

## REFRACTIVE INDEX LIQUID SERIES E

n( 5893 Å) 25°C =1.5600

## 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 cm<sup>2</sup>/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 ..... 1.037

DENSITY TEMP. COEF. g/cc/°C ..... -0.0008

COEF. OF THERM. EXP. cc/cc/°C .... 0.0008

VISCOSITY centistokes @ 25°C ..... 14 (ca. 24 @ 15°C, 11 @ 35°C)

SURFACE TENSION dynes/cm @ 25°C .. 36

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)

$$n(W) = 1.531458 + ( 690062 )/W^2 + ( 1.046236E+13 )/W^4$$

SOURCE OR SPECTRAL LINE	WAVELENGTH (angstroms)	REFRACTIVE INDEX 25°C	% TRANSMITTANCE 25°C		
			1mm	1cm	10cm
N laser	3370	1.673	39	0	0
i (Hg)	3650	1.642	92	43	0
h (Hg)	4047	1.6126	98	82	14
F' (Cd)	4800	1.5811	100	97	75
F (H)	4861	1.5794	100	97	78
e (Hg)	5461	1.5664	100	99	92
D (Na D1,D2 mean)	5893	1.5600	100	99	95
HeNe laser	6328	1.5552	100	100	97
C' (Cd)	6439	1.5542	100	100	97
C (H)	6563	1.5531	100	100	98
Ruby laser	6943	1.5503	100	100	99
GaAs laser	8400	1.5433	100	100	99
Nd:YAG laser	10648	1.538	100	98	84
Diode	13000	1.536	99	93	50
Diode	15500	1.535	99	88	29

$n_F - n_C$  = 0.0263

Abbe  $v_D$ :  $(n_D - 1)/(n_F - n_C)$  = 21.3

Temp. coef:  $dn_D/dt$  15-35°C = -0.000482