

REFRACTIVE INDEX LIQUID SERIES E

n(5893 Å) 25°C = 1.5950

TYPICAL CHARACTERISTICS

COMPOSITION Hydrogenated Terphenyl and
1-Bromonaphthalene

APPEARANCE Light yellow liquid

ODOR Slight: unpleasant

COLOR STABILITY In sun: may slightly darken after 1 day,
becoming very dark after 4 months, and dark with precipitate after 6 years

INDEX CHANGE RATE BY EVAPORATION . Low: -0.00003 to +0.00003 expected:
exposed surface area to volume ratio of 0.2 cm²/cc @ 25°C for 32 days

POUR POINT °C <6

BOILING POINT °C @ 760mm Hg >279

FLASH POINT °C CC >113

DENSITY g/cc @ 25°C 1.145

DENSITY TEMP. COEF. g/cc/°C -0.0008

COEF. OF THERM. EXP. cc/cc/°C 0.0007

VISCOSITY centistokes @ 25°C 35 (ca. 53 @ 15°C, 23 @ 35°C)

SURFACE TENSION dynes/cm @ 25°C .. 38

SOLUBLE: Acetone, Carbon Tetrachloride, Ethyl Ether, Freon TF, Heptane,
Methylene Chloride, Naphtha, Toluene, Turpentine, Xylene

PARTLY SOLUBLE: Ethanol; INSOLUBLE: Water

COMPATIBLE 9 month immersion @ 25°C: Acrylic, Cellulose Acetate, Epoxy,
Mylar, Nylon, Polyester, Polyethylene, Polypropylene, Polyurethane,
Polyvinyl Chloride, Phenolic, Teflon; Silicone (Sylgard 184, 3140 RTV)
and Fluorosilicone (Silastic 730 RTV) Rubbers; Tygothane; Aluminum, Steel
(tests done on one example of each)

INCOMPATIBLE: Polycarbonate, Polystyrene, Latex, Neoprene, Tygon (all types
except Tygothane), (Acrylic @ 55°C). May tarnish Copper and Brass

TOXICITY Moderate in our experience (request MSDS)

CAUCHY EQUATION: refractive index as a function of wavelength at 25°C

W = wavelength in angstroms (Å)

$$n(W) = 1.566011 + (865782.5)/W^2 + (4.892487E+12)/W^4$$

SOURCE OR SPECTRAL LINE	WAVELENGTH (angstroms)	REFRACTIVE INDEX 25°C	% TRANSMITTANCE 25°C		
			1mm	1cm	10cm
near UV cut off	3500	1.669	30	0	0
i (Hg)	3650	1.659	71	3	0
h (Hg)	4047	1.6371	92	42	0
F' (Cd)	4800	1.6128	99	87	26
F (H)	4861	1.6114	99	88	29
e (Hg)	5461	1.6005	100	96	69
D (Na D1, D2 mean)	5893	1.5950	100	98	82
HeNe laser	6328	1.5907	100	99	88
C' (Cd)	6439	1.5897	100	99	88
C (H)	6563	1.5888	100	99	91
Ruby laser	6943	1.5861	100	99	93
GaAs laser	8400	1.5793	100	99	95
Nd:YAG laser	10648	1.574	100	98	81
Diode	13000	1.571	99	92	42
Diode	15500	1.570	99	87	26

$n_F - n_C$ = 0.0227

Abbe v_D : $(n_D - 1)/(n_F - n_C)$ = 26.3

Temp. coef: dn_D/dt 15-35°C = -0.000436

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