

REFRACTIVE INDEX LIQUID SERIES E

n(5893 Å) 25°C =1.5900

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 1.117

DENSITY TEMP. COEF. g/cc/°C -0.0008

COEF. OF THERM. EXP. cc/cc/°C 0.0007

VISCOSITY centistokes @ 25°C 42 (ca. 62 @ 15°C, 27 @ 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)

$$n(W) = 1.561807 + (848321)/W^2 + (4.541434E+12)/W^4$$

SOURCE OR SPECTRAL LINE	WAVELENGTH (angstroms)	REFRACTIVE INDEX 25°C	% TRANSMITTANCE 25°C		
			1mm	1cm	10cm
near UV cut off	3500	1.661	28	0	0
i (Hg)	3650	1.651	70	3	0
h (Hg)	4047	1.6306	91	41	0
F' (Cd)	4800	1.6072	99	88	26
F (H)	4861	1.6058	99	89	30
e (Hg)	5461	1.5954	100	96	68
D (Na D1,D2 mean)	5893	1.5900	100	98	82
HeNe laser	6328	1.5858	100	99	88
C' (Cd)	6439	1.5849	100	99	88
C (H)	6563	1.5840	100	99	92
Ruby laser	6943	1.5814	100	99	94
GaAs laser	8400	1.5747	100	100	96
Nd:YAG laser	10648	1.570	100	98	80
Diode	13000	1.567	99	92	41
Diode	15500	1.565	99	87	24

$n_F - n_C$ = 0.0219

Abbe v_D : $(n_D - 1)/(n_F - n_C)$ = 27.0

Temp. coef: dn_D/dt 15-35°C = -0.000433

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