

CARGILLE LABORATORIES

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OPTICAL GEL CODE 0607

30-NOV-17

n (589.3nm) 25°C = 1.457

TYPICAL CHARACTERISTICS

COMPOSITION Aliphatic Hydrocarbons and Gelling Agents
APPEARANCE Colorless to slightly yellow gel
COLOR STABILITY IN DIRECT SUN No visible change after 9 years
INDEX CHANGE RATE BY EVAPORATION Very Low: 0.0000 expected
 exposed surface area to volume ratio of 0.2 cm²/cc @ 25°C for 32 days
ODOR None
FREEZING POINT °C < -67
BOILING POINT °C @ 760mm Hg >416
FLASH POINT °C C.O.C.>245
DENSITY g/cc @ 25°C 0.878
DENSITY TEMP. COEFFICIENT g/cc/°C -0.0006
COEF. OF THERM. EXP. cc/cc/°C 0.0007
VISCOSITY @ 25°C Soft Gel
OIL SEPERATION 100°C for 24 hours, % by weight..... <0.05
WEIGHT LOSS 100°C for 24 Hours, %.....<0.05
WATER IMMERSION.....Gel disperses
PARTLY SOLUBLE: Most Organic Solvents (to remove from glass use Kimwipe & Glass Cleaner)
INSOLUBLE: Acetone, Ethanol, Water
COMPATIBLE 10-month immersion at 25°C: Acrylic, Cellulose Acetate, Epoxy, Mylar, Nylon, Polycarbonate, Polyester, Polyethylene, Polypropylene, Polystyrene, Polyurethane, Polyvinyl Chloride, Phenolic, Teflon, Neoprene, Fluorosilicone (Silastic 730 RTV), Silicone (Sylgard 184, 3140 RTV) Rubbers, Aluminum, Copper, Brass, Steel; (tests done on one example of each).
INCOMPATIBLE: Latex Rubber, Tygon types: S-50-HL, R-3603, B-44-3

CAUCHY EQUATION: Refractive index as a function of wavelength at 25.0°C

W = wavelength (nm)

$$n(W) = 1.44503E + (4.40960E+03) / W^2 + (-2.85878E+07) / W^4$$

SOURCE OR SPECTRAL LINE	WAVELENGTH (nm)	REFRACTIVE INDEX 25°C	% TRANSMITTANCE 25°C		
			1 mm	1 cm	10 cm
near UV cut off	320	1.486	83	15	0
i (Hg)	365	1.477	98	81	12
h (Hg)	404.7	1.471	99	92	42
F' (Cd)	480	1.464	100	98	78
F (H)	486.1	1.463	100	98	79
e (Hg)	546.1	1.459	100	98	86
D (Na D1, D2 mean)	589.3	1.457	100	99	90
HeNe laser	632.8	1.456	100	99	92
C' (Cd)	643.9	1.455	100	99	90
C (H)	656.3	1.455	100	99	92
Ruby Laser	694.3	1.454	100	100	98
GaAs laser	840	1.451	100	100	99
Nd: YAG laser	1064.8	1.449	100	95	61
Diode	1300	1.448	99	91	39
Diode	1550	1.447	98	80	11

n _F - n _C	=	0.008
Abbe v _D : (n _D - 1)/(n _F - n _C)	=	57
Temp. coef: dn _D /dt 15 - 35°C	=	-0.00035