

REFRACTIVE INDEX LIQUID SERIES E

n( 5893 Å) 25°C =1.5500

TYPICAL CHARACTERISTICS

COMPOSITION ..... Triacetin and Ethyl Cinnamate  
APPEARANCE ..... Colorless to light yellow liquid  
ODOR ..... Fruity  
COLOR STABILITY ..... In sun: may slightly darken after 4 days; slightly more after 1 month; no significant change then after 10 years  
INDEX CHANGE RATE BY EVAPORATION . Moderate: -0.00045 to -0.00074 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 ..... 1.051  
DENSITY TEMP. COEF. g/cc/°C ..... -0.0009  
COEF. OF THERM. EXP. cc/cc/°C .... 0.0008  
VISCOSITY centistokes @ 25°C ..... 10 (ca. 14 @ 15°C, 8 @ 35°C)  
SURFACE TENSION dynes/cm @ 25°C .. 36  
SOLUBLE: Acetone, Carbon Tetrachloride, Ethanol, Ethyl Ether, Freon TF, Methylene Chloride, Toluene, Xylene  
PARTLY SOLUBLE: Heptane, Naphtha, Turpentine INSOLUBLE: Water  
COMPATIBLE 3 week immersion @ 25°C: Mylar, Nylon, Polyester, Polyethylene, Polypropylene, Polyurethane, Phenolic, Teflon; Latex, Silicone, and Fluorosilicone Rubbers; Aluminum, Steel; (tests done on one example of each)  
INCOMPATIBLE: Acrylic, Cellulose Acetate, Epoxy, Polycarbonate, Polystyrene, Polyvinyl Chloride; Neoprene; Tygon; may tarnish Copper and Brass  
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)

$$n(W) = 1.521711 + ( 658601.8 )/W^2 + ( 1.124357E+13 )/W^4$$

SOURCE OR SPECTRAL LINE	WAVELENGTH (angstroms)	REFRACTIVE INDEX 25°C	% TRANSMITTANCE 25°C		
			1mm	1cm	10cm
N laser	3370	1.667	65	1	0
i (Hg)	3650	1.634	99	92	42
h (Hg)	4047	1.6039	100	97	74
F' (Cd)	4800	1.5715	100	99	92
F (H)	4861	1.5697	100	99	94
e (Hg)	5461	1.5564	100	100	98
D (Na D1,D2 mean)	5893	1.5500	100	100	98
HeNe laser	6328	1.5452	100	100	98
C' (Cd)	6439	1.5441	100	100	98
C (H)	6563	1.5431	100	100	98
Ruby laser	6943	1.5402	100	100	99
GaAs laser	8400	1.5333	100	100	99
Nd:YAG laser	10648	1.528	100	98	85
Diode	13000	1.526	99	94	54
Diode	15500	1.525	99	89	31

$n_F - n_c$  = 0.0266  
 Abbe  $v_D: (n_D - 1)/(n_F - n_c)$  = 20.6  
 Temp. coef:  $dn_D/dt$  15-35°C = -0.000491