



**Cargille Laboratories**  
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Catalog # 1809

Typical Characteristics

Refractive Index Liquid                    **Series A**  
Refractive Index                            **1.46600**        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                                1.46795  
Pour Point                                    < -7 °C  
Boiling Point                                > 262 °C ( 760 mm Hg )  
Flash Point                                    > 138 °C ( COC )  
**Brix Value (Per ICUMSA)**                    **71.0 at 20°C**  
Density                                        0.842 g / cc at 25 °C  
Density Temp Coef                            -0.0007 g / cc / °C  
Coef of Thermal Expansion                    0.0008 cc / cc / °C  
Thermal Conductivity                            n/a cal / sec / cm<sup>2</sup> / °C - 1 cm thickness  
  
Viscosity                                        19 cSt at 25 °C                                16 cP at 25 °C  
Surface Tension                                29 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 **1.46600** at 589.3 nm and 25 °C

Cauchy Coefficients  
 A 1.453239E+00 B 4.2707E+03 C 5.5911176E+07

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           | 1.491            | 98            | 79   | 9    | 0     |
| 365.0           | 1.488            | 100           | 97   | 72   | 4     |
| 406.0           | 1.4812           | 100           | 99   | 92   | 42    |
| 473.0           | 1.4734           | 100           | 100  | 99   | 86    |
| 532.0           | 1.4690           | 100           | 100  | 99   | 93    |
| 589.3           | 1.4660           | 100           | 100  | 99   | 94    |
| 632.8           | 1.4643           | 100           | 100  | 99   | 95    |
| 656.3           | 1.4635           | 100           | 100  | 100  | 95    |
| 790.0           | 1.4602           | 100           | 100  | 100  | 99    |
| 828.0           | 1.4596           | 100           | 100  | 100  | 96    |
| 981.0           | 1.458            | 100           | 99   | 95   | 58    |
| 1310.0          | 1.456            | 100           | 99   | 88   | 28    |
| 1550.0          | 1.455            | 100           | 98   | 81   | 13    |
| 2500.0          | -                | -             | -    | -    | -     |
| 3700.0          | -                | -             | -    | -    | -     |

( $n_F - n_C$ ) 0.0089

Abbe  $v_D$  52.6

Temp. Coefficient -0.000391  $dn_D/dt$  (15 - 35 °C)

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