

SEMI-FLEXIBLE, LOW C.T.E., EPOXY COMPOUND - SUPERIOR THERMAL SHOCK RESISTANCE - MEETS THE FLAMMABILITY REQUIREMENT OF UL 94 V-0

Technical Bulletin # 3123

**Product Description**

**INSULGEL 70 CC FR NS** is an epoxy compound exhibiting low shrinkage and thermal shock resistance. By making use of an inherently flexible epoxy resin and special filler technology, **INSULGEL 70 CC FR NS** provides reduced shrinkage and low coefficient of thermal expansion. This results in decreased stress and improved adhesion to components. Several curing agents for **INSULGEL 70 CC FR NS** are offered to satisfy such diverse requirements as fast cure for small components, extended pot life for uses involving large mixed quantities, and a heat cure hardener for higher temperature requirements. In addition a significant portion of the product is manufactured from environmentally sustainable raw materials.

**Properties Uncured**

	<u>Insulgel 70 CC FR NS</u>	<u>Part B</u>	<u>Part B-1</u>	<u>Insulcure 9</u>	<u>Insulcure 11B</u>	
COLOR, VISUAL:	Black	Amber	Amber	Amber	Amber	
VISCOSITY @ 25°C, cps:	16,000	125	<20	55	700	ASTM D2393
SPECIFIC GRAVITY:	1.61	0.98	0.98	1.00	0.95	
MIX RATIO (by wt.):		100:10-11	100:9-10	100:3.5-4	100:5.5-6	
MIXED VISCOSITY, cps:		3,000	2,500	5,000	5,000	
SHELF LIFE @ 25°C, months:	12	12	12	12	12	
POT LIFE (100 gr.) @ 25°C, hrs:		0.5-0.75	8-10	0.5-0.75	2-2.5	

**Properties Cured**

**PHYSICAL**

HARDNESS, DUROMETER (Shore D):	50	43	75	80	ASTM D2240
TENSILE STRENGTH, psi:	1,200	1,000	1,900	2,500	ASTM D638
TENSILE ELONGATION, %:	90	120	30	20	ASTM D638
COEFFICIENT OF THERMAL EXPANSION, °C:	38 x 10 <sup>-6</sup>	38 x 10 <sup>-6</sup>	31 x 10 <sup>-6</sup>	32 x 10 <sup>-6</sup>	
THERMAL CONDUCTIVITY, BTU-in/(ft <sup>2</sup> )(hr)(°F):	3.6	3.6	4.3	4.2	
THERMAL CONDUCTIVITY, W/m °K:	0.518	0.518	0.619	0.605	
SERVICE TEMPERATURE, °C:	105	105	130	155	
FLAMMABILITY UL94VO	Passes	Passes	Passes	Passes	

**Electrical**

DIELECTRIC STRENGTH, volts/mil:	400	400	400	400	ASTM D149
DIELECTRIC CONSTANT, 1 KHz:	4.1	3.9	4.5	4.5	ASTM D150
DISSIPATION FACTOR, 1 KHz:	0.08	0.08	0.30	0.38	ASTM D150
VOLUME RESISTIVITY, ohm-cm: @25°C	7 x 10 <sup>12</sup>	7 x 10 <sup>12</sup>	10 <sup>14</sup>	10 <sup>15</sup>	ASTM 257
VOLUME RESISTIVITY, ohm-cm: @100°C	10 <sup>10</sup>	10 <sup>10</sup>	10 <sup>11</sup>	10 <sup>13</sup>	ASTM 257

## Use Instructions

1. Premix **INSULGEL 70 CC FR NS** base in original container being certain to re-incorporate any fillers that may have settled during shipment or storage. Due to the nature of the fillers, settling may be difficult to re-mix without the use of mechanical agitation or drum rollers.
2. Weigh out amount of **INSULGEL 70 CC FR NS** required.
3. Weigh out appropriate amount of curing agent.
4. Mix both materials thoroughly, being certain to carefully scrape sides and bottom of container to insure homogenous mix.
5. For absolutely void-free casting, evacuate for 5-10 minutes @29" Hg.

## Cure Schedule

<b>Part B</b>	Room temperature (25°C) - 16 to 24 hours
<b>Part B-1</b>	Room temperature (25°C) - 24 to 48 hours
<b>INSULCURE 9</b>	Room temperature (25°C) - 16 to 24 hours
<b>INSULCURE 11B</b>	2 hours @100°C, Post Cure for 1 hour @150°C.

## Storage Requirements

**This product will settle upon shipment or storage.**

**The product should be re-mixed well prior to use.**

**Store material in a cool dry place.**

**Date** 05/2010

### IMPORTANT:

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### HEALTH CAUTION:

Avoid breathing possible fumes, mists and vapors which can cause severe respiratory damage. Use of NIOSH approved breathing apparatus is required for more than minimal exposure. Always work in areas with adequate ventilation to allow dissipation of polyamine and other chemical fumes, and where applicable, solvent fumes. Use of goggles, protective garments, rubber gloves, protective cream is required. If material gets into eyes, flush thoroughly with clean water for twenty (20) minutes; then seek medical treatment. Avoid skin contact. Material can cause contact dermatitis. Always wash exposed areas immediately, using warm water and soap, followed by rinsing with clean water. Observe all safety precautions. It is important when using solvent based materials or solvents to keep away from open flame or ignition source.

**PLEASE REFER TO MATERIAL SAFETY DATA SHEET FOR FURTHER FIRST AID INFORMATION. FOR CHEMICAL EMERGENCY, CALL CHEMTREC (DAY OR NIGHT) 800 424-9300.**