



**Cargille Laboratories**  
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Catalog # 1806

Typical Characteristics

Refractive Index Liquid                    **Series AA**  
Refractive Index                            **1.45200**      at    589.3 nm    and            25            ° C

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Composition                                Siloxane and Aliphatic / Alicyclic Hydrocarbons  
Appearance                                Colorless Liquid  
Odor    None  
Color Stability                                In Direct Sun: no visible change after 10 years  
Index Change Rate                        Very Low : 0.00000 to +0.00001  
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                                1.45395  
Pour Point                                    < -7 °C  
Boiling Point                                > 200 °C ( 760 mm Hg )  
Flash Point                                  > 138 °C ( COC )  
Brix Value (Per ICUMSA)                65.2 at 20°C  
Density                                        0.838 g / cc at 25 °C  
Density Temp Coef                        -0.0007 g / cc / °C  
Coef of Thermal Expansion            0.0008 cc / cc / °C  
Thermal Conductivity                    0.0003 cal / sec / cm<sup>2</sup> / °C - 1 cm thickness  
  
Viscosity                                      16 cSt at 25 °C                                14 cP at 25 °C  
Surface Tension                            24 dynes/cm at 25 °C

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

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Compatible                                    1 Month Immersion at 25 °C : Acrylic, Cellulose Acetate, Epoxy, Mylar, Nylon, Polycarbonate, Polyester, Polyethylene, Polypropylene, Polystyrene, Polyurethane, Polyvinyl Chloride, Phenolic, Teflon, Neoprene and Fluorosilicone ( Silastic 730 RTV ) Rubbers ; Tygon F-4040-A, Tygothane, Aluminum, Brass, Copper, Steel  
  
Incompatible                                    Latex, Silicone ( Sylgard 184 and 3140 RTV ) Rubber, Tygon S-50-HL, R-3603, B-44-3

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Refractive Index Liquid **Series AA**  
 Refractive Index **1.45200** at 589.3 nm and 25 °C

Cauchy Coefficients  
 A 1.440171E+00 B 4.0269E+03 C 2.8077796E+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           | 1.53             | 94            | 54   | 0    | 0     |
| 240.0           | 1.52             | 99            | 88   | 29   | 0     |
| 250.0           | 1.51             | 99            | 93   | 50   | 0     |
| 270.0           | 1.50             | 99            | 90   | 35   | 0     |
| 290.0           | 1.49             | 100           | 98   | 83   | 16    |
| 308.0           | 1.49             | 100           | 98   | 84   | 18    |
| 355.0           | 1.474            | 100           | 100  | 98   | 83    |
| 365.0           | 1.472            | 100           | 100  | 99   | 87    |
| 406.0           | 1.4656           | 100           | 100  | 99   | 87    |
| 473.0           | 1.4587           | 100           | 100  | 99   | 94    |
| 532.0           | 1.4548           | 100           | 100  | 100  | 95    |
| 589.3           | 1.4520           | 100           | 100  | 100  | 95    |
| 632.8           | 1.4504           | 100           | 100  | 100  | 95    |
| 656.3           | 1.4497           | 100           | 100  | 100  | 95    |
| 790.0           | 1.4467           | 100           | 100  | 100  | 99    |
| 828.0           | 1.4461           | 100           | 100  | 100  | 96    |
| 981.0           | 1.444            | 100           | 99   | 95   | 59    |
| 1310.0          | 1.443            | 100           | 99   | 89   | 30    |
| 1550.0          | 1.442            | 100           | 98   | 79   | 10    |
| 2500.0          | -                | -             | -    | -    | -     |
| 3700.0          | -                | -             | -    | -    | -     |

( $n_F - n_C$ ) 0.0080

Abbe  $v_D$  56.2

Temp. Coefficient -0.000390  $dn_D/dt$  (15 - 35 °C)

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