



**Cargille Laboratories**  
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Catalog # 1803

Typical Characteristics

Refractive Index Liquid      **Series AAA**  
Refractive Index              **1.37500**      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                      1.37671  
Pour Point                              < -20 °C  
Boiling Point                        > 215 °C ( 760 mm Hg )  
Flash Point                            None °C ( COC )  
Brix Value (Per ICUMSA)        27.5 at 20°C  
Density                                1.911 g / cc at 25 °C  
Density Temp Coef                -0.0018 g / cc / °C  
Coef of Thermal Expansion      0.0009 cc / cc / °C  
Thermal Conductivity            0.00035 cal / sec / cm<sup>2</sup> / °C - 1 cm thickness  
  
Viscosity                              16 cSt at 25 °C                              31 cP at 25 °C  
Surface Tension                    19 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 **1.37500** at 589.3 nm and 25 °C

Cauchy Coefficients  
 A 1.366530E+00 B 3.1105E+03 C -5.8701558E+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	1.40	99	89	31	0
250.0	1.40	99	94	53	0
270.0	1.40	100	97	75	6
290.0	1.40	100	98	84	17
308.0	1.39	100	99	89	31
355.0	1.388	100	99	94	53
365.0	1.387	100	100	97	70
406.0	1.3832	100	100	97	76
473.0	1.3793	100	100	99	93
532.0	1.3768	100	100	99	93
589.3	1.3750	100	100	99	95
632.8	1.3739	100	100	100	96
656.3	1.3734	100	100	100	96
790.0	1.3714	100	100	100	98
828.0	1.3709	100	100	100	97
981.0	1.370	100	100	100	97
1310.0	1.368	100	100	100	97
1550.0	1.368	100	100	99	93
2500.0	1.37	100	99	93	49
3700.0	1.37	99	86	23	0

( $n_F - n_C$ ) 0.0052

Abbe  $v_D$  72.0

Temp. Coefficient -0.000343  $dn_D/dt$  (15 - 35 °C)

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