CARGILLE LABORATORIES

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FUSED SILICA MATCHING LIQUID CODE 50350 30-NOV-17

n (589.3nm) 25ºC = 1.4587

TYPICAL CHARACTERISTICS

COMPOSITION …….. Aliphatic and Alicyclic Hydrocarbons
APPEARANCE …….. Colorless Liquid
COLOR STABILITY IN DIRECT SUN …….. No visible change after 10 years
INDEX CHANGE RATE BY EVAPORATION …….. Very Low: 0.00001 expected
exposed surface area to volume ratio of 0.2 cm²/cc @ 25ºC for 32 days
ODOR ……. None
FREEZING POINT ºC …….. < -7
BOILING POINT ºC @ 760mm Hg …… > 262
FLASH POINT ºC C.O.C. …….. > 138
DENSITY g/cc @ 25ºC …….. 0.831
DENSITY TEMP. COEFFICIENT g/cc/ºC ……... -0.0007
COEF. OF THERM. EXP. cc/cc/ºC ……..……. 0.0008
VISCOSITY @ 25ºC …….. 19 cSt
SURFACE TENSION dynes/cm @ 25°C……. 29
SOLUBLE: Carbon Tetrachloride, Diethyl Ether, Freon, Heptane, Naphtha, Toluene, Turpentine, Xylene
PARTLY SOLUBLE: Most Organic Solvents
INSOLUBLE: Ethanol, Water
COMPATIBLE 10-month immersion at 25ºC: Acrylic, Cellulose Acetate, Epoxy, Mylar, Nylon, Polycarbonate, Polyester, Polyethylene, Polypropylene, Polystyrene, Polyurethane, Polyvinyl Chloride, Phenolic, Teflon, Neoprene, Fluorosilicone (Silastic 730 RTV), Silicone (Sylgard 184), Rubbers, Tygon F-4040-A, Tygothane, Aluminum, Copper, Brass, Steel; (tests done on one example of each).
INCOMPATIBLE: Latex Rubber, Silicone (Sylgard 3140 RTV) Rubbers, Tygon except F-4040-A

CAUCHY EQUATION: Refractive index as a function of wavelength at 25.0ºC

W = wavelength (nm)

$n(W) = 1.44690 + (3.98963E+03) / W^2 + (3.75775E+07) / W^4$

SOURCE OR SPECTRAL LINE	WAVELENGTH (nm)	REFRACTIVE INDEX 25ºC	% TRANSMITTANCE 25ºC 1 mm	1 cm	10 cm
near UV cut off	225	1.54	48	0	0
excimer	248	1.52	93	50	0
local dip	270	1.51	89	31	0
Excimer	308	1.493	98	84	18
N Laser	337	1.485	100	98	86
i (Hg)	365	1.4790	100	99	93
F (H)	486.1	1.4645	100	100	95
e (Hg)	546.1	1.4607	100	100	95
D (Na:D1,D2 mean)	589.3	1.4587	100	100	95
HeNe Laser	632.8	1.4571	100	100	95
C (H)	656.3	1.4564	100	100	99
GaAs laser	840	1.4526	100	100	96
Nd: YAG laser	1064.8	1.450	99	95	57
Diode	1300	1.449	99	88	29
Diode	1550	1.449	98	81	12

$n_F - n_C$	=	0.0081
Abbe ν_D: $(n_D - 1)/(n_F - n_C)$	=	56.7
Temp. coef: dn_D/dt 15 - 35ºC	=	-0.000386