



**Cargille Laboratories**  
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Catalog # 1809

Typical Characteristics

Refractive Index Liquid                    **Series A**  
Refractive Index                            **1.55400**        at    589.3 nm    and        25        ° C

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Composition                                Aliphatic / Alicyclic Hydrocarbons and Hydrogenated Terphenyl  
Appearance                                Colorless to light yellow liquid  
Odor    Slight  
Color Stability                              In Direct Sun: may slightly darken after 1 day, more after 4 months, dark after 6 years  
Index Change Rate                        Low : -0.00002 to +0.00005  
by Evaporation                            expected after 32 days with exposed surface area to volume ratio of 0.2 cm<sup>2</sup>/cc @ 25 °C

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Index at 20°C                                1.55608  
Pour Point                                    < -7 °C  
Boiling Point                                > 262 °C ( 760 mm Hg )  
Flash Point                                  > 138 °C ( COC )  
Brix Value (Per ICUMSA)                >100 at 20°C  
Density                                        0.978 g / cc at 25 °C  
Density Temp Coef                        -0.0007 g / cc / °C  
Coef of Thermal Expansion              0.0007 cc / cc / °C  
Thermal Conductivity                      n/a cal / sec / cm<sup>2</sup> / °C - 1 cm thickness  
  
Viscosity                                      66 cSt at 25 °C                                64 cP at 25 °C  
Surface Tension                              35 dynes/cm at 25 °C

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Soluble                                        Carbon Tetrachloride, Ethyl Ether, Heptane, Methylene Chloride, Naphtha, Toluene, Turpentine, Xylene  
  
Partly Soluble                                Acetone, Ethanol  
  
Insoluble                                        Water

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Compatible                                    10 Month Immersion at 25 °C : Acrylic, Cellulose Acetate, Epoxy, Mylar, Nylon, Polycarbonate, Polyester, Polyethylene, Polypropylene, Polyurethane, Polyvinyl Chloride, Phenolic, Teflon, Silicone ( Sylgard 184 ) and Fluorosilicone ( 730 RTV ) Rubbers, Tygon F-4040-A, Tygothane; Aluminum, Brass, Copper, Steel  
  
Incompatible                                  Polystyrene, Latex, Neoprene, Silicone ( 3140 RTV ) Rubber, Tygon S-50-HL, R-3603, B-44-3

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Refractive Index Liquid **Series A**  
 Refractive Index **1.55400** at 589.3 nm and 25 °C

Cauchy Coefficients  
 A 1.531167E+00 B 7.1653E+03 C 2.6526666E+08

Cauchy Equation at 25°C  $A + B / \lambda^2 + C / \lambda^4$  ( $\lambda$  = Wavelength in nm)

| Wavelength (nm) | Refractive Index | Transmittance |      |      |       |
|-----------------|------------------|---------------|------|------|-------|
|                 |                  | 0.1 mm        | 1 mm | 1 cm | 10 cm |
| 225.0           | -                | -             | -    | -    | -     |
| 240.0           | -                | -             | -    | -    | -     |
| 250.0           | -                | -             | -    | -    | -     |
| 270.0           | -                | -             | -    | -    | -     |
| 290.0           | -                | -             | -    | -    | -     |
| 308.0           | -                | -             | -    | -    | -     |
| 355.0           | 1.605            | 76            | 7    | 0    | 0     |
| 365.0           | 1.600            | 96            | 69   | 3    | 0     |
| 406.0           | 1.5844           | 99            | 92   | 43   | 0     |
| 473.0           | 1.5685           | 100           | 99   | 91   | 37    |
| 532.0           | 1.5598           | 100           | 100  | 97   | 70    |
| 589.3           | 1.5540           | 100           | 100  | 98   | 84    |
| 632.8           | 1.5507           | 100           | 100  | 99   | 91    |
| 656.3           | 1.5492           | 100           | 100  | 100  | 95    |
| 790.0           | 1.5433           | 100           | 100  | 100  | 98    |
| 828.0           | 1.5422           | 100           | 100  | 100  | 99    |
| 981.0           | 1.539            | 100           | 100  | 97   | 74    |
| 1310.0          | 1.535            | 100           | 99   | 90   | 35    |
| 1550.0          | 1.534            | 100           | 98   | 84   | 18    |
| 2500.0          | -                | -             | -    | -    | -     |
| 3700.0          | -                | -             | -    | -    | -     |

( $n_F - n_C$ ) 0.0170

Abbe  $v_D$  32.6

Temp. Coefficient -0.000417  $dn_D/dt$  (15 - 35 °C)

Shelf Life: 5 Years from Date of Manufacture for Unopened Bottles, Half the Remaining Time after Opening