※レンズ成形難易度が特に高い硝材です。

Optical Glass for Precision Molding　　Moldability of this glass material is classified as "especially difficult".　　K-PSFn3

839239 K-PSFn3	nd	1.83917	νd	23.9	nF-nC	0.03517
	ne	1.84746	νe	23.7	nF'-nC'	0.03581

屈 折 率 Refractive Indices

n1548	1548.1	1.79230
n1309	1308.5	1.79741
nt	1014.0	1.80579
nA'	768.2	1.81846
nr	706.5	1.82369
nC	656.3	1.82915
nC'	643.9	1.83069
nD	589.3	1.83888
nd	587.6	1.83917
ne	546.1	1.84746
nF	486.1	1.86432
nF'	480.0	1.86650
ng	435.8	1.88619
nh	404.7	1.90616
ni	365.0	

分散式の常数 Constants of Dispersion Formula

A0	3.2268914
A1	$-1.4590158 \times 10^{-2}$
A2	4.7763869×10^{-2}
A3	2.7173637×10^{-3}
A4	$-9.5689164 \times 10^{-5}$
A5	2.7097845×10^{-5}

部分分散および部分分散比 Partial Dispersions and Relative Partial Dispersions

nC-nt	nC-nA'	nd-nC	ne-nC
0.02336	0.01069	0.01002	0.01831
θ C,t	θ C,A'	θ d,C	θ e,C
0.664	0.304	0.285	0.521
ng-nd	ng-nF	nh-ng	ni-ng
0.04702	0.02187	0.01997	
θ g,d	θ g,F(Δ)	θ h,g	θ i,g
1.337	0.622 (0.0180)	0.568	
nC'-nt	ne-nC'	nF'-ne	ni-nF'
0.02490	0.01677	0.01904	
θ 'C',t	θ 'e,C'	θ 'F',e	θ 'i,F'
0.695	0.468	0.532	

機械的性質 Mechanical Properties

ヌープ硬さ Hk Knoop Hardness	409 (4)
ビッカース硬さ Hv Vickers Hardness	397
摩耗度 Ha Abrasion	330
ヤング率 E ($\times 10^8$ N·m^{-2}) Young's Modulus	883
剛性率 G ($\times 10^8$ N·m^{-2}) Modulus of Rigidity	351
ポアソン比 σ Poisson Ratio	0.256

熱的性質 Thermal Properties

転移点 Tg (℃) Transformation Point	477
屈伏点 At (℃) Yielding Point	515
線膨張係数 α ($\times 10^{-7}$℃$^{-1}$) Thermal Expansion	
(−30〜+70℃)	93
(+100〜+300℃)	118
熱伝導率 λ (W·m^{-1}·K^{-1}) Thermal Conductivity	0.812
比熱 Cp (J·kg^{-1}·K^{-1}) Specific Heat	598

化学的性質 Chemical Properties

耐水性(粉末法) RW Water Resistance	1
耐酸性(粉末法) RA Acid Resistance	1
耐久性(表面法) DW Chemical Durability	1
備考 Remarks	Solarization

その他 Other Properties

泡 B Bubbles	
着色度 C Coloration	(43)/38
比重 S.g Specific Gravity	3.90
生産頻度 PF Production frequency	C

内部透過率 τ Internal Transmittance

λ(nm)	3mm	10mm
270		
280		
290		
300		
310		
320		
330		
340		
350		
360	0.097	
370	0.261	0.011
380	0.546	0.133
390	0.744	0.374
400	0.851	0.585
420	0.939	0.810
440	0.968	0.899
460	0.980	0.935
480	0.986	0.956
500	0.990	0.968
550	0.996	0.988
600	0.998	0.995
650	0.998	0.995
700	0.999	0.996
800	0.998	0.996
1060	0.999	0.998
1500	0.999	0.997
2000	0.998	0.993

dn/dTの分散常数 Constants of Dispersion dn/dT abs.

D0	-8.51×10^{-6}
D1	1.46×10^{-8}
D2	-1.46×10^{-10}
E0	1.13×10^{-6}
E1	1.15×10^{-9}
λTK (μm)	0.294

屈折率の温度係数 Temperature Coefficients of Refractive Index

	(dn/dT)rel. ($\times 10^{-6}$℃$^{-1}$)			(dn/dT)abs. ($\times 10^{-6}$℃$^{-1}$)		
(℃)	1548.1	d	g	1548.1	d	g
−40/−20	−4.2	−2.1	1.7	−6.6	−4.6	−0.9
0/+20	−3.4	−1.1	3.2	−5.2	−3.0	1.3
+40/+60	−3.3	−0.8	3.9	−4.6	−2.2	2.4

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