

| | | | |
|-----------------------------|-----------------|-----------------|------------------------------|
| H-ZF13 785257 | $n_d = 1.78472$ | $\nu_d = 25.72$ | $n_F - n_C = 0.030510$ |
| | $n_e = 1.79191$ | $\nu_e = 25.51$ | $n_{F'} - n_{C'} = 0.031042$ |

| Refractive Indices | | |
|--------------------|----------------------|-------------|
| | $\lambda(\text{nm})$ | n_λ |
| n_{2325} | 2325.42 | 1.73037 |
| n_{1970} | 1970.09 | 1.73662 |
| n_{1530} | 1529.58 | 1.74411 |
| n_{1129} | 1128.64 | 1.75231 |
| n_t | 1013.98 | 1.75557 |
| n_s | 852.11 | 1.76192 |
| $n_{A'}$ | 768.19 | 1.76666 |
| n_r | 706.52 | 1.77124 |
| n_C | 656.27 | 1.77597 |
| $n_{C'}$ | 643.85 | 1.77733 |
| $n_{\text{He-Ne}}$ | 632.80 | 1.77861 |
| n_D | 589.29 | 1.78446 |
| n_d | 587.56 | 1.78472 |
| n_e | 546.07 | 1.79191 |
| n_F | 486.13 | 1.80648 |
| $n_{F'}$ | 479.99 | 1.80837 |
| n_g | 435.84 | 1.82522 |
| n_h | 404.66 | 1.84210 |
| n_i | 365.01 | 1.87399 |

| Constants of Dispersion Formula | |
|---------------------------------|-----------------|
| A_0 | 3.05227481E+00 |
| A_1 | -1.21808741E-02 |
| A_2 | 4.16791281E-02 |
| A_3 | 1.79932930E-03 |
| A_4 | 1.91659600E-05 |
| A_5 | 1.22563456E-05 |

| Relative Partial Dispersions | | | |
|------------------------------|--------|-------------|--------|
| $P_{d,C}$ | 0.2868 | $P'_{d,C'}$ | 0.2381 |
| $P_{e,d}$ | 0.2357 | $P'_{e,d}$ | 0.2316 |
| $P_{g,F}$ | 0.6142 | $P'_{g,F'}$ | 0.5428 |

| Range of Temperature (°C) | Temperature Coefficients of Refractive Index | | | | | | |
|---------------------------|--|-----|-------|-----|-----|-----|-----|
| | dn/dt relative (10 ⁻⁶ / °C) | | | | | | |
| | t | C' | He-Ne | D | e | F' | g |
| -40 ~ -20 | -0.7 | 0.4 | 0.5 | 0.8 | 1.3 | 2.6 | 4.0 |
| -20 ~ 0 | -0.6 | 0.5 | 0.6 | 1.0 | 1.5 | 2.8 | 4.4 |
| 0 ~ 20 | -0.6 | 0.6 | 0.7 | 1.1 | 1.7 | 3.1 | 4.8 |
| 20 ~ 40 | -0.6 | 0.7 | 0.8 | 1.2 | 1.8 | 3.2 | 5.0 |
| 40 ~ 60 | -0.6 | 0.8 | 0.9 | 1.3 | 1.9 | 3.5 | 5.3 |
| 60 ~ 80 | -0.5 | 1.0 | 1.1 | 1.5 | 2.2 | 3.8 | 5.7 |

| Chemical Properties (grade) | |
|-----------------------------|---|
| RC(S) | 1 |
| RA(S) | 1 |
| D _W | 1 |
| D _A | 1 |
| R _{OH} (S) | 1 |
| RP(S) | 1 |

| Thermal Properties | |
|--|-----|
| T _g (°C) | 585 |
| T _s (°C) | 628 |
| T ₁₀ ^{14.5} (°C) | 535 |
| T ₁₀ ¹³ (°C) | 573 |
| $\alpha_{-50/80^\circ\text{C}}$ (10 ⁻⁷ /K) | 91 |
| $\alpha_{100/300^\circ\text{C}}$ (10 ⁻⁷ /K) | 111 |

| Mechanical Properties | |
|-----------------------------|-------|
| HK(10 ⁷ Pa) | 528 |
| F _A | 181 |
| E(10 ⁷ Pa) | 9006 |
| G(10 ⁷ Pa) | 3602 |
| μ | 0.250 |
| B(nm/cm/10 ⁵ Pa) | 2.780 |

| Density | |
|-----------------------------|------|
| ρ (g/cm ³) | 3.22 |

| Deviation of Relative Partial Dispersions | |
|---|---------|
| $\Delta P_{F,e}$ | 0.0015 |
| $\Delta P_{g,F}$ | 0.0133 |
| $\Delta P_{C,t}$ | 0.0039 |
| $\Delta P_{C,s}$ | -0.0016 |

| Internal Transmittance | | |
|------------------------|-------------------|----------------------|
| $\lambda(\text{nm})$ | $\tau_5\text{mm}$ | $\tau_{10}\text{mm}$ |
| 2400 | 0.950 | 0.900 |
| 2200 | 0.976 | 0.950 |
| 2000 | 0.987 | 0.972 |
| 1800 | 0.993 | 0.984 |
| 1600 | 0.998 | 0.996 |
| 1400 | 0.998 | 0.996 |
| 1200 | 0.998 | 0.996 |
| 1060 | 0.998 | 0.996 |
| 1000 | 0.998 | 0.996 |
| 900 | 0.998 | 0.996 |
| 850 | 0.998 | 0.996 |
| 800 | 0.998 | 0.996 |
| 750 | 0.998 | 0.996 |
| 700 | 0.998 | 0.996 |
| 650 | 0.998 | 0.996 |
| 600 | 0.998 | 0.996 |
| 550 | 0.998 | 0.996 |
| 500 | 0.998 | 0.996 |
| 480 | 0.996 | 0.992 |
| 460 | 0.993 | 0.985 |
| 440 | 0.986 | 0.975 |
| 420 | 0.970 | 0.950 |
| 400 | 0.938 | 0.889 |
| 390 | 0.891 | 0.801 |
| 380 | 0.760 | 0.590 |
| 370 | 0.428 | 0.195 |
| 360 | | |
| 350 | | |
| 340 | | |
| 330 | | |
| 320 | | |
| 310 | | |
| 300 | | |
| 290 | | |
| 280 | | |

| Coloration Code | |
|--|---------|
| $\lambda_{80}(\lambda_{70})/\lambda_5$ | 420/365 |

| Coloration of Internal Transmittance | |
|--------------------------------------|---------|
| $\lambda\tau_{80}/\lambda\tau_5$ | 391/365 |