

REFRACTIVE INDEX LIQUID SERIES E

n(5893 Å) 25°C =1.5700

TYPICAL CHARACTERISTICS

COMPOSITION Ethyl Cinnamate and Hydrogenated Terphenyl

APPEARANCE Colorless to light yellow liquid

ODOR Fruity

COLOR STABILITY In sun: may slightly darken after 1 day; slightly more after 1 month; very dark with precipitate after 6 years

INDEX CHANGE RATE BY EVAPORATION . Moderate: -0.00024 to +0.00007 expected: exposed surface area to volume ratio of 0.2 cm²/cc @ 25°C for 32 days

POUR POINT °C <7

BOILING POINT °C @ 760mm Hg >259

FLASH POINT °C COC >130

DENSITY g/cc @ 25°C 1.006

DENSITY TEMP. COEF. g/cc/°C -0.0007

COEF. OF THERM. EXP. cc/cc/°C 0.0007

VISCOSITY centistokes @ 25°C 83 (ca. 138 @ 15°C, 54 @ 35°C)

SURFACE TENSION dynes/cm @ 25°C .. 37

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

INSOLUBLE: Water

COMPATIBLE 10 month immersion @ 25°C: Cellulose Acetate, Mylar, Nylon, Polyester, Polyethylene, Polypropylene, Phenolic, Teflon; Latex, Silicone, and Fluorosilicone Rubbers; Aluminum, Brass, Steel
(tests done on one example of each)

INCOMPATIBLE: Acrylic, Epoxy, Polycarbonate, Polystyrene, Polyurethane, Polyvinyl Chloride; Neoprene; Tygon; tarnishes Copper

GEL FORMATION: may gel with age (very rare): 2 1/2 year shelf life

TOXICITY Low (request MSDS)

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

W = wavelength in angstroms (Å)

$$n(W) = 1.545039 + (775085.7)/W^2 + (3.179251E+12)/W^4$$

SOURCE OR SPECTRAL LINE	WAVELENGTH (angstroms)	REFRACTIVE INDEX 25°C	% TRANSMITTANCE 25°C		
			1mm	1cm	10cm
N laser	3370	1.638	4	0	0
i (Hg)	3650	1.621	65	1	0
h (Hg)	4047	1.6042	91	37	0
F' (Cd)	4800	1.5847	99	88	28
F (H)	4861	1.5835	99	89	32
e (Hg)	5461	1.5746	100	96	67
D (Na D1,D2 mean)	5893	1.5700	100	98	82
HeNe laser	6328	1.5664	100	99	91
C' (Cd)	6439	1.5656	100	99	91
C (H)	6563	1.5647	100	100	95
Ruby laser	6943	1.5625	100	100	98
GaAs laser	8400	1.5567	100	100	99
Nd:YAG laser	10648	1.552	100	98	78
Diode	13000	1.550	99	91	37
Diode	15500	1.548	98	85	20

$n_F - n_C$ = 0.0188

Abbe v_D : $(n_D - 1)/(n_F - n_C)$ = 30.4

Temp. coef: dn_D/dt 15-35°C = -0.000423