



**Cargille Laboratories**  
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Catalog # 1803

Typical Characteristics

Refractive Index Liquid      **Series AAA**  
Refractive Index              **1.30500**      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                      1.30667  
Pour Point                              < -20 °C  
Boiling Point                        > 215 °C ( 760 mm Hg )  
Flash Point                            None °C ( COC )  
Brix Value (Per ICUMSA)            NA  
Density                                1.937 g / cc at 25 °C  
Density Temp Coef                  -0.0022 g / cc / °C  
Coef of Thermal Expansion        0.0011 cc / cc / °C  
Thermal Conductivity                0.00019 cal / sec / cm<sup>2</sup> / °C - 1 cm thickness  
  
Viscosity                                14 cSt at 25 °C                                      28 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 **1.30500** at 589.3 nm and 25 °C

Cauchy Coefficients  
 A 1.298417E+00 B 2.6500E+03 C -1.2643060E+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	1.31	99	93	51	0
250.0	1.31	100	96	65	1
270.0	1.31	100	99	89	33
290.0	1.31	100	99	95	59
308.0	1.31	100	100	97	75
355.0	1.311	100	100	99	89
365.0	1.311	100	100	99	93
406.0	1.3098	100	100	99	95
473.0	1.3077	100	100	100	98
532.0	1.3062	100	100	100	98
589.3	1.3050	100	100	100	99
632.8	1.3042	100	100	100	99
656.3	1.3039	100	100	100	99
790.0	1.3023	100	100	100	99
828.0	1.3020	100	100	100	95
981.0	1.301	100	100	100	95
1310.0	1.300	100	100	100	95
1550.0	1.299	100	100	98	83
2500.0	1.30	100	99	88	26
3700.0	1.30	97	71	3	0

( $n_F - n_C$ ) 0.0035

Abbe  $v_D$  87.7

Temp. Coefficient -0.000334  $dn_D/dt$  (15 - 35 °C)

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