# Data Sheet

SCHOTT

## SF6
## 805254.518

| | | |
|---|---|---|
| $n_d = 1.80518$ | $\nu_d = 25.43$ | $n_F - n_C = 0.031660$ |
| $n_e = 1.81265$ | $\nu_e = 25.24$ | $n_{F'} - n_{C'} = 0.032201$ |

### Refractive Indices

| | λ [nm] | |
|---|---|---|
| $n_{2325.4}$ | 2325.4 | 1.75302 |
| $n_{1970.1}$ | 1970.1 | 1.75813 |
| $n_{1529.6}$ | 1529.6 | 1.76444 |
| $n_{1060.0}$ | 1060.0 | 1.77380 |
| $n_t$ | 1014.0 | 1.77517 |
| $n_s$ | 852.1 | 1.78157 |
| $n_r$ | 706.5 | 1.79117 |
| $n_C$ | 656.3 | 1.79609 |
| $n_{C'}$ | 643.8 | 1.79750 |
| $n_{632.8}$ | 632.8 | 1.79884 |
| $n_D$ | 589.3 | 1.80491 |
| $n_d$ | 587.6 | 1.80518 |
| $n_e$ | 546.1 | 1.81265 |
| $n_F$ | 486.1 | 1.82775 |
| $n_{F'}$ | 480.0 | 1.82970 |
| $n_g$ | 435.8 | 1.84707 |
| $n_h$ | 404.7 | 1.86436 |
| $n_i$ | 365.0 | 1.89703 |
| $n_{334.1}$ | 334.1 | |
| $n_{312.6}$ | 312.6 | |
| $n_{296.7}$ | 296.7 | |
| $n_{280.4}$ | 280.4 | |
| $n_{248.3}$ | 248.3 | |

### Constants of Dispersion Formula

| | |
|---|---|
| $B_1$ | 1.72448482 |
| $B_2$ | 0.390104889 |
| $B_3$ | 1.04572858 |
| $C_1$ | 0.0134871947 |
| $C_2$ | 0.0569318095 |
| $C_3$ | 118.557185 |

### Constants of Dispersion dn/dT

| | |
|---|---|
| $D_0$ | $6.69 \cdot 10^{-6}$ |
| $D_1$ | $1.78 \cdot 10^{-8}$ |
| $D_2$ | $-3.36 \cdot 10^{-11}$ |
| $E_0$ | $1.77 \cdot 10^{-6}$ |
| $E_1$ | $1.70 \cdot 10^{-9}$ |
| $\lambda_{TK}$ [µm] | 0.269 |

### Internal Transmittance $\tau_i$

| λ [nm] | $\tau_i$ (10mm) | $\tau_i$ (25mm) |
|---|---|---|
| **2500** | 0.887 | 0.740 |
| **2325** | 0.910 | 0.790 |
| **1970** | 0.971 | 0.930 |
| **1530** | 0.996 | 0.991 |
| **1060** | 0.999 | 0.999 |
| **700** | 0.999 | 0.996 |
| **660** | 0.998 | 0.996 |
| **620** | 0.998 | 0.995 |
| **580** | 0.999 | 0.996 |
| **546** | 0.998 | 0.996 |
| **500** | 0.996 | 0.991 |
| **460** | 0.991 | 0.978 |
| **436** | 0.982 | 0.955 |
| **420** | 0.967 | 0.920 |
| **405** | 0.933 | 0.840 |
| **400** | 0.915 | 0.800 |
| **390** | 0.847 | 0.660 |
| **380** | 0.720 | 0.440 |
| **370** | 0.442 | 0.130 |
| **365** | 0.246 | 0.030 |
| **350** | | |
| **334** | | |
| **320** | | |
| **310** | | |
| **300** | | |
| **290** | | |
| **280** | | |
| **270** | | |
| **260** | | |
| **250** | | |
| | | |
| | | |

### Color Code

| | |
|---|---|
| $\lambda_{80}/\lambda_5$ | 42/36 |
| (*= $\lambda_{70}/\lambda_5$) | |

### Remarks

lead containing glass type

### Relative Partial Dispersion

| | |
|---|---|
| $P_{s,t}$ | 0.2020 |
| $P_{C,s}$ | 0.4588 |
| $P_{d,C}$ | 0.2871 |
| $P_{e,d}$ | 0.2359 |
| $P_{g,F}$ | 0.6102 |
| $P_{i,h}$ | 1.0316 |
| | |
| $P'_{s,t}$ | 0.1986 |
| $P'_{C',s}$ | 0.4950 |
| $P'_{d,C'}$ | 0.2384 |
| $P'_{e,d}$ | 0.2319 |
| $P'_{g,F'}$ | 0.5393 |
| $P'_{i,h}$ | 1.0143 |

### Deviation of Relative Partial Dispersions ΔP from the "Normal Line"

| | |
|---|---|
| $\Delta P_{C,t}$ | -0.0048 |
| $\Delta P_{C,s}$ | -0.0033 |
| $\Delta P_{F,e}$ | 0.0020 |
| $\Delta P_{g,F}$ | 0.0092 |
| $\Delta P_{i,g}$ | 0.0669 |

### Other Properties

| | |
|---|---|
| $\alpha_{-30/+70°C}$ [$10^{-6}$/K] | 8.1 |
| $\alpha_{+20/+300°C}$ [$10^{-6}$/K] | 9.0 |
| $T_g$ [°C] | 423 |
| $T_{10}^{13.0}$ [°C] | 410 |
| $T_{10}^{7.6}$ [°C] | 538 |
| $c_p$ [J/(g·K)] | 0.389 |
| λ [W/(m·K)] | 0.673 |
| | |
| ρ [g/cm$^3$] | 5.18 |
| **E** [$10^3$ N/mm$^2$] | 55 |
| µ | 0.244 |
| **K** [$10^{-6}$ mm$^2$/N] | 0.65 |
| **HK**$_{0.1/20}$ | 370 |
| **HG** | 1 |
| | |
| | |
| | |
| **CR** | 2 |
| **FR** | 3 |
| **SR** | 51.3 |
| **AR** | 2.3 |
| **PR** | 3.3 |
| | |
| | |
| | |

### Temperature Coefficients of Refractive Index

| | $\Delta n_{rel}/\Delta T$ [$10^{-6}$/K] | | | $\Delta n_{abs}/\Delta T$ [$10^{-6}$/K] | | |
|---|---|---|---|---|---|---|
| **[°C]** | **1060.0** | **e** | **g** | **1060.0** | **e** | **g** |
| **-40/ -20** | 6.1 | 9.9 | 14.5 | 3.7 | 7.4 | 11.9 |
| **+20/ +40** | 6.8 | 11.1 | 16.2 | 5.3 | 9.5 | 14.6 |
| **+60/ +80** | 7.3 | 11.8 | 17.4 | 6.1 | 10.6 | 16.1 |