

**CARGILLE**  
**ACRYLIC MATCHING LIQUID CODE 5032**

$$n ( 5893 \text{ \AA} ) 25 \text{ }^\circ\text{C} = 1.4917$$

TYPICAL CHARACTERISTICS

<u>COMPOSITION</u> .....	Polybutenes and natural hydrocarbons
<u>APPEARANCE</u> .....	Colorless liquid
<u>INDEX CHANGE RATE BY EVAPORATION</u> .....	Very Low : 0.00000 expected, exposed
surface area to volume ratio of 0.2 cm <sup>2</sup> /cc @ 25 °C for 37 days.	
<u>ODOR</u> .....	Slight, characteristic
<u>COLOR STABILITY</u> .....	No visible change after 9 years, slight precipitation after 18 years
<u>POUR POINT</u> °C.....	< 4
<u>BOILING POINT</u> °C @ 760mm Hg.....	> 174
<u>FLASH POINT</u> °C COC.....	174
<u>DENSITY</u> g/cc @ 25 °C.....	0.888
<u>DENSITY TEMP. COEFFICIENT</u> g/cc / °C.....	-0.0006
<u>COEF. OF THERM. EXP.</u> cc/cc / °C.....	0.0007
<u>VISCOSITY</u> centistokes @ 25 °C.....	10,000 , similar to honey ( ca. 23,000 @ 15 °C, 5,200 @ 35 °C )
<u>SOLUBLE</u> :	Carbon Tetrachloride, Ethyl Ether, Heptane, Methylene Chloride, Naphtha, Toluene, Turpentine, Xylene
<u>INSOLUBLE</u> :	Acetone, Ethanol, Water
<u>COMPATIBLE</u> 10 month immersion @ 25 °C :	Acrylic, Cellulose Acetate, Epoxy, Mylar, Nylon, Polycarbonate, Polyester, Polyethylene, Polypropylene, Polyurethane, Polyvinyl Chloride, Phenolic, Teflon ; Neoprene, Fluorosilicone ( Silastic 730 RTV ), Silicone ( Sylgard 184 ) Rubbers ; Tygon F-4040-A, Tygothane; Aluminum, Copper, Brass, Steel; ( tests done on one example of each ).
<u>INCOMPATIBLE</u> :	Polystyrene and Tygon ( types : S-50-HL, R-3603, B-44-3 )
<u>TOXICITY</u> .....	Low ( request MSDS )

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

$$W = \text{wavelength in angstroms ( \AA )}$$

$$n ( W ) = 1.478419 + ( 463182.1 ) / W^2 + ( -8.637338E+10 ) / W^4$$

SOURCE OR SPECTRAL LINE	WAVELENGTH ( angstroms )	REFRACTIVE INDEX @ 25 °C		% TRANSMITTANCE		
		Liquid	Acrylic	0.1 mm	1 mm	1 cm
near UV cut off	3100	1.526	1.526	98	86	21
i ( Hg )	3650	1.513	1.513	100	98	81
h ( Hg )	4047	1.5064	1.5063	100	99	93
F' ( Cd )	4800	1.4984	1.4983	100	100	99
F ( H )	4861	1.4979	1.4978	100	100	99
e ( Hg )	5461	1.4939	1.4938	100	100	100
D (Na: D1, D2 mean )	5893	1.4917	1.4917	100	100	100
HeNe laser	6328	1.4899	1.4900	100	100	100
C' ( Cd )	6439	1.4895	1.4896	100	100	100
C ( H )	6563	1.4891	1.4892	100	100	100
Ruby laser	6943	1.4880	1.4881	100	100	100
GaAs laser	8400	1.4850	1.4851	100	100	99
Nd: YAG laser	10648	1.483	1.483	100	100	96
Diode	13000	1.481	1.481	100	99	90
Diode	15500	1.480	1.481	100	98	80

$n_F - n_C$	=	0.0087
Abbe $v_D : ( n_D - 1 ) / ( n_F - n_C )$	=	56.3
Temp. Coef.: $dn_D / dt$ 15-35 °C	=	-0.000338

**CARGILLE LABORATORIES**

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