
80～100	3.2	3.7	3.9	4.0	4.5	5.0
100～120	3.2	3.7	3.9	4.1	4.6	5.2
120～140	3.3	3.8	4.0	4.1	4.7	5.3

机械性质 Mechanical Properties	
H_K (10^7Pa)	669
F_A	141
E (10^7Pa)	12143
G (10^7Pa)	4711
μ	0.289
B (10^{-12}/Pa)	

其他性质 Other Properties	
ρ (g/cm^3)	4.00

备注 Remarks

**:退火速率 anneal rate 25℃/h

CDGM

D-LaK70	668553	n_d = 1.668000	υ_d = 55.30	$n_F - n_C$ = 0.012080
		n_e = 1.670880	υ_e = 55.06	$n_{F'} - n_{C'}$ = 0.012185

折射率 Refractive Index**

	λ（nm）	
$n_{2325.42}$	2325.42	1.631998
$n_{1970.09}$	1970.09	1.638888
$n_{1529.58}$	1529.58	1.646146
$n_{1060.0}$	1060.0	1.653533
n_t	1013.98	1.654366
n_s	852.11	1.657804
n_r	706.52	1.662232
n_C	656.27	1.664326
$n_{C'}$	643.85	1.664911
n_{He-Ne}	632.8	1.665458
n_D	589.29	1.667892
n_d	587.56	1.668000
n_e	546.07	1.670880
n_F	486.13	1.676406
$n_{F'}$	479.99	1.677096
n_g	435.83	1.682988
n_h	404.66	1.688463
n_i	365.01	1.697815
$n_{313.18}$	313.18	1.716913
$n_{302.15}$	302.15	1.722591

色散公式常数 Constants of Dispersion Formula

K_1	6.15746796E-01
L_1	3.10601738E-04
K_2	1.11671184E+00
L_2	1.58114210E-02
K_3	1.29436779E+00
L_3	1.02149797E+02

折射率温度系数常数 Constants of dn/dt

D_0	2.10E-06
D_1	1.31E-08
D_2	-3.75E-11
E_0	5.42E-07
E_1	6.96E-10
λ_{TK}(μm)	0.177

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.2846	$P'_{s,t}$	0.2822
$P_{C,s}$	0.5399	$P'_{C',s}$	0.5833
$P_{d,C}$	0.3041	$P'_{d,C'}$	0.2535
$P_{e,d}$	0.2384	$P'_{e,d}$	0.2364
$P_{g,F}$	0.5449	$P'_{g,F'}$	0.4835
$P_{i,h}$	0.7742	$P'_{i,h}$	0.7675

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	0.0177	$\Delta P_{C,s}$	0.0074
$\Delta P_{F,e}$	-0.0020	$\Delta P_{g,F}$	-0.0067

着色度 Color Code

λ_{80}/λ_5	350/280
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	531
T_s (℃)	567
$T_{10}^{14.5}$ (℃)	488
T_{10}^{13} (℃)	518
$T_{10}^{7.6}$(℃)	626
$\alpha_{-30/70℃}$(10^{-7}/K)	73
$\alpha_{100/300℃}$(10^{-7}/K)	91
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	1
D_A	6
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ

λ（nm）	τ (5mm)	τ (10mm)
2400	0.860	0.740
2200	0.963	0.928
2000	0.988	0.976
1800	0.997	0.994
1600	0.999	0.998
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.998	0.997
650	0.998	0.997
600	0.998	0.996
550	0.998	0.996
500	0.997	0.995
480	0.997	0.994
460	0.996	0.993
440	0.996	0.992
420	0.995	0.990
400	0.993	0.986
390	0.995	0.990
380	0.993	0.986
370	0.981	0.963
360	0.968	0.937
350	0.946	0.895
340	0.906	0.821
330	0.840	0.710
320	0.750	0.570
310	0.650	0.420
300	0.520	0.270
290	0.400	0.160
280	0.280	0.080

机械性质 Mechanical Properties

H_K (10^7Pa)	660
F_A	135
E (10^7Pa)	11335
G (10^7Pa)	4415
μ	0.284
B (10^{-12}/Pa)	1.91

其他性质 Other Properties

ρ (g/cm^3)	3.35

备注 Remarks

**:退火速率 anneal rate 25℃/h

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	2.7	3.0	3.2	3.4	3.8	4.1
-40～-20	2.7	3.2	3.3	3.4	3.8	4.1
-20～0	2.9	3.3	3.5	3.6	3.9	4.5
0～20	3.0	3.3	3.5	3.8	4.3	4.6
20～40	3.0	3.4	3.6	3.9	4.4	4.8
40～60	3.0	3.5	3.7	4.0	4.4	4.9
60～80	3.0	3.7	3.9	4.0	4.4	4.9
80～100	3.0	3.7	4.0	4.1	4.5	4.9
100～120	3.1	3.8	4.0	4.2	4.5	5.2
120～140	3.1	3.8	4.0	4.3	4.7	5.2

CDGM

D-ZF10	687312	n_d = 1.687310	υ_d = 31.18	$n_F - n_C$ = 0.022041
		n_e = 1.692517	υ_e = 30.94	$n_{F'} - n_{C'}$ = 0.022381

折射率 Refractive Index**		
	λ（nm）	
$n_{2325.42}$	2325.42	1.643650
$n_{1970.09}$	1970.09	1.649478
$n_{1529.58}$	1529.58	1.656125
$n_{1060.0}$	1060.0	1.664400
n_t	1013.98	1.665496
n_s	852.11	1.670389
n_r	706.52	1.677393
n_C	656.27	1.680906
$n_{C'}$	643.85	1.681907
n_{He-Ne}	632.8	1.682848
n_D	589.29	1.687119
n_d	587.56	1.687310
n_e	546.07	1.692517
n_F	486.13	1.702947
$n_{F'}$	479.99	1.704288
n_g	435.83	1.716155
n_h	404.66	1.727890
n_i	365.01	1.749937
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
K_1	1.39531577E+00
L_1	1.34661574E+02
K_2	1.80389834E-01
L_2	6.04305431E-02
K_3	1.57395389E+00
L_3	1.22657049E-02

折射率温度系数常数 Constants of dn/dt	
D_0	-4.72E-06
D_1	7.48E-09
D_2	-1.04E-10
E_0	7.54E-07
E_1	2.26E-09
λ_{TK}(μm)	0.300

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2220	$P'_{s,t}$	0.2186
$P_{C,s}$	0.4772	$P'_{C',s}$	0.5146
$P_{d,C}$	0.2905	$P'_{d,C'}$	0.2414
$P_{e,d}$	0.2362	$P'_{e,d}$	0.2327
$P_{g,F}$	0.5992	$P'_{g,F'}$	0.5302
$P_{i,h}$	1.0003	$P'_{i,h}$	0.9851

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0060	$\Delta P_{C,s}$	0.0017
$\Delta P_{F,e}$	0.0007	$\Delta P_{g,F}$	0.0067

着色度 Color Code	
λ_{80}/λ_5	395/360
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	507
T_s (℃)	548
$T_{10^{14.5}}$ (℃)	459
$T_{10^{13}}$ (℃)	491
$T_{10^{7.6}}$(℃)	599
$\alpha_{-30/70℃}$(10^{-7}/K)	100
$\alpha_{100/300℃}$(10^{-7}/K)	129
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	2
D_A	1
CR	1
RC(S)	3
RA(S)	1

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.930	0.870
2200	0.957	0.916
2000	0.978	0.956
1800	0.989	0.979
1600	0.999	0.998
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.997	0.994
650	0.996	0.992
600	0.996	0.993
550	0.996	0.993
500	0.992	0.984
480	0.989	0.978
460	0.985	0.971
440	0.981	0.963
420	0.972	0.945
400	0.940	0.883
390	0.890	0.800
380	0.810	0.650
370	0.600	0.360
360	0.220	0.050
350		
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	589
F_A	178
E (10^7Pa)	8790
G (10^7Pa)	3574
μ	0.230
B (10^{-12}/Pa)	2.48

其他性质 Other Properties	
ρ (g/cm^3)	2.84

备注 Remarks

**:退火速率 anneal rate 25℃/h

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	-0.9	-0.7	0.4	1.2	1.5	1.9
-20～0	-0.4	0.3	0.4	0.4	1.4	2.4
0～20	-0.6	0.1	0.2	0.3	1.5	2.9
20～40	-0.8	0.5	0.6	1.1	2.2	3.5
40～60	-0.8	0.4	0.7	1.0	2.4	3.9
60～80	-0.9	0.4	0.7	0.9	2.4	3.8
80～100						
100～120						
120～140						

CDGM

D-ZF93	000207	n_d = 1.999800	υ_d = 20.69	$n_F - n_C$ = 0.048331
		n_e = 2.011137	υ_e = 20.51	$n_{F'} - n_{C'}$ = 0.049298

折射率 Refractive Index**		
	λ（nm）	
$n_{2325.42}$	2325.42	1.923233
$n_{1970.09}$	1970.09	1.930761
$n_{1529.58}$	1529.58	1.939978
$n_{1060.0}$	1060.0	1.953517
n_t	1013.98	1.955507
n_s	852.11	1.964798
n_r	706.52	1.978883
n_C	656.27	1.986183
$n_{C'}$	643.85	1.988285
n_{He-Ne}	632.8	1.990272
n_D	589.29	1.999388
n_d	587.56	1.999800
n_e	546.07	2.011137
n_F	486.13	2.034514
$n_{F'}$	479.99	2.037583
n_g	435.83	2.065385
n_h	404.66	
n_i	365.01	
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
K_1	1.43302280E+00
L_1	1.01185435E+02
K_2	2.13630545E+00
L_2	1.38161232E-02
K_3	6.30184037E-01
L_3	6.58578450E-02

折射率温度系数常数 Constants of dn/dt	
D_0	1.28E-05
D_1	3.34E-08
D_2	-1.53E-10
E_0	2.75E-06
E_1	2.52E-09
λ_{TK}(μm)	0.299

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.1922	$P'_{s,t}$	0.1885
$P_{C,s}$	0.4425	$P'_{C',s}$	0.4764
$P_{d,C}$	0.2817	$P'_{d,C'}$	0.2336
$P_{e,d}$	0.2346	$P'_{e,d}$	0.2300
$P_{g,F}$	0.6387	$P'_{g,F'}$	0.5640
$P_{i,h}$		$P'_{i,h}$	

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	-0.0090	$\Delta P_{C,s}$	-0.0082
$\Delta P_{F,e}$	0.0055	$\Delta P_{g,F}$	0.0283

着色度 Color Code	
λ_{80}/λ_5	
λ_{70}/λ_5	470/405

热性质 Thermal Properties	
T_g (℃)	439
T_s (℃)	462
$T_{10^{14.5}}$ (℃)	408
$T_{10^{13}}$ (℃)	428
$T_{10^{7.6}}$(℃)	496
$\alpha_{-30/70℃}$(10^{-7}/K)	78
$\alpha_{100/300℃}$(10^{-7}/K)	94
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	4
CR	1
RC(S)	1
RA(S)	4

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.854	0.730
2200	0.947	0.896
2000	0.981	0.962
1800	0.992	0.985
1600	0.997	0.994
1400	0.998	0.996
1200	0.999	0.998
1060	0.999	0.998
1000	0.998	0.997
950	0.998	0.997
900	0.998	0.996
850	0.997	0.995
800	0.995	0.990
700	0.994	0.989
650	0.994	0.988
600	0.993	0.986
550	0.988	0.976
500	0.958	0.918
480	0.927	0.859
460	0.869	0.755
440	0.758	0.575
420	0.530	0.281
400	0.134	0.018
390		
380		
370		
360		
350		
340		
330		
320		
310		
300		
290		
280		

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	10.8	14.9	16.3	18.2	23.0	29.2
-20～0	12.1	16.2	18.0	20.1	24.5	31.4
0～20	12.1	16.7	18.7	20.8	26.3	32.5
20～40	13.9	18.0	20.4	22.5	28.1	35.1
40～60	13.9	19.1	20.5	22.4	28.2	35.1
60～80	14.3	19.3	21.3	23.7	29.4	37.1
80～100						
100～120						
120～140						

机械性质 Mechanical Properties	
H_K (10^7Pa)	440
F_A	250
E (10^7Pa)	7795
G (10^7Pa)	3073
μ	0.268
B (10^{-12}/Pa)	1.20

其他性质 Other Properties	
ρ (g/cm^3)	6.11

备注 Remarks

**:退火速率 anneal rate 25℃/h

CDGM

D-LaF50	773495	n_d = 1.772880	υ_d = 49.52	$n_F - n_C$ = 0.015608
		n_e = 1.776597	υ_e = 49.25	$n_{F'} - n_{C'}$ = 0.015768

折射率 Refractive Index**		
	λ（nm）	
$n_{2325.42}$	2325.42	1.734504
$n_{1970.09}$	1970.09	1.740776
$n_{1529.58}$	1529.58	1.747590
$n_{1060.0}$	1060.0	1.755196
n_t	1013.98	1.756126
n_s	852.11	1.760125
n_r	706.52	1.765554
n_C	656.27	1.768190
$n_{C'}$	643.85	1.768932
n_{He-Ne}	632.8	1.769627
n_D	589.29	1.772742
n_d	587.56	1.772880
n_e	546.07	1.776597
n_F	486.13	1.783798
$n_{F'}$	479.99	1.784700
n_g	435.83	1.792457
n_h	404.66	1.799714
n_i	365.01	1.812219
$n_{313.18}$	313.18	1.838182
$n_{302.15}$	302.15	1.846019

色散公式常数 Constants of Dispersion Formula	
K_1	7.34700246E-01
L_1	2.26667460E-02
K_2	1.33716574E+00
L_2	6.01676900E-03
K_3	1.13513348E+00
L_3	9.57512696E+01

折射率温度系数常数 Constants of dn/dt	
D_0	1.53E-06
D_1	1.43E-08
D_2	-3.83E-11
E_0	5.87E-07
E_1	4.10E-10
λ_{TK}(μm)	0.222

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2562	$P'_{s,t}$	0.2536
$P_{C,s}$	0.5167	$P'_{C',s}$	0.5585
$P_{d,C}$	0.3005	$P'_{d,C'}$	0.2504
$P_{e,d}$	0.2381	$P'_{e,d}$	0.2357
$P_{g,F}$	0.5548	$P'_{g,F'}$	0.4919
$P_{i,h}$	0.8012	$P'_{i,h}$	0.7931

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	-0.0066	$\Delta P_{C,s}$	-0.0021
$\Delta P_{F,e}$	-0.0012	$\Delta P_{g,F}$	-0.0066

着色度 Color Code	
λ_{80}/λ_5	380/310
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	573
T_s (℃)	613
$T_{10^{14.5}}$ (℃)	523
$T_{10^{13}}$ (℃)	557
$T_{10^{7.6}}$(℃)	671
$\alpha_{-30/70℃}$(10^{-7}/K)	73
$\alpha_{100/300℃}$(10^{-7}/K)	89
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	3
CR	1
RC(S)	1
RA(S)	4

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.890	0.792
2200	0.970	0.941
2000	0.988	0.976
1800	0.996	0.993
1600	0.998	0.997
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.998	0.997
650	0.998	0.997
600	0.998	0.996
550	0.998	0.996
500	0.998	0.996
480	0.997	0.995
460	0.996	0.993
440	0.995	0.990
420	0.993	0.987
400	0.989	0.979
390	0.985	0.970
380	0.977	0.955
370	0.962	0.925
360	0.932	0.869
350	0.884	0.782
340	0.809	0.655
330	0.706	0.498
320	0.576	0.332
310	0.367	0.135
300	0.277	0.077
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	614
F_A	110
E (10^7Pa)	12098
G (10^7Pa)	4645
μ	0.302
B (10^{-12}/Pa)	1.36

其他性质 Other Properties	
ρ (g/cm^3)	4.93

备注 Remarks

**:退火速率 anneal rate 25℃/h

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	2.7	3.2	3.5	3.6	4.3	4.8
-40～-20	2.7	3.2	3.5	3.7	4.3	4.8
-20～0	2.7	3.3	3.6	3.7	4.3	4.9
0～20	2.8	3.3	3.6	3.7	4.3	5.1
20～40	3.0	3.7	3.9	4.3	4.8	5.5
40～60	3.0	3.7	4.0	4.3	4.9	5.5
60～80	3.0	3.8	4.0	4.3	4.9	5.5
80～100	3.3	4.0	4.1	4.5	5.1	5.8
100～120	3.3	4.0	4.1	4.5	5.2	5.8
120～140	3.3	4.0	4.1	4.5	5.2	5.8

CDGM

D-LaF050	767492	n_d = 1.767090	υ_d = 49.20	$n_F - n_C$ = 0.015592
		n_e = 1.770803	υ_e = 48.96	$n_{F'} - n_{C'}$ = 0.015745

折射率 Refractive Index**		
	λ（nm）	
$n_{2325.42}$	2325.42	1.725246
$n_{1970.09}$	1970.09	1.732697
$n_{1529.58}$	1529.58	1.740623
$n_{1060.0}$	1060.0	1.749037
n_t	1013.98	1.750025
n_s	852.11	1.754196
n_r	706.52	1.759729
n_C	656.27	1.762386
$n_{C'}$	643.85	1.763132
n_{He-Ne}	632.8	1.763830
n_D	589.29	1.766951
n_d	587.56	1.767090
n_e	546.07	1.770803
n_F	486.13	1.777978
$n_{F'}$	479.99	1.778877
n_g	435.83	1.786592
n_h	404.66	1.793805
n_i	365.01	1.806235
$n_{313.18}$	313.18	1.832069
$n_{302.15}$	302.15	1.839880

色散公式常数 Constants of Dispersion Formula	
K_1	1.22950343E+00
L_1	8.73071190E+01
K_2	6.41767823E-01
L_2	2.37652160E-02
K_3	1.41136391E+00
L_3	6.45932700E-03

折射率温度系数常数 Constants of dn/dt	
D_0	4.01E-06
D_1	1.55E-08
D_2	-3.41E-11
E_0	5.74E-07
E_1	4.46E-10
λ_{TK}(μm)	0.215

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2675	$P'_{s,t}$	0.2649
$P_{C,s}$	0.5253	$P'_{C',s}$	0.5675
$P_{d,C}$	0.3017	$P'_{d,C'}$	0.2514
$P_{e,d}$	0.2381	$P'_{e,d}$	0.2358
$P_{g,F}$	0.5525	$P'_{g,F'}$	0.4900
$P_{i,h}$	0.7972	$P'_{i,h}$	0.7895

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0147	$\Delta P_{C,s}$	0.0072
$\Delta P_{F,e}$	-0.0026	$\Delta P_{g,F}$	-0.0095

着色度 Color Code	
λ_{80}/λ_5	375/285
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	610
T_s (℃)	644
$T_{10^{14.5}}$ (℃)	507
$T_{10^{13}}$ (℃)	540
$T_{10^{7.6}}$(℃)	692
$\alpha_{-30/70℃}$(10^{-7}/K)	57
$\alpha_{100/300℃}$(10^{-7}/K)	74
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	3
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.830	0.680
2200	0.954	0.911
2000	0.983	0.966
1800	0.995	0.991
1600	0.999	0.998
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.997
700	0.998	0.997
650	0.998	0.996
600	0.998	0.996
550	0.998	0.996
500	0.996	0.993
480	0.995	0.990
460	0.993	0.987
440	0.992	0.984
420	0.989	0.979
400	0.984	0.969
390	0.979	0.959
380	0.971	0.942
370	0.954	0.911
360	0.927	0.860
350	0.890	0.790
340	0.830	0.690
330	0.750	0.560
320	0.650	0.420
310	0.480	0.230
300	0.400	0.160
290	0.260	0.070
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	756
F_A	104
E (10^7Pa)	12276
G (10^7Pa)	4751
μ	0.292
B (10^{-12}/Pa)	

其他性质 Other Properties	
ρ (g/cm^3)	4.51

备注 Remarks
**:退火速率 anneal rate 25℃/h

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	3.8	4.6	4.7	5.1	5.5	5.8
-40～-20	3.8	4.6	4.8	5.3	5.7	6.1
-20～0	4.1	4.7	4.9	5.0	5.8	6.2
0～20	4.2	5.0	5.1	5.3	5.9	6.4
20～40	4.4	5.1	5.3	5.5	6.1	6.7
40～60	4.6	5.3	5.5	5.7	6.4	6.9
60～80	4.7	5.3	5.7	5.9	6.6	7.2
80～100	4.8	5.4	5.8	6.0	6.8	7.5
100～120	4.9	5.5	5.8	6.1	6.8	7.4
120～140	5.0	5.6	5.8	6.2	6.8	7.5

CDGM

D-LaF53	742493	n_d = 1.742100	υ_d = 49.25	$n_F - n_C$ = 0.015069
		n_e = 1.745688	υ_e = 49.00	$n_{F'} - n_{C'}$ = 0.015218

折射率 Refractive Index**		
	λ（nm）	
$n_{2325.42}$	2325.42	1.701745
$n_{1970.09}$	1970.09	1.708920
$n_{1529.58}$	1529.58	1.716556
$n_{1060.0}$	1060.0	1.724668
n_t	1013.98	1.725622
n_s	852.11	1.729647
n_r	706.52	1.734989
n_C	656.27	1.737556
$n_{C'}$	643.85	1.738276
n_{He-Ne}	632.8	1.738951
n_D	589.29	1.741966
n_d	587.56	1.742100
n_e	546.07	1.745688
n_F	486.13	1.752625
$n_{F'}$	479.99	1.753494
n_g	435.83	1.760955
n_h	404.66	1.767935
n_i	365.01	1.779967
$n_{313.18}$	313.18	1.804994
$n_{302.15}$	302.15	1.812566

色散公式常数 Constants of Dispersion Formula	
K_1	1.32239317E+00
L_1	6.06224219E-03
K_2	6.46347208E-01
L_2	2.34824415E-02
K_3	1.17507569E+00
L_3	8.78164211E+01

折射率温度系数常数 Constants of dn/dt	
D_0	7.67E-06
D_1	2.36E-08
D_2	-1.95E-10
E_0	6.35E-07
E_1	3.67E-10
λ_{TK}(μm)	0.208

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2671	$P'_{s,t}$	0.2645
$P_{C,s}$	0.5249	$P'_{C',s}$	0.5670
$P_{d,C}$	0.3015	$P'_{d,C'}$	0.2513
$P_{e,d}$	0.2381	$P'_{e,d}$	0.2358
$P_{g,F}$	0.5528	$P'_{g,F'}$	0.4903
$P_{i,h}$	0.7985	$P'_{i,h}$	0.7906

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0137	$\Delta P_{C,s}$	0.0067
$\Delta P_{F,e}$	-0.0024	$\Delta P_{g,F}$	-0.0090

着色度 Color Code	
λ_{80}/λ_5	370/295
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	557
T_s (℃)	590
$T_{10}^{14.5}$ (℃)	513
T_{10}^{13} (℃)	538
$T_{10}^{7.6}$(℃)	641
$\alpha_{-30/70℃}$(10^{-7}/K)	56
$\alpha_{100/300℃}$(10^{-7}/K)	72
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	6
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.825	0.681
2200	0.953	0.909
2000	0.982	0.964
1800	0.994	0.988
1600	0.998	0.996
1400	0.998	0.997
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.997
700	0.998	0.996
650	0.998	0.996
600	0.997	0.995
550	0.997	0.995
500	0.997	0.995
480	0.996	0.993
460	0.995	0.991
440	0.993	0.987
420	0.991	0.983
400	0.986	0.973
390	0.981	0.962
380	0.970	0.940
370	0.948	0.898
360	0.908	0.824
350	0.847	0.717
340	0.750	0.563
330	0.628	0.394
320	0.486	0.236
310	0.316	0.100
300	0.214	0.046
290	0.145	0.021
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	673
F_A	101
E (10^7Pa)	11978
G (10^7Pa)	4614
μ	0.298
B (10^{-12}/Pa)	2.20

其他性质 Other Properties	
ρ (g/cm^3)	4.26

备注 Remarks

**:退火速率 anneal rate 25℃/h

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	4.8	5.3	5.7	5.8	6.0	6.6
-20～0	5.8	6.4	6.8	7.2	7.5	7.9
0～20	6.0	6.6	7.2	7.3	8.2	8.9
20～40	6.4	7.2	7.4	7.5	8.3	9.0
40～60	6.6	7.3	7.6	7.6	8.5	9.1
60～80	7.0	7.4	7.6	7.9	8.5	9.3
80～100						
100～120						
120～140						

CDGM

D-LaF79	730405	n_d = 1.729860	υ_d = 40.50	$n_F - n_C$ = 0.018023
		n_e = 1.734138	υ_e = 40.24	$n_{F'} - n_{C'}$ = 0.018243

折射率 Refractive Index**		
	λ（nm）	
$n_{2325.42}$	2325.42	1.687867
$n_{1970.09}$	1970.09	1.694489
$n_{1529.58}$	1529.58	1.701753
$n_{1060.0}$	1060.0	1.710002
n_t	1013.98	1.711024
n_s	852.11	1.715450
n_r	706.52	1.721532
n_C	656.27	1.724512
$n_{C'}$	643.85	1.725355
n_{He-Ne}	632.8	1.726145
n_D	589.29	1.729702
n_d	587.56	1.729860
n_e	546.07	1.734138
n_F	486.13	1.742535
$n_{F'}$	479.99	1.743598
n_g	435.83	1.752841
n_h	404.66	1.761677
n_i	365.01	1.777405
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
K_1	2.44124156E-01
L_1	4.30784572E-02
K_2	1.39592511E+00
L_2	1.13324709E+02
K_3	1.66977539E+00
L_3	9.64211165E-03

折射率温度系数常数 Constants of dn/dt	
D_0	
D_1	
D_2	
E_0	
E_1	
λ_{TK}(μm)	

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2456	$P'_{s,t}$	0.2426
$P_{C,s}$	0.5028	$P'_{C',s}$	0.5429
$P_{d,C}$	0.2967	$P'_{d,C'}$	0.2469
$P_{e,d}$	0.2374	$P'_{e,d}$	0.2345
$P_{g,F}$	0.5718	$P'_{g,F'}$	0.5067
$P_{i,h}$	0.8727	$P'_{i,h}$	0.8621

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0113	$\Delta P_{C,s}$	0.0053
$\Delta P_{F,e}$	-0.0016	$\Delta P_{g,F}$	-0.0049

着色度 Color Code	
λ_{80}/λ_5	395/340
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	496
T_s (℃)	535
$T_{10^{14.5}}$ (℃)	468
$T_{10^{13}}$ (℃)	490
$T_{10^{7.6}}$(℃)	591
$\alpha_{-30/70℃}$(10^{-7}/K)	90
$\alpha_{100/300℃}$(10^{-7}/K)	111
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	6
CR	3
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.901	0.811
2200	0.972	0.944
2000	0.989	0.978
1800	0.997	0.994
1600	0.999	0.998
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.999	0.998
650	0.998	0.996
600	0.997	0.995
550	0.997	0.994
500	0.995	0.990
480	0.993	0.986
460	0.990	0.980
440	0.986	0.972
420	0.980	0.961
400	0.967	0.935
390	0.952	0.906
380	0.930	0.864
370	0.890	0.800
360	0.820	0.680
350	0.670	0.450
340	0.350	0.120
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	618
F_A	158
E (10^7Pa)	11034
G (10^7Pa)	4367
μ	0.263
B (10^{-12}/Pa)	2.08

其他性质 Other Properties	
ρ (g/cm^3)	3.21

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20						
-20～0						
0～20						
20～40						
40～60						
60～80						
80～100						
100～120						
120～140						

备注 Remarks

**:退火速率 anneal rate 25℃/h

CDGM

D-ZLaF50	802455	n_d = 1.802250	υ_d = 45.45	$n_F - n_C$ = 0.017650
		n_e = 1.806450	υ_e = 45.20	$n_{F'} - n_{C'}$ = 0.017841

折射率 Refractive Index**		
	λ（nm）	
$n_{2325.42}$	2325.42	1.759793
$n_{1970.09}$	1970.09	1.766626
$n_{1529.58}$	1529.58	1.774063
$n_{1060.0}$	1060.0	1.782435
n_t	1013.98	1.783467
n_s	852.11	1.787921
n_r	706.52	1.794002
n_C	656.27	1.796965
$n_{C'}$	643.85	1.797800
n_{He-Ne}	632.8	1.798582
n_D	589.29	1.802094
n_d	587.56	1.802250
n_e	546.07	1.806450
n_F	486.13	1.814615
$n_{F'}$	479.99	1.815641
n_g	435.83	1.824487
n_h	404.66	1.832813
n_i	365.01	1.847291
$n_{313.18}$	313.18	1.878041
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
K_1	2.81077854E-01
L_1	3.46761107E-02
K_2	1.19505397E+00
L_2	9.18385642E+01
K_3	1.88534009E+00
L_3	9.75311743E-03

折射率温度系数常数 Constants of dn/dt	
D_0	4.59E-06
D_1	1.77E-08
D_2	-4.18E-11
E_0	8.47E-07
E_1	3.91E-10
λ_{TK}(μm)	0.150

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2524	$P'_{s,t}$	0.2496
$P_{C,s}$	0.5124	$P'_{C',s}$	0.5537
$P_{d,C}$	0.2994	$P'_{d,C'}$	0.2494
$P_{e,d}$	0.2380	$P'_{e,d}$	0.2354
$P_{g,F}$	0.5593	$P'_{g,F'}$	0.4958
$P_{i,h}$	0.8203	$P'_{i,h}$	0.8115

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0043	$\Delta P_{C,s}$	0.0032
$\Delta P_{F,e}$	-0.0022	$\Delta P_{g,F}$	-0.0090

着色度 Color Code	
λ_{80}/λ_5	380/330
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	605
T_s (℃)	642
$T_{10^{14.5}}$ (℃)	556
$T_{10^{13}}$ (℃)	588
$T_{10^{7.6}}$(℃)	694
$\alpha_{-30/70℃}$(10^{-7}/K)	62
$\alpha_{100/300℃}$(10^{-7}/K)	75
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	3
CR	1
RC(S)	1
RA(S)	4

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.864	0.746
2200	0.963	0.928
2000	0.985	0.970
1800	0.995	0.991
1600	0.999	0.997
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.998	0.997
800	0.997	0.995
700	0.997	0.994
650	0.996	0.993
600	0.997	0.994
550	0.996	0.993
500	0.996	0.992
480	0.995	0.990
460	0.993	0.987
440	0.991	0.982
420	0.988	0.976
400	0.983	0.967
390	0.978	0.956
380	0.967	0.935
370	0.947	0.897
360	0.907	0.822
350	0.825	0.680
340	0.660	0.430
330	0.350	0.120
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	
F_A	104
E (10^7Pa)	12174
G (10^7Pa)	4673
μ	0.302
B (10^{-12}/Pa)	1.73

其他性质 Other Properties	
ρ (g/cm^3)	4.89

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	4.6	5.5	5.6	5.8	6.7	7.2
-20～0	4.6	5.5	5.7	5.9	6.7	7.3
0～20	4.8	5.7	6.3	6.4	7.0	7.8
20～40	4.9	6.0	6.5	6.7	7.3	8.1
40～60	5.5	6.3	6.5	6.8	7.5	8.3
60～80	5.6	6.3	6.5	7.0	7.9	8.5
80～100						
100～120						
120～140						

备注 Remarks

**:退火速率 anneal rate 25℃/h

CDGM

D-ZLaF52LA	809410	n_d = 1.808820	υ_d = 40.97	$n_F - n_C$ = 0.019741
		n_e = 1.813508	υ_e = 40.71	$n_{F'} - n_{C'}$ = 0.019981

折射率 Refractive Index**		
	λ（nm）	
$n_{2325.42}$	2325.42	1.763997
$n_{1970.09}$	1970.09	1.770865
$n_{1529.58}$	1529.58	1.778425
$n_{1060.0}$	1060.0	1.787165
n_t	1013.98	1.788264
n_s	852.11	1.793057
n_r	706.52	1.799696
n_C	656.27	1.802960
$n_{C'}$	643.85	1.803883
n_{He-Ne}	632.8	1.804748
n_D	589.29	1.808646
n_d	587.56	1.808820
n_e	546.07	1.813508
n_F	486.13	1.822701
$n_{F'}$	479.99	1.823864
n_g	435.83	1.833955
n_h	404.66	1.843568
n_i	365.01	1.860577
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
K_1	1.85743559E+00
L_1	9.62363637E-03
K_2	3.23469816E-01
L_2	3.98398385E-02
K_3	1.28949460E+00
L_3	9.84654718E+01

折射率温度系数常数 Constants of dn/dt	
D_0	5.23E-06
D_1	1.56E-08
D_2	-3.55E-11
E_0	8.33E-07
E_1	7.37E-10
λ_{TK}(μm)	0.217

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2428	$P'_{s,t}$	0.2399
$P_{C,s}$	0.5016	$P'_{C',s}$	0.5418
$P_{d,C}$	0.2968	$P'_{d,C'}$	0.2471
$P_{e,d}$	0.2375	$P'_{e,d}$	0.2346
$P_{g,F}$	0.5701	$P'_{g,F'}$	0.5050
$P_{i,h}$	0.8616	$P'_{i,h}$	0.8513

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0051	$\Delta P_{C,s}$	0.0030
$\Delta P_{F,e}$	-0.0016	$\Delta P_{g,F}$	-0.0058

着色度 Color Code	
λ_{80}/λ_5	400/340
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	546
T_s (℃)	582
$T_{10^{14.5}}$ (℃)	506
$T_{10^{13}}$ (℃)	538
$T_{10^{7.6}}$(℃)	644
$\alpha_{-30/70℃}$(10^{-7}/K)	66
$\alpha_{100/300℃}$(10^{-7}/K)	83
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	6
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.870	0.750
2200	0.961	0.924
2000	0.984	0.969
1800	0.996	0.992
1600	0.999	0.998
1400	0.998	0.996
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.998	0.997
650	0.998	0.996
600	0.997	0.995
550	0.997	0.995
500	0.995	0.990
480	0.992	0.985
460	0.990	0.980
440	0.986	0.972
420	0.980	0.961
400	0.968	0.937
390	0.955	0.913
380	0.933	0.870
370	0.890	0.790
360	0.800	0.640
350	0.610	0.380
340	0.280	0.080
330		
320		
310		
300		
290		
280		

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	4.9	5.8	6.1	6.3	7.2	7.8
-40～-20	5.0	6.0	6.2	6.6	7.5	8.3
-20～0	5.1	6.0	6.4	6.7	7.5	8.5
0～20	5.3	6.1	6.7	6.9	7.7	8.6
20～40	5.5	6.4	7.0	7.3	8.1	8.9
40～60	5.7	6.8	7.1	7.4	8.4	9.4
60～80	5.7	6.9	7.2	7.5	8.5	9.6
80～100	5.9	6.9	7.3	7.8	8.8	9.8
100～120	5.9	7.0	7.4	8.0	9.1	9.9
120～140	6.0	7.2	7.6	8.1	9.2	10.3

机械性质 Mechanical Properties	
H_K (10^7Pa)	662
F_A	109
E (10^7Pa)	11506
G (10^7Pa)	4427
μ	0.300
B (10^{-12}/Pa)	1.98

其他性质 Other Properties	
ρ (g/cm^3)	4.56

备注 Remarks

**:退火速率 anneal rate 25℃/h

CDGM

D-ZLaF61	821427	n_d = 1.821310	υ_d = 42.67	$n_F - n_C$ = 0.019246
		n_e = 1.825884	υ_e = 42.41	$n_{F'} - n_{C'}$ = 0.019472

折射率 Refractive Index**		
	λ（nm）	
$n_{2325.42}$	2325.42	1.777737
$n_{1970.09}$	1970.09	1.784351
$n_{1529.58}$	1529.58	1.791647
$n_{1060.0}$	1060.0	1.800135
n_t	1013.98	1.801208
n_s	852.11	1.805893
n_r	706.52	1.812390
n_C	656.27	1.815583
$n_{C'}$	643.85	1.816485
n_{He-Ne}	632.8	1.817332
n_D	589.29	1.821140
n_d	587.56	1.821310
n_e	546.07	1.825884
n_F	486.13	1.834829
$n_{F'}$	479.99	1.835957
n_g	435.83	1.845727
n_h	404.66	1.854987
n_i	365.01	1.871239
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
K_1	3.84732155E-01
L_1	3.55326885E-02
K_2	1.84240920E+00
L_2	9.16902591E-03
K_3	1.21280764E+00
L_3	9.59091697E+01

折射率温度系数常数 Constants of dn/dt	
D_0	4.38E-06
D_1	1.46E-08
D_2	-1.77E-11
E_0	7.39E-07
E_1	6.32E-10
λ_{TK}(μm)	0.229

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2434	$P'_{s,t}$	0.2406
$P_{C,s}$	0.5035	$P'_{C',s}$	0.5440
$P_{d,C}$	0.2976	$P'_{d,C'}$	0.2478
$P_{e,d}$	0.2377	$P'_{e,d}$	0.2349
$P_{g,F}$	0.5662	$P'_{g,F'}$	0.5017
$P_{i,h}$	0.8444	$P'_{i,h}$	0.8346

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	-0.0004	$\Delta P_{C,s}$	0.0009
$\Delta P_{F,e}$	-0.0015	$\Delta P_{g,F}$	-0.0068

着色度 Color Code	
λ_{80}/λ_5	400/340
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	594
T_s (℃)	635
$T_{10^{14.5}}$ (℃)	554
$T_{10^{13}}$ (℃)	585
$T_{10^{7.6}}$(℃)	696
$\alpha_{-30/70℃}$(10^{-7}/K)	66
$\alpha_{100/300℃}$(10^{-7}/K)	85
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	2
D_A	3
CR	1
RC(S)	1
RA(S)	4

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.885	0.784
2200	0.969	0.938
2000	0.987	0.973
1800	0.996	0.992
1600	0.999	0.997
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.999	0.997
650	0.998	0.996
600	0.997	0.994
550	0.997	0.994
500	0.996	0.993
480	0.993	0.987
460	0.991	0.983
440	0.988	0.976
420	0.984	0.968
400	0.974	0.948
390	0.962	0.926
380	0.943	0.890
370	0.902	0.814
360	0.815	0.665
350	0.627	0.393
340	0.292	0.085
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	691
F_A	94
E (10^7Pa)	11842
G (10^7Pa)	4551
μ	0.301
B (10^{-12}/Pa)	1.70

其他性质 Other Properties	
ρ (g/cm^3)	4.92

备注 Remarks
**:退火速率 anneal rate 25℃/h

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	4.5	5.4	5.7	6.0	6.6	7.3
-40～-20	4.5	5.5	5.7	6.0	6.8	7.6
-20～0	4.7	5.6	5.8	6.2	6.9	7.7
0～20	4.9	5.6	5.9	6.3	7.2	8.1
20～40	5.1	5.7	6.1	6.5	7.3	8.3
40～60	5.2	6.0	6.4	6.8	7.7	8.5
60～80	5.3	6.2	6.7	7.0	7.9	8.9
80～100	5.4	6.5	6.9	7.1	8.1	9.1
100～120	5.5	6.7	7.1	7.4	8.3	9.3
120～140	5.7	7.1	7.4	7.7	8.5	9.7

D-ZLaF67	883372	n_d = 1.882590	υ_d = 37.19	$n_F - n_C$ = 0.023735
		n_e = 1.888220	υ_e = 36.94	$n_{F'} - n_{C'}$ = 0.024048

折射率 Refractive Index**		
	λ（nm）	
$n_{2325.42}$	2325.42	1.833497
$n_{1970.09}$	1970.09	1.840240
$n_{1529.58}$	1529.58	1.847859
$n_{1060.0}$	1060.0	1.857235
n_t	1013.98	1.858468
n_s	852.11	1.863949
n_r	706.52	1.871726
n_C	656.27	1.875595
$n_{C'}$	643.85	1.876693
n_{He-Ne}	632.8	1.877724
n_D	589.29	1.882382
n_d	587.56	1.882590
n_e	546.07	1.888220
n_F	486.13	1.899330
$n_{F'}$	479.99	1.900741
n_g	435.83	1.913042
n_h	404.66	1.924855
n_i	365.01	1.945994
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
K_1	1.36012388E+00
L_1	1.03579888E+02
K_2	2.09601012E+00
L_2	1.10379620E-02
K_3	3.33537105E-01
L_3	4.49413554E-02

折射率温度系数常数 Constants of dn/dt	
D_0	3.08E-06
D_1	6.74E-09
D_2	-7.29E-11
E_0	1.03E-06
E_1	2.10E-09
λ_{TK}(μm)	0.185

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2309	$P'_{s,t}$	0.2279
$P_{C,s}$	0.4907	$P'_{C',s}$	0.5299
$P_{d,C}$	0.2947	$P'_{d,C'}$	0.2452
$P_{e,d}$	0.2372	$P'_{e,d}$	0.2341
$P_{g,F}$	0.5777	$P'_{g,F'}$	0.5115
$P_{i,h}$	0.8906	$P'_{i,h}$	0.8790

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0001	$\Delta P_{C,s}$	0.0010
$\Delta P_{F,e}$	-0.0012	$\Delta P_{g,F}$	-0.0047

着色度 Color Code	
λ_{80}/λ_5	
λ_{70}/λ_5	400/350

热性质 Thermal Properties	
T_g (℃)	604
T_s (℃)	651
$T_{10^{14.5}}$ (℃)	574
$T_{10^{13}}$ (℃)	600
$T_{10^{7.6}}$(℃)	709
$\alpha_{-30/70℃}$(10^{-7}/K)	67
$\alpha_{100/300℃}$(10^{-7}/K)	85
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	2
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.899	0.808
2200	0.971	0.942
2000	0.988	0.977
1800	0.997	0.993
1600	0.999	0.998
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.996
700	0.997	0.994
650	0.996	0.992
600	0.995	0.991
550	0.995	0.991
500	0.991	0.983
480	0.987	0.974
460	0.982	0.965
440	0.974	0.948
420	0.962	0.925
400	0.931	0.867
390	0.898	0.807
380	0.840	0.706
370	0.729	0.532
360	0.520	0.270
350	0.212	0.045
340		
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	670
F_A	97
E (10^7Pa)	12083
G (10^7Pa)	4626
μ	0.306
B (10^{-12}/Pa)	1.58

其他性质 Other Properties	
ρ (g/cm^3)	5.50

备注 Remarks

**:退火速率 anneal rate 25℃/h

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	4.5	4.8	5.0	5.2	6.5	7.1
-20～0	4.5	5.6	6.1	6.6	7.4	8.6
0～20	4.4	5.5	6.0	6.5	7.3	8.3
20～40	4.2	5.5	6.1	6.4	7.6	8.4
40～60	4.2	5.7	6.1	6.7	7.8	9.0
60～80	4.4	5.9	6.7	6.8	7.8	9.2
80～100						
100～120						
120～140						

CDGM

D-ZLaF81	808410	n_d = 1.807570	υ_d = 40.97	$n_F - n_C$ = 0.019709
		n_e = 1.812251	υ_e = 40.72	$n_{F'} - n_{C'}$ = 0.019949

折射率 Refractive Index**		
	λ（nm）	
$n_{2325.42}$	2325.42	1.762815
$n_{1970.09}$	1970.09	1.769670
$n_{1529.58}$	1529.58	1.777214
$n_{1060.0}$	1060.0	1.785940
n_t	1013.98	1.787038
n_s	852.11	1.791826
n_r	706.52	1.798458
n_C	656.27	1.801718
$n_{C'}$	643.85	1.802639
n_{He-Ne}	632.8	1.803504
n_D	589.29	1.807397
n_d	587.56	1.807570
n_e	546.07	1.812251
n_F	486.13	1.821427
$n_{F'}$	479.99	1.822588
n_g	435.83	1.832659
n_h	404.66	1.842255
n_i	365.01	1.859245
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
K_1	1.90958888E+00
L_1	1.02182926E-02
K_2	2.66893034E-01
L_2	4.21328894E-02
K_3	1.26585975E+00
L_3	9.70733228E+01

折射率温度系数常数 Constants of dn/dt	
D_0	5.18E-06
D_1	1.52E-08
D_2	1.59E-10
E_0	5.99E-07
E_1	9.97E-11
λ_{TK}(μm)	0.282

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2429	$P'_{s,t}$	0.2400
$P_{C,s}$	0.5019	$P'_{C',s}$	0.5420
$P_{d,C}$	0.2969	$P'_{d,C'}$	0.2472
$P_{e,d}$	0.2375	$P'_{e,d}$	0.2346
$P_{g,F}$	0.5699	$P'_{g,F'}$	0.5048
$P_{i,h}$	0.8620	$P'_{i,h}$	0.8517

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0055	$\Delta P_{C,s}$	0.0033
$\Delta P_{F,e}$	-0.0017	$\Delta P_{g,F}$	-0.0060

着色度 Color Code	
λ_{80}/λ_5	400/340
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	546
T_s (℃)	584
$T_{10^{14.5}}$ (℃)	508
$T_{10^{13}}$ (℃)	539
$T_{10^{7.6}}$(℃)	640
$\alpha_{-30/70℃}$(10^{-7}/K)	64
$\alpha_{100/300℃}$(10^{-7}/K)	81
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	6
CR	
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.870	0.760
2200	0.967	0.934
2000	0.987	0.974
1800	0.998	0.996
1600	0.999	0.998
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.999	0.998
650	0.999	0.998
600	0.999	0.998
550	0.999	0.998
500	0.996	0.992
480	0.994	0.988
460	0.991	0.982
440	0.987	0.975
420	0.982	0.965
400	0.971	0.942
390	0.958	0.919
380	0.936	0.877
370	0.890	0.800
360	0.800	0.650
350	0.620	0.380
340	0.280	0.080
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	668
F_A	
E (10^7Pa)	11405
G (10^7Pa)	4433
μ	0.286
B (10^{-12}/Pa)	

其他性质 Other Properties	
ρ (g/cm^3)	4.55

备注 Remarks
**:退火速率 anneal rate 25℃/h

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	6.0	6.4	7.5	7.6	8.0	9.2
-20～0	4.9	5.8	6.4	6.7	7.3	8.7
0～20	5.5	6.0	6.4	6.7	7.3	8.6
20～40	5.4	6.3	6.5	6.7	7.7	8.6
40～60	5.7	6.7	6.9	7.7	8.2	9.3
60～80	6.2	7.1	7.5	8.1	8.8	9.7
80～100						
100～120						
120～140						

D-ZLaF85A	851401	n_d = 1.851100	υ_d = 40.06	$n_F - n_C$ = 0.021248
		n_e = 1.856147	υ_e = 39.81	$n_{F'} - n_{C'}$ = 0.021508

折射率 Refractive Index**		
	λ（nm）	
$n_{2325.42}$	2325.42	1.804873
$n_{1970.09}$	1970.09	1.811574
$n_{1529.58}$	1529.58	1.819058
$n_{1060.0}$	1060.0	1.827995
n_t	1013.98	1.829144
n_s	852.11	1.834206
n_r	706.52	1.841296
n_C	656.27	1.844798
$n_{C'}$	643.85	1.845790
n_{He-Ne}	632.8	1.846720
n_D	589.29	1.850913
n_d	587.56	1.851100
n_e	546.07	1.856147
n_F	486.13	1.866046
$n_{F'}$	479.99	1.867298
n_g	435.83	1.878156
n_h	404.66	1.888485
n_i	365.01	1.906705
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
K_1	1.37428361E+00
L_1	1.05610997E+02
K_2	4.12199165E-01
L_2	3.73787374E-02
K_3	1.91320505E+00
L_3	9.75370563E-03

折射率温度系数常数 Constants of dn/dt	
D_0	5.25E-06
D_1	2.15E-08
D_2	-1.05E-10
E_0	8.21E-07
E_1	-6.33E-10
λ_{TK}(μm)	0.216

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2382	$P'_{s,t}$	0.2354
$P_{C,s}$	0.4985	$P'_{C',s}$	0.5386
$P_{d,C}$	0.2966	$P'_{d,C'}$	0.2469
$P_{e,d}$	0.2375	$P'_{e,d}$	0.2347
$P_{g,F}$	0.5699	$P'_{g,F'}$	0.5048
$P_{i,h}$	0.8575	$P'_{i,h}$	0.8471

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0017	$\Delta P_{C,s}$	0.0021
$\Delta P_{F,e}$	-0.0019	$\Delta P_{g,F}$	-0.0075

着色度 Color Code	
λ_{80}/λ_5	
λ_{70}/λ_5	380/340

热性质 Thermal Properties	
T_g (℃)	606
T_s (℃)	651
$T_{10^{14.5}}$ (℃)	556
$T_{10^{13}}$ (℃)	597
$T_{10^{7.6}}$(℃)	711
$\alpha_{-30/70℃}$(10^{-7}/K)	
$\alpha_{100/300℃}$(10^{-7}/K)	78
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	5
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.903	0.815
2200	0.976	0.953
2000	0.992	0.983
1800	0.999	0.998
1600	0.999	0.998
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.996
700	0.997	0.995
650	0.996	0.993
600	0.996	0.992
550	0.996	0.992
500	0.993	0.985
480	0.990	0.980
460	0.987	0.974
440	0.983	0.965
420	0.975	0.952
400	0.960	0.921
390	0.944	0.891
380	0.914	0.836
370	0.860	0.740
360	0.740	0.550
350	0.520	0.270
340	0.190	0.040
330		
320		
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	702
F_A	100
E (10^7Pa)	12003
G (10^7Pa)	4613
μ	0.301
B (10^{-12}/Pa)	

其他性质 Other Properties	
ρ (g/cm^3)	5.22

备注 Remarks

**:退火速率 anneal rate 25℃/h

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	4.6	5.3	5.7	6.0	6.4	7.9
-20～0	5.0	6.0	6.9	7.2	8.4	8.8
0～20	5.3	6.4	6.8	7.3	8.2	9.1
20～40	5.8	6.7	6.8	7.3	8.1	9.1
40～60	6.0	6.8	7.4	7.6	8.1	9.5
60～80	6.0	7.0	7.5	7.9	8.9	9.8
80～100						
100～120						
120～140						

CDGM

D-ZLaF85L	853405	n_d = 1.852600	υ_d = 40.53	$n_F - n_C$ = 0.021035
		n_e = 1.857598	υ_e = 40.28	$n_{F'} - n_{C'}$ = 0.021289

折射率 Refractive Index**		
	λ（nm）	
$n_{2325.42}$	2325.42	1.806838
$n_{1970.09}$	1970.09	1.813446
$n_{1529.58}$	1529.58	1.820846
$n_{1060.0}$	1060.0	1.829701
n_t	1013.98	1.830841
n_s	852.11	1.835859
n_r	706.52	1.842887
n_C	656.27	1.846357
$n_{C'}$	643.85	1.847340
n_{He-Ne}	632.8	1.848262
n_D	589.29	1.852415
n_d	587.56	1.852600
n_e	546.07	1.857598
n_F	486.13	1.867392
$n_{F'}$	479.99	1.868629
n_g	435.83	1.879352
n_h	404.66	1.889531
n_i	365.01	1.907415
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
K_1	1.71754157E+00
L_1	8.12526680E-03
K_2	6.14249641E-01
L_2	3.23072933E-02
K_3	1.49329677E+00
L_3	1.15416839E+02

折射率温度系数常数 Constants of dn/dt	
D_0	4.11E-06
D_1	1.35E-08
D_2	6.62E-12
E_0	8.93E-07
E_1	1.20E-09
λ_{TK}(μm)	0.194

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2386	$P'_{s,t}$	0.2357
$P_{C,s}$	0.4991	$P'_{C',s}$	0.5393
$P_{d,C}$	0.2968	$P'_{d,C'}$	0.2471
$P_{e,d}$	0.2376	$P'_{e,d}$	0.2348
$P_{g,F}$	0.5686	$P'_{g,F'}$	0.5037
$P_{i,h}$	0.8502	$P'_{i,h}$	0.8401

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0004	$\Delta P_{C,s}$	0.0015
$\Delta P_{F,e}$	-0.0019	$\Delta P_{g,F}$	-0.0081

着色度 Color Code	
λ_{80}/λ_5	
λ_{70}/λ_5	375/340

热性质 Thermal Properties	
T_g (℃)	620
T_s (℃)	664
$T_{10}^{14.5}$ (℃)	604
T_{10}^{13} (℃)	637
$T_{10}^{7.6}$(℃)	721
$\alpha_{-30/70℃}$(10^{-7}/K)	63
$\alpha_{100/300℃}$(10^{-7}/K)	77
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	5
CR	1
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.903	0.815
2200	0.975	0.951
2000	0.992	0.983
1800	0.998	0.997
1600	0.999	0.998
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.997	0.994
700	0.996	0.993
650	0.995	0.991
600	0.995	0.990
550	0.994	0.989
500	0.991	0.983
480	0.989	0.978
460	0.986	0.972
440	0.982	0.965
420	0.977	0.955
400	0.966	0.933
390	0.954	0.909
380	0.932	0.868
370	0.890	0.790
360	0.790	0.630
350	0.600	0.360
340	0.260	0.070
330		
320		
310		
300		
290		
280		

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	5.0	5.5	5.9	6.4	7.1	7.8
-20～0	4.9	5.6	6.1	6.5	7.3	8.2
0～20	4.9	5.7	6.3	6.7	7.4	8.5
20～40	5.0	5.9	6.6	6.9	7.8	8.8
40～60	5.1	6.1	6.9	7.0	7.9	9.1
60～80	5.4	6.8	7.4	7.6	8.8	9.1
80～100						
100～120						
120～140						

机械性质 Mechanical Properties	
H_K (10^7Pa)	677
F_A	104
E (10^7Pa)	11946
G (10^7Pa)	4618
μ	0.293
B (10^{-12}/Pa)	

其他性质 Other Properties	
ρ (g/cm^3)	5.28

备注 Remarks
**:退火速率 anneal rate 25℃/h

CDGM

D-ZLaF85LS	853406	n_d = 1.853440	υ_d = 40.56	$n_F - n_C$ = 0.021043
		n_e = 1.858439	υ_e = 40.31	$n_{F'} - n_{C'}$ = 0.021298

折射率 Refractive Index**		
	λ（nm）	
$n_{2325.42}$	2325.42	1.807637
$n_{1970.09}$	1970.09	1.814263
$n_{1529.58}$	1529.58	1.821675
$n_{1060.0}$	1060.0	1.830534
n_t	1013.98	1.831674
n_s	852.11	1.836694
n_r	706.52	1.843723
n_C	656.27	1.847195
$n_{C'}$	643.85	1.848178
n_{He-Ne}	632.8	1.849100
n_D	589.29	1.853255
n_d	587.56	1.853440
n_e	546.07	1.858439
n_F	486.13	1.868238
$n_{F'}$	479.99	1.869476
n_g	435.83	1.880203
n_h	404.66	1.890386
n_i	365.01	1.908277
$n_{313.18}$	313.18	
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
K_1	1.70152719E+00
L_1	7.96295658E-03
K_2	6.33298236E-01
L_2	3.20099725E-02
K_3	1.43191921E+00
L_3	1.10679270E+02

折射率温度系数常数 Constants of dn/dt	
D_0	
D_1	
D_2	
E_0	
E_1	
λ_{TK}(μm)	

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2386	$P'_{s,t}$	0.2357
$P_{C,s}$	0.4990	$P'_{C',s}$	0.5392
$P_{d,C}$	0.2968	$P'_{d,C'}$	0.2471
$P_{e,d}$	0.2376	$P'_{e,d}$	0.2347
$P_{g,F}$	0.5686	$P'_{g,F'}$	0.5037
$P_{i,h}$	0.8502	$P'_{i,h}$	0.8400

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0002	$\Delta P_{C,s}$	0.0014
$\Delta P_{F,e}$	-0.0018	$\Delta P_{g,F}$	-0.0080

着色度 Color Code	
λ_{80}/λ_5	
λ_{70}/λ_5	375/340

热性质 Thermal Properties	
T_g (℃)	622
T_s (℃)	666
$T_{10^{14.5}}$ (℃)	579
$T_{10^{13}}$ (℃)	610
$T_{10^{7.6}}$(℃)	723
$\alpha_{-30/70℃}$(10^{-7}/K)	
$\alpha_{100/300℃}$(10^{-7}/K)	81
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	2
CR	
RC(S)	1
RA(S)	2

内部透过率 Internal Transmittance τ		
λ（nm）	τ (5mm)	τ (10mm)
2400	0.904	0.817
2200	0.974	0.949
2000	0.989	0.978
1800	0.997	0.994
1600	0.999	0.998
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.998	0.997
650	0.998	0.996
600	0.998	0.996
550	0.997	0.995
500	0.995	0.991
480	0.993	0.987
460	0.991	0.983
440	0.987	0.974
420	0.983	0.966
400	0.972	0.944
390	0.960	0.922
380	0.938	0.880
370	0.896	0.803
360	0.810	0.656
350	0.626	0.392
340	0.303	0.092
330		
320		
310		
300		
290		
280		

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40						
-40～-20	4.7	5.5	6.2	6.3	7.2	7.9
-20～0	5.0	5.7	6.2	6.4	7.2	8.4
0～20	5.2	6.0	6.3	6.7	7.3	8.8
20～40	5.5	6.5	7.0	7.2	8.2	9.3
40～60	5.7	6.7	7.2	7.6	8.6	9.4
60～80	5.7	7.0	7.3	7.6	8.6	9.5
80～100						
100～120						
120～140						

机械性质 Mechanical Properties	
H_K (10^7Pa)	648
F_A	100
E (10^7Pa)	12077
G (10^7Pa)	4623
μ	0.306
B (10^{-12}/Pa)	1.71

其他性质 Other Properties	
ρ (g/cm^3)	5.29

备注 Remarks

**:退火速率 anneal rate 25℃/h

CDGM

H-QK3LGTi	487704	n_d = 1.487490	υ_d = 70.44	$n_F - n_C$ = 0.006921
		n_e = 1.489143	υ_e = 70.26	$n_{F'} - n_{C'}$ = 0.006962

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	1.461770
$n_{1970.09}$	1970.09	1.467372
$n_{1529.58}$	1529.58	1.473126
$n_{1060.0}$	1060.0	1.478559
n_t	1013.98	1.479127
n_s	852.11	1.481377
n_r	706.52	1.484102
n_C	656.27	1.485347
$n_{C'}$	643.85	1.485692
n_{He-Ne}	632.8	1.486012
n_D	589.29	1.487428
n_d	587.56	1.487490
n_e	546.07	1.489143
n_F	486.13	1.492268
$n_{F'}$	479.99	1.492654
n_g	435.83	1.495931
n_h	404.66	1.498939
n_i	365.01	1.504011
$n_{313.18}$	313.18	1.514137
$n_{302.15}$	302.15	1.517093

色散公式常数 Constants of Dispersion Formula

K_1	6.01737491E-01
L_1	1.25749740E-02
K_2	8.58737004E-01
L_2	9.23325663E+01
K_3	5.86761501E-01
L_3	2.68750900E-03

折射率温度系数常数 Constants of dn/dt

D_0	-9.26E-06
D_1	1.71E-08
D_2	-1.54E-11
E_0	3.26E-07
E_1	5.95E-10
λ_{TK}(μm)	0.187

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.3251	$P'_{s,t}$	0.3232
$P_{C,s}$	0.5736	$P'_{C',s}$	0.6198
$P_{d,C}$	0.3096	$P'_{d,C'}$	0.2583
$P_{e,d}$	0.2388	$P'_{e,d}$	0.2374
$P_{g,F}$	0.5293	$P'_{g,F'}$	0.4707
$P_{i,h}$	0.7328	$P'_{i,h}$	0.7285

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	0.0205	$\Delta P_{C,s}$	0.0053
$\Delta P_{F,e}$	0.0002	$\Delta P_{g,F}$	0.0035

着色度 Color Code

λ_{80}/λ_5	300/270
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	475
T_s (℃)	569
$T_{10^{14.5}}$ (℃)	432
$T_{10^{13}}$ (℃)	466
$T_{10^{7.6}}$(℃)	674
$\alpha_{-30/70℃}$(10^{-7}/K)	92
$\alpha_{100/300℃}$(10^{-7}/K)	102
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	2
D_A	4
CR	2
RC(S)	1
RA(S)	3

内部透过率 Internal Transmittance τ

λ（nm）	τ (10mm)	τ (25mm)
2400	0.860	0.686
2200	0.900	0.768
2000	0.981	0.953
1800	0.990	0.975
1600	0.993	0.983
1400	0.985	0.963
1200	0.998	0.995
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.998	0.996
700	0.998	0.995
650	0.998	0.995
600	0.998	0.995
550	0.998	0.995
500	0.998	0.995
480	0.998	0.995
460	0.998	0.996
440	0.998	0.996
420	0.998	0.996
400	0.998	0.996
390	0.998	0.996
380	0.998	0.996
370	0.998	0.996
365	0.998	0.996
360	0.998	0.996
350	0.997	0.993
340	0.995	0.986
330	0.992	0.980
320	0.978	0.946
310	0.946	0.870
300	0.858	0.682
290	0.658	0.351
280	0.326	0.061

机械性质 Mechanical Properties

H_K (10^7Pa)	520
F_A	93
E (10^7Pa)	6230
G (10^7Pa)	2540
μ	0.227
B (10^{-12}/Pa)	2.80

其他性质 Other Properties

ρ (g/cm^3)	2.43

备注 Remarks

i 线玻璃

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	-2.6	-2.3	-2.2	-2.2	-2.0	-1.9
-40～-20	-2.5	-2.2	-2.1	-2.1	-2.0	-1.8
-20～0	-2.3	-2.1	-2.0	-2.0	-1.9	-1.7
0～20	-2.1	-2.0	-2.0	-1.9	-1.8	-1.6
20～40	-2.1	-1.9	-1.8	-1.8	-1.6	-1.5
40～60	-2.1	-1.9	-1.7	-1.7	-1.5	-1.4
60～80	-1.9	-1.9	-1.7	-1.6	-1.4	-1.1
80～100	-1.7	-1.6	-1.4	-1.3	-1.1	-0.8
100～120	-1.7	-1.3	-1.2	-1.2	-0.9	-0.7
120～140	-1.5	-1.1	-1.1	-1.1	-0.8	-0.6

CDGM

H-K90GTi	519633	n_d = 1.519480	υ_d = 63.29	$n_F - n_C$ = 0.008208
		n_e = 1.521438	υ_e = 63.07	$n_{F'} - n_{C'}$ = 0.008267

折射率 Refractive Index

	λ（nm）	
$n_{2325.42}$	2325.42	1.492096
$n_{1970.09}$	1970.09	1.497707
$n_{1529.58}$	1529.58	1.503547
$n_{1060.0}$	1060.0	1.509262
n_t	1013.98	1.509881
n_s	852.11	1.512384
n_r	706.52	1.515508
n_C	656.27	1.516959
$n_{C'}$	643.85	1.517363
n_{He-Ne}	632.8	1.517739
n_D	589.29	1.519407
n_d	587.56	1.519480
n_e	546.07	1.521438
n_F	486.13	1.525167
$n_{F'}$	479.99	1.525630
n_g	435.83	1.529569
n_h	404.66	1.533205
n_i	365.01	1.539377
$n_{313.18}$	313.18	1.551871
$n_{302.15}$	302.15	1.555567

色散公式常数 Constants of Dispersion Formula

K_1	1.15678766E+00
L_1	7.00647800E-03
K_2	9.60974772E-01
L_2	1.00981876E+02
K_3	1.21868843E-01
L_3	2.49553890E-02

折射率温度系数常数 Constants of dn/dt

D_0	-7.71E-07
D_1	1.65E-08
D_2	-4.14E-11
E_0	4.54E-07
E_1	4.64E-10
λ_{TK}(μm)	0.177

相对部分色散 Relative Partial Dispersions

$P_{s,t}$	0.3049	$P'_{s,t}$	0.3028
$P_{C,s}$	0.5574	$P'_{C',s}$	0.6023
$P_{d,C}$	0.3071	$P'_{d,C'}$	0.2561
$P_{e,d}$	0.2385	$P'_{e,d}$	0.2368
$P_{g,F}$	0.5363	$P'_{g,F'}$	0.4765
$P_{i,h}$	0.7519	$P'_{i,h}$	0.7466

异常色散 Abnormal Dispersions

$\Delta P_{C,t}$	0.0178	$\Delta P_{C,s}$	0.0060
$\Delta P_{F,e}$	-0.0008	$\Delta P_{g,F}$	-0.0016

着色度 Color Code

λ_{80}/λ_5	310/285
λ_{70}/λ_5	

热性质 Thermal Properties

T_g (℃)	574
T_s (℃)	635
$T_{10^{14.5}}$ (℃)	508
$T_{10^{13}}$ (℃)	550
$T_{10^{7.6}}$(℃)	720
$\alpha_{-30/70℃}$(10^{-7}/K)	78
$\alpha_{100/300℃}$(10^{-7}/K)	94
λ[W/(m·K)]	

化学性质 Chemical Properties

	Grade
D_W	3
D_A	1
CR	1
RC(S)	1
RA(S)	1

内部透过率 Internal Transmittance τ

λ（nm）	τ (10mm)	τ (25mm)
2400	0.777	0.532
2200	0.836	0.639
2000	0.931	0.837
1800	0.969	0.925
1600	0.991	0.977
1400	0.984	0.960
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.997
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.999	0.998
650	0.999	0.998
600	0.999	0.999
550	0.999	0.998
500	0.999	0.998
480	0.999	0.998
460	0.999	0.998
440	0.999	0.998
420	0.999	0.998
400	0.999	0.998
390	0.999	0.998
380	0.999	0.997
370	0.999	0.997
365	0.998	0.995
360	0.997	0.992
350	0.994	0.985
340	0.991	0.977
330	0.975	0.938
320	0.942	0.862
310	0.850	0.665
300	0.637	0.324
290	0.196	0.017
280		

机械性质 Mechanical Properties

H_K (10^7Pa)	544
F_A	98
E (10^7Pa)	8022
G (10^7Pa)	3304
μ	0.214
B (10^{-12}/Pa)	

其他性质 Other Properties

ρ (g/cm^3)	2.52

备注 Remarks

i 线玻璃

折射率温度系数 Temperature Coefficients of Refractive Index

温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	1.0	1.4	1.5	1.5	1.8	2.0
-40～-20	1.1	1.4	1.5	1.6	1.8	2.0
-20～0	1.1	1.4	1.5	1.7	1.9	2.2
0～20	1.1	1.4	1.5	1.8	2.0	2.2
20～40	1.3	1.6	1.7	2.0	2.2	2.5
40～60	1.4	1.8	1.9	2.1	2.2	2.6
60～80	1.5	1.8	2.0	2.1	2.4	2.7
80～100	1.5	1.9	2.0	2.1	2.4	2.7
100～120	1.5	1.9	2.0	2.1	2.5	2.8
120～140	1.6	2.0	2.2	2.3	2.6	3.0

QF50GTi	581409	n_d = 1.581440	υ_d = 40.89	$n_F - n_C$ = 0.014221
		n_e = 1.584815	υ_e = 40.61	$n_{F'} - n_{C'}$ = 0.014400

折射率 Refractive Index		
	λ（nm）	
$n_{2325.42}$	2325.42	1.549465
$n_{1970.09}$	1970.09	1.554326
$n_{1529.58}$	1529.58	1.559692
$n_{1060.0}$	1060.0	1.565921
n_t	1013.98	1.566706
n_s	852.11	1.570133
n_r	706.52	1.574888
n_C	656.27	1.577230
$n_{C'}$	643.85	1.577892
n_{He-Ne}	632.8	1.578514
n_D	589.29	1.581315
n_d	587.56	1.581440
n_e	546.07	1.584815
n_F	486.13	1.591451
$n_{F'}$	479.99	1.592292
n_g	435.83	1.599617
n_h	404.66	1.606642
n_i	365.01	1.619212
$n_{313.18}$	313.18	1.647936
$n_{302.15}$	302.15	

色散公式常数 Constants of Dispersion Formula	
K_1	1.31145759E+00
L_1	9.88576985E-03
K_2	8.40047425E-01
L_2	1.02880258E+02
K_3	1.32407269E-01
L_3	4.77527930E-02

折射率温度系数常数 Constants of dn/dt	
D_0	-2.74E-06
D_1	1.64E-08
D_2	-5.12E-11
E_0	8.26E-07
E_1	4.87E-10
λ_{TK}(μm)	0.234

相对部分色散 Relative Partial Dispersions			
$P_{s,t}$	0.2410	$P'_{s,t}$	0.2380
$P_{C,s}$	0.4991	$P'_{C',s}$	0.5388
$P_{d,C}$	0.2960	$P'_{d,C'}$	0.2464
$P_{e,d}$	0.2373	$P'_{e,d}$	0.2344
$P_{g,F}$	0.5742	$P'_{g,F'}$	0.5087
$P_{i,h}$	0.8839	$P'_{i,h}$	0.8729

异常色散 Abnormal Dispersions			
$\Delta P_{C,t}$	0.0011	$\Delta P_{C,s}$	0.0007
$\Delta P_{F,e}$	-0.0006	$\Delta P_{g,F}$	-0.0018

着色度 Color Code	
λ_{80}/λ_5	335/310
λ_{70}/λ_5	

热性质 Thermal Properties	
T_g (℃)	422
T_s (℃)	480
$T_{10}^{14.5}$ (℃)	366
T_{10}^{13} (℃)	406
$T_{10}^{7.6}$(℃)	584
$\alpha_{-30/70℃}$(10^{-7}/K)	90
$\alpha_{100/300℃}$(10^{-7}/K)	111
λ[W/(m·K)]	

化学性质 Chemical Properties	
	Grade
D_W	1
D_A	1
CR	2
RC(S)	3
RA(S)	1

内部透过率 Internal Transmittance τ		
λ（nm）	τ (10mm)	τ (25mm)
2400	0.785	0.546
2200	0.844	0.655
2000	0.921	0.813
1800	0.965	0.915
1600	0.992	0.981
1400	0.996	0.991
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.999	0.998
650	0.999	0.998
600	0.999	0.998
550	0.999	0.998
500	0.999	0.998
480	0.999	0.997
460	0.998	0.996
440	0.998	0.995
420	0.998	0.995
400	0.998	0.995
390	0.998	0.995
380	0.997	0.993
370	0.994	0.985
365	0.990	0.975
360	0.987	0.968
350	0.970	0.927
340	0.927	0.827
330	0.789	0.553
320	0.404	0.104
310		
300		
290		
280		

机械性质 Mechanical Properties	
H_K (10^7Pa)	407
F_A	89
E (10^7Pa)	5980
G (10^7Pa)	2444
μ	0.224
B (10^{-12}/Pa)	

其他性质 Other Properties	
ρ (g/cm^3)	3.23

备注 Remarks
i线玻璃

折射率温度系数 Temperature Coefficients of Refractive Index						
温度范围（℃） Range of Temperature	dn/dt relative(10^{-6}/℃)					
	t	C′	d	e	F′	g
-60～-40	0.1	0.8	1.0	1.3	2.0	2.6
-40～-20	0.2	0.9	1.1	1.4	2.1	2.7
-20～0	0.3	1.1	1.3	1.6	2.1	2.8
0～20	0.6	1.2	1.5	1.8	2.3	3.0
20～40	0.7	1.3	1.6	1.9	2.4	3.1
40～60	0.8	1.4	1.7	2.0	2.7	3.5
60～80	0.8	1.6	1.8	2.1	2.9	3.6
80～100	0.8	1.6	1.8	2.1	2.9	3.6
100～120	0.8	1.6	1.8	2.1	2.9	3.6
120～140	0.8	1.6	1.9	2.1	3.0	3.7

202108 修订履历

1.新增 7 个牌号

H-F3、H-F5、H-ZF73、H-ZF73GT、H-ZLaF73、D-LaK52、QF50GTi

2.低软化点光学玻璃的折射率从以退火速率为 4℃/h 提供基准值切换为以退火速率为 25℃/h 提供基准值。

3. 143 个牌号色散公式采用 sellmeier 1 且拓展了近红外及近紫外波段折射率：H-FK61、H-FK61B、H-FK71、H-FK95N、H-QK3L、H-K9L、H-K9LGT、H-K9L*、H-K9LA、H-K10、H-ZPK5、H-ZPK7、H-BaK6、H-BaK7、H-BaK7GT、H-ZK3、H-ZK4、H-ZK6、H-ZK9B、H-ZK10L、H-ZK11、H-ZK20、H-ZK50、H-ZK50GT、H-LaK2A、H-LaK5A、H-LaK7A、H-LaK8B、H-LaK10、H-LaK51A、H-LaK52、H-LaK53B、H-LaK54、H-QF3、H-QF14、QF50、H-F1、H-F3、H-F5、H-F51、H-BaF4、H-BaF7、H-BaF8、H-ZBaF4、H-ZBaF5、H-ZBaF16、H-ZBaF21、H-ZBaF52、H-ZF1A、H-ZF2、H-ZF3、H-ZF4A、H-ZF4AGT、H-ZF6、H-ZF7LA、H-ZF7LAGT、H-ZF10、H-ZF11、H-ZF12、H-ZF13、H-ZF13GT、H-ZF39、H-ZF52、H-ZF52GT、H-ZF52TT、H-ZF62、H-ZF62GT、H-ZF71、H-ZF71GT、H-ZF72A、H-ZF72AGT、H-ZF73、H-ZF73GT、H-ZF88、H-ZF88GT、H-LaF6LA、H-LaF10LA、H-LaF50B、H-LaF52、H-LaF55、H-ZLaF2A、H-ZLaF4LA、H-ZLaF4LB、H-ZLaF50E、H-ZLaF52A、H-ZLaF53B、H-ZLaF53BGT、H-ZLaF55D、H-ZLaF66、H-ZLaF66GT、H-ZLaF68C、H-ZLaF68N、H-ZLaF69、H-ZLaF69A、H-ZLaF71、H-ZLaF73、H-ZLaF75A、H-ZLaF75B、H-ZLaF76、H-ZLaF76A、H-ZLaF78B、H-ZLaF90、H-ZLaF92、H-TF3L、H-TF5、D-FK61、D-FK61A、D-FK95、D-QK3L 、D-K9、D-K9GT、D-K59、D-PK3、D-ZPK1A、

D-ZPK3、D-ZPK5、D-ZPK7、D-ZK2、D-ZK2L、D-ZK3、D-ZK3L、D-ZK79、D-LaK5、D-LaK6、D-LaK52、D-LaK70、D-ZF10、D-ZF93、D-LaF50、D-LaF050、D-LaF53、D-LaF79、D-ZLaF50、D-ZLaF52LA、D-ZLaF61、D-ZLaF67、D-ZLaF81、D-ZLaF85A、D-ZLaF85L、D-ZLaF85LS、H-QK3LGTi、H-K90GTi、QF50GTi

4. 100 个牌号折射率温度系数的温度范围从(-40~+80)℃拓展至(-60~+140)℃：H-FK61、H-FK61B、H-FK71、H-FK95N、H-QK3L、H-K9L、H-K9LGT、H-K9L*、H-K9LA、H-ZPK5、H-ZPK7、H-BaK7、H-BaK7GT、H-ZK6、H-ZK9B、H-ZK10L、H-ZK50、H-ZK50GT、H-LaK2A、H-LaK5A、H-LaK7A、H-LaK8B、H-LaK10、H-LaK51A、H-LaK53B、H-LaK54、QF50、H-F3、H-F5、H-ZBaF5、H-ZBaF16、H-ZBaF21、H-ZBaF52、H-ZF1A、H-ZF2、H-ZF3、H-ZF4A、H-ZF4AGT、H-ZF7LA、H-ZF7LAGT、H-ZF11、H-ZF13、H-ZF13GT、H-ZF39、H-ZF52、H-ZF52GT、H-ZF52TT、H-ZF62、H-ZF62GT、H-ZF71、H-ZF71GT、H-ZF72A、H-ZF72AGT、H-ZF73、H-ZF73GT、H-ZF88、H-ZF88GT、H-LaF50B、H-LaF55、H-ZLaF2A、H-ZLaF4LA、H-ZLaF4LB、H-ZLaF50E、H-ZLaF52A、H-ZLaF53B、H-ZLaF53BGT、H-ZLaF55D、H-ZLaF68C、H-ZLaF68N、H-ZLaF69、H-ZLaF69A、H-ZLaF71、H-ZLaF73、H-ZLaF75B、H-ZLaF76A、H-ZLaF78B、H-ZLaF90、H-ZLaF92、H-TF3L、H-TF5、D-FK61A、D-FK95、D-QK3L、D-K9、D-K9GT、D-ZPK1A、D-ZPK3、D-ZPK5、D-ZPK7、D-ZK2L、D-LaK6、D-LaK52、D-LaK70、D-LaF50、D-LaF050、D-ZLaF52LA、D-ZLaF61、H-QK3LGTi、H-K90GTi、QF50GTi