



Cargille Laboratories
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Catalog # 1803

Typical Characteristics

Refractive Index Liquid **Series AAA**
Refractive Index **1.39500** at 589.3 nm and 25 ° C

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 cm²/cc @ 25 °C

Index at 20°C 1.39673
Pour Point < -20 °C
Boiling Point > 215 °C (760 mm Hg)
Flash Point None °C (COC)
Brix Value (Per ICUMSA) 38.4 at 20°C
Density 1.903 g / cc at 25 °C
Density Temp Coef -0.0017 g / cc / °C
Coef of Thermal Expansion 0.0009 cc / cc / °C
Thermal Conductivity 0.00040 cal / sec / cm² / °C - 1 cm thickness

Viscosity 17 cSt at 25 °C 33 cP at 25 °C
Surface Tension 20 dynes/cm at 25 °C

Soluble Other Chlorofluorocarbons, Galden PFS2, Fluoroclean HE

Partly Soluble Most organic solvents

Insoluble Water

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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Cauchy Coefficients
 A 1.385990E+00 B 3.2421E+03 C -3.9350403E+07

Cauchy Equation at 25°C $A + B / \lambda^2 + C / \lambda^4$ (λ = Wavelength in nm)

Wavelength (nm)	Refractive Index	Transmittance			
		0.1 mm	1 mm	1 cm	10 cm
225.0	-	-	-	-	-
240.0	1.43	99	88	27	0
250.0	1.43	99	93	50	0
270.0	1.42	100	97	71	3
290.0	1.42	100	98	81	12
308.0	1.42	100	99	87	24
355.0	1.409	100	99	92	46
365.0	1.408	100	100	96	65
406.0	1.4042	100	100	97	72
473.0	1.3997	100	100	99	91
532.0	1.3970	100	100	99	91
589.3	1.3950	100	100	99	94
632.8	1.3938	100	100	100	95
656.3	1.3933	100	100	100	95
790.0	1.3911	100	100	100	97
828.0	1.3906	100	100	100	97
981.0	1.389	100	100	100	97
1310.0	1.388	100	100	100	97
1550.0	1.387	100	100	100	96
2500.0	1.39	100	99	95	59
3700.0	1.39	99	91	40	0

($n_F - n_C$) 0.0057

Abbe v_D 69.3

Temp. Coefficient -0.000345 dn_D/dt (15 - 35 °C)

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