

S-YGH51

Code(d) **755523**

Code(e) **758521**

| | | | | | |
|------------------------|----------------------------|-------------------|----------------------|------------------------|----------------------------|
| Refractive Index n_d | 1.75500 1.754999 | Abbe Number v_d | 52.3 52.32 | Dispersion n_F-n_C | 0.01443 0.014431 |
| Refractive Index n_e | 1.758437 | Abbe Number v_e | 52.08 | Dispersion $n_F'-n_C'$ | 0.014562 |

| Refractive Indices | | |
|------------------------|----------|---------|
| $\lambda(\mu\text{m})$ | | |
| n_{2325} | 2.32542 | 1.71387 |
| n_{1970} | 1.97009 | 1.72153 |
| n_{1530} | 1.52958 | 1.72961 |
| n_{1129} | 1.12864 | 1.73662 |
| n_t | 1.01398 | 1.73893 |
| n_s | 0.85211 | 1.74292 |
| $n_{A'}$ | 0.76819 | 1.74565 |
| n_r | 0.70652 | 1.74814 |
| n_C | 0.65627 | 1.75062 |
| $n_{C'}$ | 0.64385 | 1.75132 |
| $n_{\text{He-Ne}}$ | 0.6328 | 1.75197 |
| n_D | 0.58929 | 1.75487 |
| n_d | 0.58756 | 1.75500 |
| n_e | 0.54607 | 1.75844 |
| n_F | 0.48613 | 1.76505 |
| $n_{F'}$ | 0.47999 | 1.76588 |
| $n_{\text{He-Cd}}$ | 0.44157 | 1.77191 |
| n_g | 0.435835 | 1.77296 |
| n_h | 0.404656 | 1.77954 |
| n_i | 0.365015 | 1.79083 |

| Partial Dispersions | |
|---------------------|----------|
| n_C-n_t | 0.011699 |
| $n_C-n_{A'}$ | 0.004976 |
| n_d-n_C | 0.004375 |
| n_e-n_C | 0.007813 |
| n_g-n_d | 0.017957 |
| n_g-n_F | 0.007901 |
| n_h-n_g | 0.006588 |
| n_i-n_g | 0.017871 |
| n_C-n_t | 0.012394 |
| $n_e-n_{C'}$ | 0.007118 |
| $n_{F'-n_e}$ | 0.007444 |
| $n_i-n_{F'}$ | 0.024946 |

| Relative Partial Dispersions | |
|------------------------------|--------|
| $\theta_{C,t}$ | 0.8107 |
| $\theta_{C,A'}$ | 0.3448 |
| $\theta_{d,C}$ | 0.3032 |
| $\theta_{e,C}$ | 0.5414 |
| $\theta_{g,d}$ | 1.2443 |
| $\theta_{g,F}$ | 0.5475 |
| $\theta_{h,g}$ | 0.4565 |
| $\theta_{i,g}$ | 1.2384 |
| $\theta'_{C,t}$ | 0.8511 |
| $\theta'_{e,C'}$ | 0.4888 |
| $\theta'_{F',e}$ | 0.5112 |
| $\theta'_{i,F}$ | 1.7131 |

| Thermal Properties | |
|---|-------|
| Strain Point StP (°C) | 651 |
| Annealing Point AP (°C) | 670 |
| Transformation Temperature Tg (°C) | 700 |
| Yield Point At (°C) | 712 |
| Softening Point SP (°C) | 738 |
| Expansion Coefficients (-30~+70°C) | 58 |
| α (10 ⁻⁷ /°C) (+100~+300°C) | 70 |
| Thermal Conductivity k (W/m-K) | 0.842 |

| Coloring | | | |
|----------------|----|-------------|----|
| λ_{80} | 37 | λ_5 | 28 |
| λ_{70} | | | |

| Internal Transmittance | |
|------------------------|----------------------|
| $\lambda(\text{nm})$ | $\tau_{10\text{mm}}$ |
| 280 | 0.03 |
| 290 | 0.12 |
| 300 | 0.21 |
| 310 | 0.24 |
| 320 | 0.47 |
| 330 | 0.61 |
| 340 | 0.73 |
| 350 | 0.82 |
| 360 | 0.88 |
| 370 | 0.930 |
| 380 | 0.956 |
| 390 | 0.972 |
| 400 | 0.980 |
| 420 | 0.988 |
| 440 | 0.991 |
| 460 | 0.994 |
| 480 | 0.996 |
| 500 | 0.997 |
| 550 | 0.998 |
| 600 | 0.998 |
| 650 | 0.998 |
| 700 | 0.998 |
| 800 | 0.998 |
| 900 | 0.998 |
| 1000 | 0.997 |
| 1200 | 0.997 |
| 1400 | 0.993 |
| 1600 | 0.993 |
| 1800 | 0.984 |
| 2000 | 0.958 |
| 2200 | 0.88 |
| 2400 | 0.62 |

| Deviation of Relative Dispersions $\Delta\theta$ from "Normal" | |
|--|---------|
| $\Delta\theta_{C,t}$ | 0.0185 |
| $\Delta\theta_{C,A'}$ | 0.0055 |
| $\Delta\theta_{g,d}$ | -0.0118 |
| $\Delta\theta_{g,F}$ | -0.0093 |
| $\Delta\theta_{i,g}$ | -0.0485 |

| Mechanical Properties | |
|--|---------|
| Young's Modulus E (10 ⁸ N/m ²) | 1222 |
| Rigidity Modulus G (10 ⁸ N/m ²) | 473 |
| Poisson's Ratio σ | 0.291 |
| Knoop Hardness Hk[Class] | 720 7 |
| Abrasion Aa | 61 |
| Photoelastic Constant β (nm/cm/10 ⁵ Pa) | 1.48 |

| Constants of Dispersion Formula | |
|---------------------------------|----------------|
| A ₁ | 1.08280170E+00 |
| A ₂ | 9.33988681E-01 |
| A ₃ | 1.32367286E+00 |
| B ₁ | 1.81156360E-02 |
| B ₂ | 3.04157575E-03 |
| B ₃ | 9.10353195E+01 |

| 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 | 51.0 |
| Phosphate Resistance PR | 2.0 |

| Other Properties | |
|------------------------|------|
| Bubble Quality Group B | |
| Specific Gravity d | 4.40 |
| Remarks | |

| Temperature Coefficients of Refractive Index | | | | | | | |
|--|---|-----|-------|-----|-----|-----|-----|
| Range of Temperature (°C) | dn/dt relative (10 ⁻⁶ /°C) | | | | | | |
| | t | C' | He-Ne | D | e | F' | g |
| -40~20 | | 4.5 | | 4.6 | 4.8 | 5.3 | 5.6 |
| -20~ 0 | | 4.5 | | 4.7 | 4.9 | 5.3 | 5.7 |
| 0~20 | | 4.6 | | 4.8 | 5.0 | 5.4 | 5.9 |
| 20~40 | | 4.7 | | 4.9 | 5.1 | 5.6 | 6.1 |
| 40~60 | | 4.9 | | 5.1 | 5.4 | 5.8 | 6.3 |
| 60~80 | | 5.1 | | 5.4 | 5.6 | 6.0 | 6.6 |