

REFRACTIVE INDEX LIQUID SERIES E

n(5893 Å) 25°C =1.6350

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 1.361

DENSITY TEMP. COEF. g/cc/°C -0.0009

COEF. OF THERM. EXP. cc/cc/°C 0.0006

VISCOSITY centistokes @ 25°C 9 (ca. 11 @ 15°C, 7 @ 35°C)

SURFACE TENSION dynes/cm @ 25°C .. 40

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)

$$n(W) = 1.599651 + (1005622)/W^2 + (7.705853E+12)/W^4$$

SOURCE OR SPECTRAL LINE	WAVELENGTH (angstroms)	REFRACTIVE INDEX 25°C	% TRANSMITTANCE 25°C		
			1mm	1cm	10cm
near UV cut off	3500	1.733	53	0	0
i (Hg)	3650	1.719	81	12	0
h (Hg)	4047	1.6898	94	52	0
F' (Cd)	4800	1.6578	99	87	23
F (H)	4861	1.6560	99	88	26
e (Hg)	5461	1.6420	100	97	72
D (Na D1,D2 mean)	5893	1.6350	100	98	82
HeNe laser	6328	1.6296	100	98	84
C' (Cd)	6439	1.6284	100	98	84
C (H)	6563	1.6272	100	98	85
Ruby laser	6943	1.6238	100	98	86
GaAs laser	8400	1.6155	100	99	89
Nd:YAG laser	10648	1.609	100	99	87
Diode	13000	1.606	99	94	53
Diode	15500	1.604	99	91	38

$n_F - n_C$ = 0.0288

Abbe v_D : $(n_D - 1)/(n_F - n_C)$ = 22.0

Temp. coef: dn_D/dt 15-35°C = -0.000457

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