OPTICAL GEL CODE 0608
30-NOV-17

n (589.3nm) 25°C = 1.457

TYPICAL CHARACTERISTICS

COMPOSITION…………………………. Aliphatic Hydrocarbons and Gelling Agents

APPEARANCE………………………….. Colorless Gel

COLOR STABILITY IN DIRECT SUN ……… No visible change after 9 years

INDEX CHANGE RATE BY EVAPORATION ……… Very Low: 0.0000 expected exposed surface area to volume ratio of 0.2 cm³/cm³ @ 25°C for 32 days

ODOR………………………………………… None

FREEZING POINT °C ………………….. < -67

BOILING POINT °C @ 760mm Hg …………. >416

FLASH POINT °C C.O.C. …………………. >245

DENSITY g/cm³ @ 25°C ………………….. 0.878

DENSITY TEMP. COEFFICIENT g/cm³°C ……... 0.0007

COEF. OF THERM. EXP. cc/cc/°C ………….. 0.0008

OIL SEPERATION 100°C for 24 hours, % by weight….. <0.05

WEIGHT LOSS 100°C for 24 Hours, %……………. <0.05

WATER IMMERSION………………………No effect

PARTLY SOLUBLE: Most Organic Solvents (to remove from glass use Kimwipe & Xylene)

INSOLUBLE: Acetone, Ethanol, Water

COMPATIBLE: 10-month immersion at 25°C: Acrylic, Cellulose Acetate, Epoxy, Mylar, Nylon, Polycarbonate, Polyester, Polyethylene, Polypropylene, Polystyrene, Polyurethane, Polyvinyl Chloride, Phenolic, Teflon, Neoprene, Fluorosilicone (Silastic 730 RTV), Silicone (Sylgard 184, 3140 RTV) Rubbers, Aluminum, Copper, Brass, Steel; (tests done on one example of each).

INCOMPATIBLE: Latex Rubber, Tygon types: S-50-HL, R-3603, B-44-3

CAUCHY EQUATION: Refractive index as a function of wavelength at 25.0°C

\[ W = \text{wavelength (nm)} \]

\[ n(W) = 1.4451400 + \left( \frac{4.3176E+03}{W^2} \right) + \left( -\frac{1.80659E+07}{W^4} \right) / W^4 \]

<table>
<thead>
<tr>
<th>SOURCE OR SPECTRAL LINE</th>
<th>WAVELENGTH (nm)</th>
<th>25°C REFRACTIVE INDEX</th>
<th>% TRANSMITTANCE 25°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>near UV cut off</td>
<td>320</td>
<td>1.486</td>
<td>70</td>
</tr>
<tr>
<td>i ( Hg )</td>
<td>365</td>
<td>1.477</td>
<td>98</td>
</tr>
<tr>
<td>h ( Hg )</td>
<td>404.7</td>
<td>1.471</td>
<td>99</td>
</tr>
<tr>
<td>F’ ( Cd )</td>
<td>480</td>
<td>1.464</td>
<td>100</td>
</tr>
<tr>
<td>F ( H )</td>
<td>486.1</td>
<td>1.463</td>
<td>100</td>
</tr>
<tr>
<td>e ( Hg )</td>
<td>546.1</td>
<td>1.459</td>
<td>100</td>
</tr>
<tr>
<td>D (Na D1, D2 mean)</td>
<td>589.3</td>
<td>1.457</td>
<td>100</td>
</tr>
<tr>
<td>HeNe laser</td>
<td>632.8</td>
<td>1.456</td>
<td>100</td>
</tr>
<tr>
<td>C’ ( Cd )</td>
<td>643.9</td>
<td>1.455</td>
<td>100</td>
</tr>
<tr>
<td>C ( H )</td>
<td>656.3</td>
<td>1.455</td>
<td>100</td>
</tr>
<tr>
<td>Ruby Laser</td>
<td>694.3</td>
<td>1.454</td>
<td>100</td>
</tr>
<tr>
<td>GaAs laser</td>
<td>840</td>
<td>1.451</td>
<td>100</td>
</tr>
<tr>
<td>Nd: YAG laser</td>
<td>1064.8</td>
<td>1.449</td>
<td>100</td>
</tr>
<tr>
<td>Diode</td>
<td>1300</td>
<td>1.448</td>
<td>99</td>
</tr>
<tr>
<td>Diode</td>
<td>1550</td>
<td>1.447</td>
<td>98</td>
</tr>
</tbody>
</table>

\[ n_F - n_C = 0.008 \]

Abbe νD: \( n_D - 1)/(n_F - n_C) \] = 57

Temp. coef: \( \text{dn}_D/\text{dt} \) 15 - 35°C = -0.00035