



**Cargille Laboratories**  
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Catalog # 1803

Typical Characteristics

Refractive Index Liquid      **Series AAA**  
Refractive Index              **1.34000**      at    589.3 nm      and      25      ° C

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Composition                      Perfluorocarbon and Chlorofluorocarbon ( not the types thought to affect the ozone )  
Appearance                      Colorless Liquid  
Odor                                      None  
Color Stability                      In Direct Sun: no visible change after 10 years  
Index Change Rate                Moderate : -0.00030 to +0.00009  
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                      1.34169  
Pour Point                              < -20 °C  
Boiling Point                        > 215 °C ( 760 mm Hg )  
Flash Point                            None °C ( COC )  
Brix Value (Per ICUMSA)        6.0 at 20°C  
Density                                1.924 g / cc at 25 °C  
Density Temp Coef                -0.0020 g / cc / °C  
Coef of Thermal Expansion      0.0010 cc / cc / °C  
Thermal Conductivity              0.00027 cal / sec / cm<sup>2</sup> / °C - 1 cm thickness  
  
Viscosity                              15 cSt at 25 °C                              29 cP at 25 °C  
Surface Tension                      18 dynes/cm at 25 °C

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Soluble                                Other Chlorofluorocarbons, Galden PFS2, Fluoroclean HE

Partly Soluble                      Most organic solvents

Insoluble                              Water

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

Incompatible                      Burna-S, Natural, and some Silicone Rubbers; Tygon S-50-HL, R-3603, B-44-3; Chlorotrifluoro Ethylene Polymers, Aluminum

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Refractive Index Liquid **Series AAA**  
 Refractive Index **1.34000** at 589.3 nm and 25 °C

Cauchy Coefficients  
 A 1.332474E+00 B 2.8803E+03 C -9.2566080E+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	1.35	99	91	40	0
250.0	1.35	99	95	59	0
270.0	1.35	100	98	82	14
290.0	1.35	100	99	89	32
308.0	1.35	100	99	93	48
355.0	1.350	100	100	96	69
365.0	1.349	100	100	98	81
406.0	1.3465	100	100	98	85
473.0	1.3435	100	100	100	95
532.0	1.3415	100	100	100	95
589.3	1.3400	100	100	100	97
632.8	1.3391	100	100	100	98
656.3	1.3387	100	100	100	98
790.0	1.3369	100	100	100	98
828.0	1.3365	100	100	100	96
981.0	1.335	100	100	100	96
1310.0	1.334	100	100	100	96
1550.0	1.334	100	100	99	88
2500.0	1.33	100	99	90	36
3700.0	1.33	98	78	9	0

( $n_F - n_C$ ) 0.0043

Abbe  $v_D$  78.3

Temp. Coefficient -0.000338  $dn_D/dt$  (15 - 35 °C)

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