CARGILLE

Jun. 15, 2004

OPTICAL GEL CODE 081160

n (5893 Å) 25 °C = 1.517

TYPICAL CHARACTERISTICS

COMPOSITION	Phthalate Esters & Gelling Agents
APPEARANCE	Colorless Translucent Gel
ODOR	Slight Characteristic
COLOR STABILITY	In sun: may slightly discolor in 1 to 8 years
INDEX CHANGE RATE BY EVAPORATION	Very low: - 0.00001 expected:

exposed surface area to volume ratio of 0.2 sq. cm / cc @ 25 °C for 32 days

FREEZING POINT °C	< - 45
BOILING POINT °C @ 760mm Hg	> 370
FLASH POINT °C COC	> 199
DENSITY g / cc @ 25 °C	1.110
DENSITY TEMP. COEF. g / cc / °C	-0.0008
COEF. OF THERM. EXP. cc / cc / °C	0.0007
VISCOSITY @ 25 °C	Soft Gel

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

INSOLUBLE: Water

CLEAN UP; Wipe surfaces clean, then use soap and water.

COMPATIBLE 10 month immersion @ 25 °C: Acrylic, Cellulose Acetate, Epoxy, Mylar, Nylon, Polycarbonate, Polyethylene, Polypropylene, Phenolic, Silicone and Fluorosilicone Rubber, Aluminum, Copper, Brass, and Steel; (tests done on one example of each)

INCOMPATIBLE: Polystyrene, Polyurethane, Polyvinyl Chloride, Latex Rubber, Neoprene Rubber, Tygon (Acrylic and Polycarbonate at 55 °C)

TOXICITY ..... Practically Non-Toxic (request MSDS)

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

W = wavelength in angstroms (Å)

$$n(W) = 1.496135 + (692198.9) / W^2 + (8.070513\ E+11) / W^4$$

SOURCE OR SPECTRAL LINE	WAVELENGTH (angstroms)	REFRACTIVE INDEX 25 °C	% TRANSMITTANCE 25 °C 0.01 mm	0.1 mm	1 mm
near UV cut off	3200	1.571	97	72	4
i (Hg)	3650	1.553	98	82	13
h (Hg)	4047	1.541	99	87	26
F? (Cd)	4800	1.528	99	93	48
F (H)	4861	1.527	99	93	49
e (Hg)	5461	1.520	99	95	60
D (Na D1, D2 mean)	5893	1.517	100	96	68
HeNe laser	6328	1.514	100	97	71
C? (Cd)	6439	1.513	100	97	73
C (H)	6563	1.513	100	97	74
Ruby Laser	6943	1.511	100	98	76
GaAs laser	8400	1.506	100	98	83
Nd: YAG laser	10648	1.502	100	99	86
Diode	13000	1.500	100	99	89
Diode	15500	1.499	100	99	90

$n_F - n_C$	=	0.014
Abbe v_D : $(n_D-1) / (n_F-n_C)$	=	36
Temp. Coef: dn_D / dt 15-35 °C	=	-0.00038

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