

TAFD55-W

001-291 $n_d = 2.00100$ $\nu_d = 29.13$ (29.134) $n_F - n_C = 0.034358$
 $n_e = 2.00912$ $\nu_e = 28.92$ (28.916) $n_{F'} - n_{C'} = 0.034898$

| 屈折率 Refractive Index | | |
|----------------------|----------------|---------|
| | λ (nm) | |
| $n_{1529.6}$ | 1529.60 | 1.95443 |
| $n_{1128.64}$ | 1128.64 | 1.96381 |
| n_t | 1013.98 | 1.96756 |
| n_s | 852.11 | 1.97488 |
| $n_{A'}$ | 768.195 | 1.98035 |
| n_r | 706.519 | 1.98561 |
| n_C | 656.273 | 1.99105 |
| $n_{C'}$ | 643.847 | 1.99260 |
| n_{633} | 632.8 | 1.99406 |
| n_D | 589.294 | 2.00070 |
| n_d | 587.562 | 2.00100 |
| n_e | 546.074 | 2.00912 |
| n_F | 486.133 | 2.02540 |
| $n_{F'}$ | 479.991 | 2.02750 |
| n_g | 435.834 | 2.04600 |
| n_h | 404.656 | 2.06423 |
| n_i | 365.015 | 2.09808 |

| 部分分散 Partial dispersions | |
|--------------------------|----------|
| $n_C - n_t$ | 0.023484 |
| $n_d - n_C$ | 0.009957 |
| $n_F - n_d$ | 0.024401 |
| $n_g - n_F$ | 0.020597 |
| $n_{C'} - n_t$ | 0.025037 |
| $n_e - n_{C'}$ | 0.016523 |
| $n_{F'} - n_e$ | 0.018375 |
| $n_g - n_{F'}$ | 0.018504 |

| 比重 Specific Gravity | |
|---------------------|------|
| d | 5.12 |

| 化学的性質 Chemical Properties | |
|---------------------------|---|
| D_W | 1 |
| D_A | 1 |
| T_{Blue} | 1 |
| D_{NaOH} | 1 |
| D_{STPP} | 1 |
| D_0 | 1 |
| D_H | |

| 内部透過率 Internal Transmittance | | | | |
|------------------------------|------------|------------|-------------|--|
| λ (nm) | τ 2mm | τ 5mm | τ 10mm | |
| 2500 | 0.925 | 0.823 | 0.678 | |
| 2400 | 0.946 | 0.870 | 0.756 | |
| 2200 | 0.982 | 0.956 | 0.914 | |
| 2000 | 0.992 | 0.979 | 0.959 | |
| 1800 | 0.996 | 0.991 | 0.982 | |
| 1600 | 0.999 | 0.997 | 0.993 | |
| 1550 | 0.999 | 0.997 | 0.995 | |
| 1500 | 0.999 | 0.997 | 0.993 | |
| 1400 | 0.999 | 0.999 | 0.998 | |
| 1300 | 0.999 | 0.999 | 0.999 | |
| 1200 | 0.999 | 0.999 | 0.999 | |
| 1100 | 0.999 | 0.999 | 0.999 | |
| 1060 | 0.999 | 0.999 | 0.999 | |
| 1050 | 0.999 | 0.999 | 0.999 | |
| 1000 | 0.999 | 0.999 | 0.999 | |
| 950 | 0.999 | 0.999 | 0.999 | |
| 900 | 0.999 | 0.999 | 0.999 | |
| 850 | 0.999 | 0.999 | 0.999 | |
| 830 | 0.999 | 0.999 | 0.999 | |
| 800 | 0.999 | 0.999 | 0.999 | |
| 780 | 0.999 | 0.999 | 0.999 | |
| 750 | 0.999 | 0.999 | 0.999 | |
| 700 | 0.999 | 0.998 | 0.997 | |
| 650 | 0.999 | 0.997 | 0.994 | |
| 600 | 0.996 | 0.990 | 0.980 | |
| 550 | 0.992 | 0.980 | 0.960 | |
| 500 | 0.997 | 0.993 | 0.986 | |
| 480 | 0.996 | 0.990 | 0.980 | |
| 460 | 0.994 | 0.986 | 0.972 | |
| 440 | 0.992 | 0.980 | 0.960 | |
| 420 | 0.987 | 0.967 | 0.935 | |
| 400 | 0.971 | 0.930 | 0.864 | |
| 390 | 0.951 | 0.882 | 0.777 | |
| 380 | 0.904 | 0.777 | 0.603 | |
| 370 | 0.793 | 0.559 | 0.313 | |
| 360 | 0.540 | 0.214 | 0.046 | |
| 350 | 0.154 | | | |
| 340 | | | | |
| 330 | | | | |
| 320 | | | | |
| 310 | | | | |
| 300 | | | | |
| 290 | | | | |
| 280 | | | | |

| 熱的性質 Thermal Properties | |
|---|-------|
| T_g (°C) | 709 |
| T_s (°C) | 752 |
| $T_{10^{14.5}}$ (°C) | 694 |
| $T_{10^{13}}$ (°C) | 705 |
| $T_{10^{7.6}}$ (°C) | 799 |
| $\alpha_{-30/+70^\circ C}$ ($10^{-7}/^\circ C$) | 73 |
| $\alpha_{100/300^\circ C}$ ($10^{-7}/^\circ C$) | 90 |
| λ [W/(m·K)] | 0.817 |
| C_p [kJ/(kg·K)] | 0.421 |

| 分散式の定数 Constants of dispersion formula | |
|--|-----------------------------|
| A_0 | 3.8317578 |
| A_1 | $-1.5266397 \times 10^{-2}$ |
| A_2 | 5.4573843×10^{-2} |
| A_3 | 2.3109346×10^{-3} |
| A_4 | $-4.4476201 \times 10^{-5}$ |
| A_5 | 1.6143887×10^{-5} |

| 部分分散比 Partial dispersion rates | | | |
|--------------------------------|--------|------------|--------|
| $P_{C,t}$ | 0.6835 | $P'_{C,t}$ | 0.7174 |
| $P_{d,C}$ | 0.2898 | $P'_{d,C}$ | 0.2408 |
| $P_{e,d}$ | 0.2363 | $P'_{e,d}$ | 0.2326 |
| $P_{F,e}$ | 0.4739 | $P'_{F,e}$ | 0.5265 |
| $P_{g,F}$ | 0.5995 | $P'_{g,F}$ | 0.5302 |
| $P_{h,g}$ | 0.5306 | $P'_{h,g}$ | 0.5224 |
| $P_{i,h}$ | 0.9851 | $P'_{i,h}$ | |

| 異常分散性 Anomalous dispersions | |
|-----------------------------|---------|
| $\Delta P_{C,t}$ | 0.0015 |
| $\Delta P_{C,A'}$ | -0.0008 |
| $\Delta P_{g,d}$ | 0.0043 |
| $\Delta P_{g,F}$ | 0.0036 |
| $\Delta P_{i,g}$ | |

| 機械的性質 Mechanical Properties | |
|-----------------------------|---------|
| H_K | 655 (7) |
| F_A | 55 |
| E (GPa) | 130 |
| G (GPa) | 49.7 |
| μ | 0.305 |
| σ_b (MPa) | 106 |

| 光弾性定数 Photoelastic Constant | |
|-----------------------------|------|
| B ($10^{-12}/Pa$) | 0.82 |

| 屈折率の温度係数 dn/dT ($\times 10^{-6}/^\circ C$) | | アッペ数の温度係数 $d\nu/dT$ ($\times 10^{-3}/^\circ C$) | | | | | | | | | | | | |
|--|-----------|---|-------|----------|-------|-------|-------|-----------|----------|-------|-------|---------|-----------|--|
| Temperature Coefficient of Refractive Index | | Temperature Coefficient of Abbe-number | | | | | | | | | | | | |
| | (°C) | dn/dT | | | | | | | | | | | $d\nu/dT$ | |
| | | n_h | n_g | $n_{F'}$ | n_F | n_e | n_d | n_{633} | $n_{C'}$ | n_C | n_r | ν_e | ν_d | |
| dn/dT & $d\nu/dT$ (rel.) | -40 / -20 | 9.4 | 7.6 | 6.0 | 5.8 | 4.5 | 4.0 | 3.5 | 3.4 | 3.3 | 3.0 | -2.0 | -2.0 | |
| | -20 / 0 | 9.7 | 7.9 | 6.2 | 6.0 | 4.7 | 4.1 | 3.7 | 3.6 | 3.5 | 3.1 | -2.0 | -2.0 | |
| | 0 / 20 | 10.1 | 8.1 | 6.4 | 6.2 | 4.9 | 4.3 | 3.8 | 3.7 | 3.6 | 3.3 | -2.1 | -2.1 | |
| | 20 / 40 | 10.4 | 8.4 | 6.6 | 6.4 | 5.0 | 4.4 | 3.9 | 3.8 | 3.7 | 3.3 | -2.2 | -2.2 | |
| | 40 / 60 | 10.7 | 8.6 | 6.7 | 6.5 | 5.1 | 4.5 | 4.0 | 3.9 | 3.8 | 3.4 | -2.2 | -2.2 | |
| | 60 / 80 | 10.9 | 8.8 | 6.9 | 6.7 | 5.2 | 4.5 | 4.0 | 3.9 | 3.8 | 3.4 | -2.3 | -2.3 | |
| | 80 / 100 | 11.1 | 8.9 | 6.9 | 6.7 | 5.2 | 4.5 | 4.0 | 3.8 | 3.7 | 3.3 | -2.4 | -2.4 | |
| | 100 / 120 | 11.2 | 8.9 | 6.9 | 6.7 | 5.1 | 4.4 | 3.8 | 3.7 | 3.6 | 3.2 | -2.4 | -2.4 | |
| | 120 / 140 | 11.2 | 8.9 | 6.8 | 6.6 | 5.0 | 4.3 | 3.7 | 3.6 | 3.4 | 3.0 | -2.5 | -2.5 | |
| | 140 / 150 | 11.2 | 8.8 | 6.7 | 6.4 | 4.8 | 4.1 | 3.5 | 3.4 | 3.3 | 2.8 | -2.5 | -2.5 | |
| dn/dT & $d\nu/dT$ (abs.) | -40 / -20 | 6.5 | 4.8 | 3.2 | 3.0 | 1.8 | 1.3 | 0.8 | 0.7 | 0.7 | 0.3 | -2.0 | -2.0 | |
| | -20 / 0 | 7.3 | 5.5 | 3.8 | 3.6 | 2.4 | 1.8 | 1.4 | 1.3 | 1.2 | 0.8 | -2.0 | -2.0 | |
| | 0 / 20 | 8.0 | 6.1 | 4.4 | 4.2 | 2.9 | 2.3 | 1.8 | 1.7 | 1.6 | 1.3 | -2.1 | -2.1 | |
| | 20 / 40 | 8.6 | 6.6 | 4.8 | 4.6 | 3.3 | 2.7 | 2.2 | 2.1 | 2.0 | 1.6 | -2.2 | -2.2 | |
| | 40 / 60 | 9.1 | 7.0 | 5.2 | 5.0 | 3.6 | 3.0 | 2.4 | 2.3 | 2.2 | 1.9 | -2.2 | -2.2 | |
| | 60 / 80 | 9.5 | 7.4 | 5.5 | 5.3 | 3.8 | 3.2 | 2.6 | 2.5 | 2.4 | 2.0 | -2.3 | -2.3 | |
| | 80 / 100 | 9.8 | 7.6 | 5.7 | 5.4 | 4.0 | 3.3 | 2.7 | 2.6 | 2.5 | 2.1 | -2.4 | -2.4 | |
| | 100 / 120 | 10.1 | 7.8 | 5.8 | 5.5 | 4.0 | 3.3 | 2.8 | 2.6 | 2.5 | 2.1 | -2.4 | -2.4 | |
| | 120 / 140 | 10.2 | 7.9 | 5.8 | 5.6 | 4.0 | 3.3 | 2.7 | 2.6 | 2.5 | 2.0 | -2.5 | -2.5 | |
| | 140 / 150 | 10.2 | 7.9 | 5.7 | 5.5 | 3.9 | 3.2 | 2.6 | 2.5 | 2.3 | 1.9 | -2.5 | -2.5 | |

| 線膨張係数 α ($\times 10^{-7}/^\circ C$) | |
|--|----------|
| Coefficient of Thermal Expansion | |
| (°C) | α |
| -40 / -30 | 68 |
| -30 / -20 | 69 |
| -20 / -10 | 71 |
| -10 / 0 | 72 |
| 0 / 10 | 73 |
| 10 / 20 | 74 |
| 20 / 30 | 74 |
| 30 / 40 | 75 |
| 40 / 50 | 75 |
| 50 / 60 | 75 |
| 60 / 70 | 76 |
| 70 / 80 | 76 |
| 80 / 90 | 76 |
| 90 / 100 | 76 |
| 100 / 110 | 77 |
| 110 / 120 | 77 |
| 120 / 130 | 78 |
| 130 / 140 | 79 |
| 140 / 150 | 80 |

| 着色度 Coloration Code | |
|--|-----------|
| $\lambda_{80}(\lambda_{70})/\lambda_5$ | (405)/360 |
| 着色度 Coloration of Internal Transmittance (内部透過率) | |
| $\lambda_{\tau 80}/\lambda_{\tau 5}$ | 392/360 |

| CCI Color Contribution Index | |
|------------------------------|------|
| CCI (G) | 2.64 |
| CCI (R) | 2.81 |

| 冷却速度による屈折率の変化 Difference of refractive indices by cooling rate | |
|--|--|
| β_C | |
| β_d | |
| β_F | |
| β_g | |

| 備考 Remarks | | | | | | |
|-----------------------------------|----------|--------|---------|-----------|--------|------|
| 硝種対照表 Glass Cross Reference Index | | | | | | |
| | HOYA | SCHOTT | OHARA | HIKARI | SUMITA | CDGM |
| Glass_Type | TAFD55-W | | S-LAH99 | J-LASFH16 | | |
| Code | 001-291 | | 001-291 | 001-291 | | |

Excel File Name : HOYA20250701M.xlsm