# Data Sheet

SCHOTT

## N-BAF51
## 652450.333

| | | |
|---|---|---|
| $n_d = 1.65224$ | $\nu_d = 44.96$ | $n_F - n_C = 0.014507$ |
| $n_e = 1.65569$ | $\nu_e = 44.67$ | $n_{F'} - n_{C'} = 0.014677$ |

### Refractive Indices

| | λ [nm] | |
|---|---|---|
| $n_{2325.4}$ | 2325.4 | 1.61873 |
| $n_{1970.1}$ | 1970.1 | 1.62390 |
| $n_{1529.6}$ | 1529.6 | 1.62961 |
| $n_{1060.0}$ | 1060.0 | 1.63619 |
| $n_t$ | 1014.0 | 1.63701 |
| $n_s$ | 852.1 | 1.64059 |
| $n_r$ | 706.5 | 1.64551 |
| $n_C$ | 656.3 | 1.64792 |
| $n_{C'}$ | 643.8 | 1.64860 |
| $n_{632.8}$ | 632.8 | 1.64924 |
| $n_D$ | 589.3 | 1.65211 |
| $n_d$ | 587.6 | 1.65224 |
| $n_e$ | 546.1 | 1.65569 |
| $n_F$ | 486.1 | 1.66243 |
| $n_{F'}$ | 480.0 | 1.66328 |
| $n_g$ | 435.8 | 1.67065 |
| $n_h$ | 404.7 | 1.67766 |
| $n_i$ | 365.0 | |
| $n_{334.1}$ | 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

| | |
|---|---|
| $B_1$ | 1.51503623 |
| $B_2$ | 0.153621958 |
| $B_3$ | 1.15427909 |
| $C_1$ | 0.00942734715 |
| $C_2$ | 0.04308265 |
| $C_3$ | 124.889868 |

### Constants of Dispersion dn/dT

| | |
|---|---|
| $D_0$ | $-2.84 \cdot 10^{-7}$ |
| $D_1$ | $1.04 \cdot 10^{-8}$ |
| $D_2$ | $-1.80 \cdot 10^{-11}$ |
| $E_0$ | $7.01 \cdot 10^{-7}$ |
| $E_1$ | $8.47 \cdot 10^{-10}$ |
| $\lambda_{TK}$ [µm] | 0.219 |

### Internal Transmittance $\tau_i$

| λ [nm] | $\tau_i$ (10mm) | $\tau_i$ (25mm) |
|---|---|---|
| **2500** | 0.746 | 0.480 |
| **2325** | 0.831 | 0.630 |
| **1970** | 0.946 | 0.870 |
| **1530** | 0.992 | 0.980 |
| **1060** | 0.997 | 0.993 |
| **700** | 0.997 | 0.993 |
| **660** | 0.996 | 0.990 |
| **620** | 0.996 | 0.990 |
| **580** | 0.997 | 0.992 |
| **546** | 0.996 | 0.991 |
| **500** | 0.994 | 0.985 |
| **460** | 0.988 | 0.970 |
| **436** | 0.982 | 0.956 |
| **420** | 0.976 | 0.940 |
| **405** | 0.963 | 0.910 |
| **400** | 0.954 | 0.890 |
| **390** | 0.924 | 0.820 |
| **380** | 0.862 | 0.690 |
| **370** | 0.739 | 0.470 |
| **365** | 0.642 | 0.330 |
| **350** | 0.209 | 0.020 |
| **334** | | |
| **320** | | |
| **310** | | |
| **300** | | |
| **290** | | |
| **280** | | |
| **270** | | |
| **260** | | |
| **250** | | |
| | | |
| | | |

### Color Code

| | |
|---|---|
| $\lambda_{80}/\lambda_5$ | 39/34 |
| (*= $\lambda_{70}/\lambda_5$) | |

### Remarks

### Relative Partial Dispersion

| | |
|---|---|
| $P_{s,t}$ | 0.2463 |
| $P_{C,s}$ | 0.5055 |
| $P_{d,C}$ | 0.2977 |
| $P_{e,d}$ | 0.2376 |
| $P_{g,F}$ | 0.5670 |
| $P_{i,h}$ | |
| | |
| $P'_{s,t}$ | 0.2435 |
| $P'_{C',s}$ | 0.5460 |
| $P'_{d,C'}$ | 0.2479 |
| $P'_{e,d}$ | 0.2349 |
| $P'_{g,F'}$ | 0.5024 |
| $P'_{i,h}$ | |

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

| | |
|---|---|
| $\Delta P_{C,t}$ | -0.0064 |
| $\Delta P_{C,s}$ | -0.0022 |
| $\Delta P_{F,e}$ | -0.0001 |
| $\Delta P_{g,F}$ | -0.0012 |
| $\Delta P_{i,g}$ | |

### Other Properties

| | |
|---|---|
| $\alpha_{-30/+70°C}$ [$10^{-6}$/K] | 8.4 |
| $\alpha_{+20/+300°C}$ [$10^{-6}$/K] | 9.5 |
| $T_g$ [°C] | 569 |
| $T_{10}^{13.0}$ [°C] | 574 |
| $T_{10}^{7.6}$ [°C] | 712 |
| $c_p$ [J/(g·K)] | 0.840 |
| λ [W/(m·K)] | 0.670 |
| | |
| ρ [g/cm$^3$] | 3.33 |
| **E** [$10^3$ N/mm$^2$] | 91 |
| μ | 0.262 |
| **K** [$10^{-6}$ mm$^2$/N] | 2.22 |
| **HK**$_{0.1/20}$ | 560 |
| **HG** | 5 |
| | |
| | |
| | |
| **CR** | 2 |
| **FR** | 0 |
| **SR** | 5.4 |
| **AR** | 1.3 |
| **PR** | 1 |
| | |
| | |
| | |

### 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** | 1.7 | 2.8 | 3.8 | -0.5 | 0.5 | 1.5 |
| **+20/ +40** | 1.7 | 2.9 | 4.1 | 0.3 | 1.5 | 2.7 |
| **+60/ +80** | 1.8 | 3.1 | 4.4 | 0.7 | 2.0 | 3.3 |