

L-LAH94

Code(d) **861371**

Code(e) **867368**

| | | | | | |
|------------------------|----------------|---------------------|--------------|-----------------------|-----------------|
| Refractive Index n_d | 1.86100 | Abbe Number ν_d | 37.10 | Dispersion n_F-n_C | 0.023209 |
| | 1.861000 | | | | |
| Refractive Index n_e | 1.866504 | Abbe Number ν_e | 36.85 | Dispersion n_F-n_C' | 0.023517 |

| Refractive Indices | | |
|------------------------|----------|---------|
| $\lambda(\mu\text{m})$ | | |
| n_{2325} | 2.32542 | 1.81215 |
| n_{1970} | 1.97009 | 1.81904 |
| n_{1530} | 1.52958 | 1.82677 |
| n_{1129} | 1.12864 | 1.83449 |
| n_t | 1.01398 | 1.83736 |
| n_s | 0.85211 | 1.84276 |
| $n_{A'}$ | 0.76819 | 1.84667 |
| n_f | 0.70652 | 1.85038 |
| n_C | 0.65627 | 1.85416 |
| $n_{C'}$ | 0.64385 | 1.85523 |
| $n_{\text{He-Ne}}$ | 0.6328 | 1.85624 |
| n_D | 0.58929 | 1.86080 |
| n_d | 0.58756 | 1.86100 |
| n_e | 0.54607 | 1.86650 |
| n_F | 0.48613 | 1.87737 |
| $n_{F'}$ | 0.47999 | 1.87875 |
| $n_{\text{He-Cd}}$ | 0.44157 | 1.88899 |
| n_g | 0.435835 | 1.89080 |
| n_h | 0.404656 | 1.90238 |
| n_i | 0.365015 | |

| Constants of Dispersion Formula | |
|---------------------------------|----------------|
| A_1 | 2.00621420E+00 |
| A_2 | 3.47029888E-01 |
| A_3 | 1.41688382E+00 |
| B_1 | 1.05499238E-02 |
| B_2 | 4.45845013E-02 |
| B_3 | 1.05995250E+02 |

| Chemical Properties | |
|---|------|
| Water Resistance(Powder) Group RW(P) | 1 |
| Acid Resistance(Powder) Group RA(P) | 3 |
| Weathering Resistance(Surface) Group W(S) | 3 |
| Acid Resistance(Surface) Group SR | 51.2 |
| Phosphate Resistance PR | 2.0 |

| Mechanical Properties | |
|--------------------------|---------|
| Young's Modulus E (GPa) | 112.1 |
| Rigidity Modulus G (GPa) | 43.0 |
| Poisson's Ratio σ | 0.305 |
| Knoop Hardness Hk[Class] | 650 * 7 |
| Abrasion Aa | 81 |

| Partial Dispersions | |
|---------------------|----------|
| n_C-n_t | 0.016800 |
| $n_C-n_{A'}$ | 0.007490 |
| n_d-n_C | 0.006839 |
| n_e-n_C | 0.012343 |
| n_g-n_d | 0.029797 |
| n_g-n_F | 0.013427 |
| n_h-n_g | 0.011584 |
| n_i-n_g | |
| n_C-n_t | 0.017873 |
| $n_e-n_{C'}$ | 0.011270 |
| $n_{F'}-n_e$ | 0.012247 |
| $n_i-n_{F'}$ | |

| Relative Partial Dispersions | |
|------------------------------|--------|
| $\theta_{C,t}$ | 0.7239 |
| $\theta_{C,A'}$ | 0.3227 |
| $\theta_{d,C}$ | 0.2947 |
| $\theta_{e,C}$ | 0.5318 |
| $\theta_{g,d}$ | 1.2839 |
| $\theta_{g,F}$ | 0.5785 |
| $\theta_{h,g}$ | 0.4991 |
| $\theta_{i,g}$ | |
| $\theta'_{C,t}$ | 0.7600 |
| $\theta'_{e,C}$ | 0.4792 |
| $\theta'_{F,e}$ | 0.5208 |
| $\theta'_{i,F'}$ | |

| Deviation of Relative Dispersions $\Delta\theta$ from "Normal" | |
|--|---------|
| $\Delta \theta_{C,t}$ | 0.0032 |
| $\Delta \theta_{C,A'}$ | 0.0019 |
| $\Delta \theta_{g,d}$ | -0.0038 |
| $\Delta \theta_{g,F}$ | -0.0029 |
| $\Delta \theta_{i,g}$ | |

| Thermal Properties | |
|--|-------|
| Strain Point StP (°C) | 560 |
| Annealing Point AP (°C) | 583 |
| Transformation Temperature Tg (°C) | 593 |
| Yield Point At (°C) | 628 |
| Softening Point SP (°C) | 664 |
| Expansion Coefficients (-30~+70°C) | 62 |
| α (10 ⁻⁷ K ⁻¹) (+100~+300°C) | 77 |
| Thermal Conductivity λ W/(m·K) | 0.817 |

| Coloring | | | |
|----------------|-----|-------------|-----|
| λ_{80} | | λ_5 | 350 |
| λ_{70} | 390 | | |

| Internal transmission | | | |
|-----------------------|-----|------------------|-----|
| $\lambda_{0.80}$ | 385 | $\lambda_{0.05}$ | 349 |

| CCI | | |
|------|------|------|
| B | G | R |
| 0.00 | 1.80 | 1.88 |

| Internal Transmittance | |
|------------------------|-------------|
| $\lambda(\text{nm})$ | τ 10mm |
| 280 | |
| 290 | |
| 300 | |
| 310 | |
| 320 | |
| 330 | |
| 340 | |
| 350 | 0.06 |
| 360 | 0.31 |
| 370 | 0.58 |
| 380 | 0.75 |
| 390 | 0.85 |
| 400 | 0.908 |
| 420 | 0.957 |
| 440 | 0.975 |
| 460 | 0.983 |
| 480 | 0.989 |
| 500 | 0.993 |
| 550 | 0.998 |
| 600 | 0.998 |
| 650 | 0.999 |
| 700 | 0.999 |
| 800 | 0.999 |
| 900 | 0.998 |
| 1000 | 0.999 |
| 1200 | 0.999 |
| 1400 | 0.997 |
| 1600 | 0.996 |
| 1800 | 0.989 |
| 2000 | 0.970 |
| 2200 | 0.923 |
| 2400 | 0.74 |

| Temperature Coefficients of Refractive Index | | | | | | | |
|--|--|-----|-------|-----|-----|-----|------|
| Range of Temperature (°C) | $\Delta n/\Delta T$ relative (10 ⁻⁶ K ⁻¹) | | | | | | |
| | t | C' | He-Ne | D | e | F' | g |
| -40~-20 | 5.4 | 6.4 | 6.4 | 6.7 | 7.1 | 8.0 | 9.0 |
| -20~ 0 | 5.4 | 6.4 | 6.5 | 6.8 | 7.2 | 8.2 | 9.2 |
| 0~20 | 5.4 | 6.5 | 6.5 | 6.9 | 7.3 | 8.3 | 9.4 |
| 20~40 | 5.4 | 6.5 | 6.6 | 6.9 | 7.4 | 8.4 | 9.6 |
| 40~60 | 5.5 | 6.7 | 6.7 | 7.1 | 7.6 | 8.7 | 9.9 |
| 60~80 | 5.7 | 6.9 | 6.9 | 7.3 | 7.8 | 8.9 | 10.2 |

| Other Properties | |
|--|------|
| Photoelastic Constant β nm/(cm·10 ⁵ Pa) | 1.71 |
| Specific Gravity d | 4.89 |
| Remarks | |

OHARA 23-05

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※The name of the glass type is the model number assigned based on the main components of the composition: large, medium, small refractive index and serial number.