

S-TIL 2

Code(d) **541472**

Code(e) **543469**

| | | |
|----------------------------|----------------------|----------------------------|
| Refractive Index n_d | Abbe Number v_d | Dispersion n_F-n_C |
| 1.54072 1.540720 | 47.2 47.23 | 0.01145 0.011449 |
| Refractive Index n_e | Abbe Number v_e | Dispersion n_F-n_C' |
| 1.543440 | 46.94 | 0.011577 |

| Refractive Indices | | |
|------------------------|----------|---------|
| $\lambda(\mu\text{m})$ | | |
| n_{2325} | 2.32542 | 1.51118 |
| n_{1970} | 1.97009 | 1.51626 |
| n_{1530} | 1.52958 | 1.52176 |
| n_{1129} | 1.12864 | 1.52672 |
| n_t | 1.01398 | 1.52841 |
| n_s | 0.85211 | 1.53139 |
| $n_{A'}$ | 0.76819 | 1.53346 |
| n_r | 0.70652 | 1.53537 |
| n_C | 0.65627 | 1.53730 |
| $n_{C'}$ | 0.64385 | 1.53784 |
| $n_{\text{He-Ne}}$ | 0.6328 | 1.53835 |
| n_D | 0.58929 | 1.54062 |
| n_d | 0.58756 | 1.54072 |
| n_e | 0.54607 | 1.54344 |
| n_F | 0.48613 | 1.54875 |
| $n_{F'}$ | 0.47999 | 1.54942 |
| $n_{\text{He-Cd}}$ | 0.44157 | 1.55435 |
| n_g | 0.435835 | 1.55522 |
| n_h | 0.404656 | 1.56074 |
| n_i | 0.365015 | 1.57052 |

| Partial Dispersions | |
|---------------------|----------|
| n_C-n_t | 0.008891 |
| $n_C-n_{A'}$ | 0.003839 |
| n_d-n_C | 0.003423 |
| n_e-n_C | 0.006143 |
| n_g-n_d | 0.014496 |
| n_g-n_F | 0.006470 |
| n_h-n_g | 0.005521 |
| n_i-n_g | 0.015308 |
| n_C-n_t | 0.009432 |
| $n_e-n_{C'}$ | 0.005602 |
| $n_{F'-n_e}$ | 0.005975 |
| $n_i-n_{F'}$ | 0.021109 |

| Relative Partial Dispersions | |
|------------------------------|--------|
| $\theta_{C,t}$ | 0.7766 |
| $\theta_{C,A'}$ | 0.3353 |
| $\theta_{d,C}$ | 0.2990 |
| $\theta_{e,C}$ | 0.5366 |
| $\theta_{g,d}$ | 1.2661 |
| $\theta_{g,F}$ | 0.5651 |
| $\theta_{h,g}$ | 0.4822 |
| $\theta_{i,g}$ | 1.3371 |
| $\theta'_{C,t}$ | 0.8147 |
| $\theta'_{e,C'}$ | 0.4839 |
| $\theta'_{F',e}$ | 0.5161 |
| $\theta'_{i,F}$ | 1.8234 |

| Thermal Properties | |
|---|-------|
| Strain Point StP (°C) | 448 |
| Annealing Point AP (°C) | 484 |
| Transformation Temperature Tg (°C) | 496 |
| Yield Point At (°C) | 538 |
| Softening Point SP (°C) | 658 |
| Expansion Coefficients (-30~+70°C) | 82 |
| α (10 ⁻⁷ /°C) (+100~+300°C) | 98 |
| Thermal Conductivity k (W/m-K) | 1.051 |

| Coloring | | | |
|----------------|----|-------------|----|
| λ_{80} | 37 | λ_5 | 34 |
| λ_{70} | | | |

| Internal Transmittance | |
|------------------------|----------------------|
| $\lambda(\text{nm})$ | $\tau_{10\text{mm}}$ |
| 280 | |
| 290 | |
| 300 | |
| 310 | |
| 320 | |
| 330 | |
| 340 | 0.04 |
| 350 | 0.32 |
| 360 | 0.66 |
| 370 | 0.84 |
| 380 | 0.925 |
| 390 | 0.962 |
| 400 | 0.979 |
| 420 | 0.990 |
| 440 | 0.994 |
| 460 | 0.995 |
| 480 | 0.996 |
| 500 | 0.997 |
| 550 | 0.998 |
| 600 | 0.998 |
| 650 | 0.997 |
| 700 | 0.998 |
| 800 | 0.999 |
| 900 | 0.998 |
| 1000 | 0.997 |
| 1200 | 0.997 |
| 1400 | 0.997 |
| 1600 | 0.995 |
| 1800 | 0.987 |
| 2000 | 0.970 |
| 2200 | 0.942 |
| 2400 | 0.917 |

| Deviation of Relative Dispersions $\Delta\theta$ from "Normal" | |
|--|---------|
| $\Delta\theta_{C,t}$ | 0.0083 |
| $\Delta\theta_{C,A'}$ | 0.0022 |
| $\Delta\theta_{g,d}$ | -0.0005 |
| $\Delta\theta_{g,F}$ | 0.0000 |
| $\Delta\theta_{i,g}$ | 0.0076 |

| Mechanical Properties | |
|--|---------|
| Young's Modulus E (10 ⁸ N/m ²) | 699 |
| Rigidity Modulus G (10 ⁸ N/m ²) | 286 |
| Poisson's Ratio σ | 0.220 |
| Knoop Hardness Hk[Class] | 500 5 |
| Abrasion Aa | 121 |
| Photoelastic Constant β (nm/cm/10 ⁵ Pa) | 2.74 |

| Constants of Dispersion Formula | |
|---------------------------------|----------------|
| A ₁ | 1.23401499E+00 |
| A ₂ | 9.59796833E-02 |
| A ₃ | 1.20503991E+00 |
| B ₁ | 8.69507801E-03 |
| B ₂ | 4.65611429E-02 |
| B ₃ | 1.37953301E+02 |

| Chemical Properties | |
|---|-----|
| Water Resistance(Powder) Group RW(P) | 3 |
| Acid Resistance(Powder) Group RA(P) | 1 |
| Weathering Resistance(Surface) Group W(S) | 2 |
| Acid Resistance(Surface) Group SR | 1.0 |
| Phosphate Resistance PR | 1.0 |

| Other Properties | |
|------------------------|------|
| Bubble Quality Group B | B |
| Specific Gravity d | 2.52 |
| 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 | 1.3 | 1.7 | 1.7 | 1.9 | 2.0 | 2.5 | 2.9 |
| -20~0 | 1.3 | 1.7 | 1.8 | 1.9 | 2.1 | 2.6 | 3.0 |
| 0~20 | 1.4 | 1.8 | 1.8 | 2.0 | 2.2 | 2.6 | 3.1 |
| 20~40 | 1.5 | 1.9 | 1.9 | 2.1 | 2.3 | 2.7 | 3.3 |
| 40~60 | 1.5 | 1.9 | 1.9 | 2.1 | 2.3 | 2.8 | 3.4 |
| 60~80 | 1.5 | 2.0 | 2.0 | 2.2 | 2.4 | 2.9 | 3.5 |