

CARGILLE LABORATORIES

55 Commerce Road • Cedar Grove • New Jersey • 07009 – 1289 USA
 Ph: 973-239-6633 • Fax: 973-239-6096 • CargilleLabs@cargille.com • www.Cargille.com

Immersion Oil Type OVH

18-April-2018

n (589.3nm) 23°C = 1.5150

TYPICAL CHARACTERISTICS

<u>COMPOSITION</u>	Polybutenes and Hydrogenated Terphenyls
<u>APPEARANCE</u>	Colorless Liquid to slightly yellow
<u>COLOR STABILITY IN DIRECT SUN</u>	In direct sunlight will slightly darken in 1 day, slightly more after 4 months
<u>INDEX CHANGE RATE BY EVAPORATION</u>	Very Low: 0.00000 expected; exposed surface area to volume ratio of 0.2 cm ² /cc @ 25°C for 32 days
<u>ODOR</u>	Slight, characteristic
<u>FREEZING POINT</u> °C	< 15
<u>BOILING POINT</u> °C @ 760mm Hg	> 340
<u>FLASH POINT</u> °C C.O.C.	> 171
<u>DENSITY</u> g/cc @ 23°C	0.918
<u>COEF. OF THERM. EXP.</u> cc/cc/°C	0.0006
<u>VISCOSITY</u> @ 23°C	46,000cSt 42,228cP

SOLUBLE: Carbon Tetrachloride, Diethyl Ether, Heptane, Methylene Chloride, Naphtha, Toluene, Turpentine, Xylene

INSOLUBLE: Acetone, Ethanol, Water

COMPATIBLE: 10-month immersion at 25°C: Acrylic, Cellulose Acetate, Epoxy, Mylar, Nylon, Polycarbonate, Polyester, Polyethylene, Polypropylene, Polyurethane, Polyvinyl Chloride, Phenolic, Teflon, Latex Rubber, Neoprene, Fluorosilicone (Silastic 730 RTV), Silicone (Sylgard 184, 3140 RTV) Rubbers, Tygon F-4040-A, Tygothane, Aluminum, Copper, Brass, Steel; (tests done on one example of each).

INCOMPATIBLE: Polystyrene, Tygon S-50-HL, R-3603, B-44-3

CAUCHY EQUATION: Refractive index as a function of wavelength at 23.0°C

W = wavelength (nm)

$$n(W) = 1.499219 + (5.227289E+03) / W^2 + (8.993279E+07) / W^4$$

SOURCE OR SPECTRAL LINE	WAVELENGTH (nm)	REFRACTIVE INDEX 23°C	% TRANSMITTANCE 23°C																	
			1 mm	1 cm	10 cm															
near UV cut off	350	1.548	61	1	0															
i (Hg)	365	1.544	83	16	0															
h (Hg)	404.7	1.5345	96	64	1															
F' (Cd)	480	1.5236	99	95	60															
F (H)	486.1	1.5230	100	96	64															
e (Hg)	546.1	1.5178	100	99	90															
D (Na D1, D2 mean)	589.3	1.5150	100	100	98															
HeNe laser	632.8	1.5128	100	100	99															
C' (Cd)	643.9	1.5123	100	100	99															
C (H)	656.3	1.5118	100	100	99															
Ruby Laser	694.3	1.5104	100	100	99															
GaAs laser	840	1.5068	100	100	97															
Nd: YAG laser	1064.8	1.504	100	96	65															
Diode	1300	1.502	99	91	38															
Diode	1550	1.501	98	81	13															
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">$n_F - n_C$</td> <td style="width: 10%; text-align: center;">=</td> <td style="width: 20%;">0.0111</td> <td style="width: 30%;"></td> <td style="width: 10%;"></td> </tr> <tr> <td>Abbe v_D: $(n_D - 1)/(n_F - n_C)$</td> <td style="text-align: center;">=</td> <td>46.3</td> <td></td> <td></td> </tr> <tr> <td>Temp. coef: dn_D/dt 15 - 35°C</td> <td style="text-align: center;">=</td> <td>-0.000340</td> <td></td> <td></td> </tr> </table>						$n_F - n_C$	=	0.0111			Abbe v_D : $(n_D - 1)/(n_F - n_C)$	=	46.3			Temp. coef: dn_D/dt 15 - 35°C	=	-0.000340		
$n_F - n_C$	=	0.0111																		
Abbe v_D : $(n_D - 1)/(n_F - n_C)$	=	46.3																		
Temp. coef: dn_D/dt 15 - 35°C	=	-0.000340																		

The above values are typical for this liquid and are calculated from values typical of its components