

| | | | | | |
|------------------------|----------------------------|-------------------|--------------|------------------------------|----------------------------|
| Refractive Index n_d | 1,84139 1,841390 | Abbe Number v_d | 24,56 | Dispersion $n_F - n_C$ | 0,03426 0,034260 |
| Refractive Index n_e | 1,849470 | Abbe Number v_e | 24,37 | Dispersion $n_{F'} - n_{C'}$ | 0,034856 |

| Refractive Indices | | |
|--------------------|-----------------------------|----------------|
| | λ (μm) | |
| n_{2325} | 2.32542 | 1,78567 |
| n_{1970} | 1.97009 | 1,79100 |
| n_{1530} | 1.52958 | 1,79764 |
| n_{1129} | 1.12864 | 1,80566 |
| n_t | 1.01398 | 1,80906 |
| n_s | 0.85211 | 1,81592 |
| $n_{A'}$ | 0.76819 | 1,82116 |
| n_r | 0.70652 | 1,82626 |
| n_C | 0.65627 | 1,83157 |
| $n_{C'}$ | 0.64385 | 1,83310 |
| $n_{\text{He-Ne}}$ | 0.6328 | 1,83453 |
| n_D | 0.58929 | 1,84110 |
| n_d | 0.58756 | 1,84139 |
| n_e | 0.54607 | 1,84947 |
| n_F | 0.48613 | 1,86583 |
| $n_{F'}$ | 0.47999 | 1,86795 |
| $n_{\text{He-Cd}}$ | 0.44157 | 1,88394 |
| n_g | 0.435835 | 1,88682 |
| n_h | 0.404656 | 1,90566 |
| n_i | 0.365015 | |
| n_{334} | 0.334148 | |
| n_{326} | 0.326106 | |

| Partial Dispersions | |
|---------------------|----------|
| $n_C - n_t$ | 0,022511 |
| $n_C - n_{A'}$ | 0,010410 |
| $n_d - n_C$ | 0,009817 |
| $n_e - n_C$ | 0,017895 |
| $n_g - n_d$ | 0,045433 |
| $n_g - n_F$ | 0,020990 |
| $n_h - n_g$ | 0,018839 |
| $n_i - n_g$ | |
| $n_{C'} - n_t$ | 0,024034 |
| $n_e - n_{C'}$ | 0,016372 |
| $n_{F'} - n_e$ | 0,018484 |
| $n_i - n_{F'}$ | |

| Relative Partial Dispersions | |
|------------------------------|--------|
| $\theta_{C,t}$ | 0,6571 |
| $\theta_{C,A'}$ | 0,3039 |
| $\theta_{d,C}$ | 0,2865 |
| $\theta_{e,C}$ | 0,5223 |
| $\theta_{g,d}$ | 1,3261 |
| $\theta_{g,F}$ | 0,6127 |
| $\theta_{h,g}$ | 0,5499 |
| $\theta_{i,g}$ | |
| $\theta'_{C',t}$ | 0,6895 |
| $\theta'_{e,C'}$ | 0,4697 |
| $\theta'_{F',e}$ | 0,5303 |
| $\theta'_{i,F'}$ | |

| Thermal Properties | | |
|---------------------------------------------------------------|---------------|-------|
| Strain Point | StP | |
| Annealing Point | AP | |
| Transformation Temperature | Tg | 386 |
| Yield Point | At | 413 |
| Softening Point | SP | 443 |
| Expansion Coefficient α ($10^{-7} / ^\circ\text{C}$) | | |
| | (-30~+70°C) | 84 |
| | (+100~+300°C) | 96 |
| Thermal Conductivity (W/m·K) | k | 0,635 |

| Deviation of Relative Partial Dispersions | |
|-------------------------------------------|--------|
| $\Delta\theta_{C,t}$ | 0,0048 |
| $\Delta\theta_{C,A'}$ | 0,0017 |
| $\Delta\theta_{g,d}$ | 0,0124 |
| $\Delta\theta_{g,F}$ | 0,0110 |
| $\Delta\theta_{i,g}$ | |

| Other Properties | | |
|----------------------|-------------------------------|------|
| Bubble Quality Group | B | |
| Specific Gravity | d | 5,35 |
| Coloring | $\lambda_{80} / \lambda_{70}$ | 40 |
| | λ_5 | 35 |

| Mechanical Properties | | |
|--------------------------------------------------|-----------|---------|
| Young's Modulus (10^9N/m^2) | E | 592 |
| Rigidity Modulus (10^9N/m^2) | G | 237 |
| Poisson's Ratio | σ | 0,250 |
| Knoop Hardness | Hk | 360 [4] |
| Abrasion | Aa | 316 |
| Photoelastic Constant (nm/cm/10 ⁵ Pa) | β | 0,09 |

| Constants of Dispersion Formula | |
|---------------------------------|-------------------------------|
| 326 ~ 1129 nm | |
| A_1 | 1,78552677 |
| A_2 | 4,46684871 · 10 ⁻¹ |
| A_3 | 1,21749317 |
| B_1 | 1,36046011 · 10 ⁻² |
| B_2 | 5,70875152 · 10 ⁻² |
| B_3 | 1,29967536 · 10 ⁻² |
| 1129 ~ 2325 nm | |
| A_1 | 1,78552677 |
| A_2 | 4,46684871 · 10 ⁻¹ |
| A_3 | 1,21749317 |
| B_1 | 1,36046011 · 10 ⁻² |
| B_2 | 5,70875152 · 10 ⁻² |
| B_3 | 1,29967536 · 10 ⁻² |

| Internal Transmittance | | |
|------------------------|----------------|----------------|
| λ (nm) | τ i 10 mm | τ i 25 mm |
| 280 | | |
| 290 | | |
| 300 | | |
| 310 | | |
| 320 | | |
| 330 | | |
| 340 | | |
| 350 | | |
| 360 | 0,220 | |
| 365 | | |
| 370 | 0,620 | |
| 380 | 0,840 | |
| 390 | 0,927 | |
| 400 | 0,962 | |
| 420 | 0,985 | |
| 440 | 0,992 | |
| 460 | 0,995 | |
| 480 | 0,996 | |
| 500 | 0,998 | |
| 550 | 0,999 | |
| 600 | 0,998 | |
| 650 | 0,998 | |
| 700 | 0,998 | |
| 800 | 0,998 | |
| 900 | 0,999 | |
| 1000 | 0,999 | |
| 1200 | 0,999 | |
| 1400 | 0,996 | |
| 1600 | 0,996 | |
| 1800 | 0,986 | |
| 2000 | 0,975 | |
| 2200 | 0,942 | |
| 2400 | 0,905 | |

| Chemical Properties | | |
|---------------------------------------|--------------|---|
| Water Resistance (Powder) Group | RW(P) | 1 |
| Acid Resistance (Powder) Group | RA(P) | 4 |
| Weathering Resistance (Surface) Group | W(S) | |
| Acid Resistance (Surface) Group | SR | |
| Phosphate Resistance | PR | |

| Temperature Coefficients of Refractive Index | | | | | | | | |
|----------------------------------------------|-------------------------------------------|------|-------|------|------|------|------|---|
| Range of Temperature (°C) | dn / dt relative (10 ⁶ / °C) | | | | | | | |
| | t | C' | He-Ne | D | e | F' | g | i |
| -40 ~ -20 | 7,2 | 9,5 | 9,7 | 10,4 | 11,4 | 13,8 | 16,6 | |
| -20 ~ 0 | 7,4 | 9,7 | 9,9 | 10,7 | 11,7 | 14,2 | 17,1 | |
| 0 ~ 20 | 7,5 | 9,9 | 10,1 | 10,9 | 12,0 | 14,5 | 17,6 | |
| 20 ~ 40 | 7,6 | 10,2 | 10,3 | 11,1 | 12,2 | 14,9 | 18,0 | |
| 40 ~ 60 | 7,8 | 10,4 | 10,6 | 11,4 | 12,5 | 15,3 | 18,5 | |
| 60 ~ 80 | 7,9 | 10,6 | 10,8 | 11,6 | 12,8 | 15,6 | 18,9 | |