

※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<br>K-PSFn3 | nd | 1.83917 | $\nu d$ | 23.9 | nF-nC   | 0.03517 |
|                   | ne | 1.84746 | $\nu e$ | 23.7 | nF'-nC' | 0.03581 |

| 屈折率<br>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<br>Constants of Dispersion Formula |                             |
|-------------------------------------------|-----------------------------|
| A0                                        | 3.2268914                   |
| A1                                        | $-1.4590158 \times 10^{-2}$ |
| A2                                        | $4.7763869 \times 10^{-2}$  |
| A3                                        | $2.7173637 \times 10^{-3}$  |
| A4                                        | $-9.5689164 \times 10^{-5}$ |
| A5                                        | $2.7097845 \times 10^{-5}$  |

| dn/dTの分散常数<br>Constants of Dispersion dn/dT abs. |                         |
|--------------------------------------------------|-------------------------|
| D0                                               | $-8.51 \times 10^{-6}$  |
| D1                                               | $1.46 \times 10^{-8}$   |
| D2                                               | $-1.46 \times 10^{-10}$ |
| E0                                               | $1.13 \times 10^{-6}$   |
| E1                                               | $1.15 \times 10^{-9}$   |
| $\lambda_{TK} (\mu m)$                           | 0.294                   |

| 部分分散および部分分散比<br>Partial Dispersions and Relative Partial Dispersions |                        |                  |                  |
|----------------------------------------------------------------------|------------------------|------------------|------------------|
| nC-nt                                                                | nC-nA'                 | nd-nC            | ne-nC            |
| 0.02336                                                              | 0.01069                | 0.01002          | 0.01831          |
| $\theta_{C,t}$                                                       | $\theta_{C,A'}$        | $\theta_{d,C}$   | $\theta_{e,C}$   |
| 0.664                                                                | 0.304                  | 0.285            | 0.521            |
| ng-nd                                                                | ng-nF                  | nh-ng            | ni-ng            |
| 0.04702                                                              | 0.02187                | 0.01997          |                  |
| $\theta_{g,d}$                                                       | $\theta_{g,F(\Delta)}$ | $\theta_{h,g}$   | $\theta_{i,g}$   |
| 1.337                                                                | 0.622 (0.0180)         | 0.568            |                  |
| nC'-nt                                                               | ne-nC'                 | nF'-ne           | ni-nF'           |
| 0.02490                                                              | 0.01677                | 0.01904          |                  |
| $\theta'_{C,t}$                                                      | $\theta'_{e,C'}$       | $\theta'_{F',e}$ | $\theta'_{i,F'}$ |
| 0.695                                                                | 0.468                  | 0.532            |                  |

| 機械的性質<br>Mechanical Properties                                                | 熱的性質<br>Thermal Properties                                                                  |
|-------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| ヌープ硬さ Hk<br>Knoop Hardness 409 (4)                                            | 転移点 Tg (°C)<br>Transformation Point 477                                                     |
| ビッカース硬さ Hv<br>Vickers Hardness 397                                            | 屈伏点 At (°C)<br>Yielding Point 515                                                           |
| 摩耗度 Ha<br>Abrasion 330                                                        | 線膨張係数 $\alpha (\times 10^{-7} \text{°C}^{-1})$<br>Thermal Expansion 93                      |
| ヤング率 E ( $\times 10^8 \text{N}\cdot\text{m}^{-2}$ )<br>Young's Modulus 883    | (-30~+70°C) 93<br>(+100~+300°C) 118                                                         |
| 剛性率 G ( $\times 10^8 \text{N}\cdot\text{m}^{-2}$ )<br>Modulus of Rigidity 351 | 熱伝導率 $\lambda (\text{W}\cdot\text{m}^{-1}\cdot\text{K}^{-1})$<br>Thermal Conductivity 0.812 |
| ポアソン比 $\sigma$<br>Poisson Ratio 0.256                                         | 比熱 Cp ( $\text{J}\cdot\text{kg}^{-1}\cdot\text{K}^{-1}$ )<br>Specific Heat 598              |

| 化学的性質<br>Chemical Properties         | その他<br>Other Properties           |
|--------------------------------------|-----------------------------------|
| 耐水性(粉末法) RW<br>Water Resistance 1    | 泡 B<br>Bubbles                    |
| 耐酸性(粉末法) RA<br>Acid Resistance 1     | 着色度 C<br>Coloration (43)/38       |
| 耐久性(表面法) DW<br>Chemical Durability 1 | 比重 S.g<br>Specific Gravity 3.90   |
| 備考 Remarks<br>Solarization           | 生産頻度 PF<br>Production frequency B |

| 内部透過率 $\tau$<br>Internal Transmittance |                   |                   |
|----------------------------------------|-------------------|-------------------|
| $\lambda(\text{nm})$                   | 3mm               | 10mm              |
| 270                                    |                   |                   |
| 280                                    |                   |                   |
| 290                                    |                   |                   |
| 300                                    |                   |                   |
| 310                                    |                   |                   |
| 320                                    |                   |                   |
| 330                                    |                   |                   |
| 340                                    |                   |                   |
| 350                                    |                   |                   |
| 360                                    | 0.09 <sub>6</sub> |                   |
| 370                                    | 0.24 <sub>8</sub> | 0.01 <sub>0</sub> |
| 380                                    | 0.54 <sub>3</sub> | 0.13 <sub>0</sub> |
| 390                                    | 0.74 <sub>4</sub> | 0.37 <sub>3</sub> |
| 400                                    | 0.85 <sub>2</sub> | 0.58 <sub>5</sub> |
| 420                                    | 0.93 <sub>9</sub> | 0.81 <sub>0</sub> |
| 440                                    | 0.96 <sub>8</sub> | 0.89 <sub>8</sub> |
| 460                                    | 0.98 <sub>0</sub> | 0.93 <sub>6</sub> |
| 480                                    | 0.98 <sub>6</sub> | 0.95 <sub>4</sub> |
| 500                                    | 0.99 <sub>0</sub> | 0.96 <sub>7</sub> |
| 550                                    | 0.99 <sub>7</sub> | 0.99 <sub>1</sub> |
| 600                                    | 0.99 <sub>8</sub> | 0.99 <sub>7</sub> |
| 650                                    | 0.99 <sub>8</sub> | 0.99 <sub>7</sub> |
| 700                                    | 0.99 <sub>8</sub> | 0.99 <sub>7</sub> |
| 800                                    | 0.99 <sub>8</sub> | 0.99 <sub>7</sub> |
| 1060                                   | 0.99 <sub>8</sub> | 0.99 <sub>8</sub> |
| 1500                                   | 0.99 <sub>8</sub> | 0.99 <sub>8</sub> |
| 2000                                   | 0.99 <sub>7</sub> | 0.99 <sub>1</sub> |

| 屈折率の温度係数<br>Temperature Coefficients of Refractive Index |                                                 |      |     |                                                 |      |      |
|----------------------------------------------------------|-------------------------------------------------|------|-----|-------------------------------------------------|------|------|
| (°C)                                                     | (dn/dT)rel. ( $\times 10^{-6} \text{°C}^{-1}$ ) |      |     | (dn/dT)abs. ( $\times 10^{-6} \text{°C}^{-1}$ ) |      |      |
|                                                          | 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  |