



## TECHNICAL BULLETIN #3135 – INSULCAST 140 FR

Revised: 05/2018

### CASTABLE EPOXY HEAT SINK, UL RECOGNIZED UNDER FILE E86165 & MEETS THE FLAMMABILITY REQUIREMENT OF 94 V-1

#### PRODUCT DESCRIPTION

**INSULCAST 140 FR** is an epoxy casting system with high thermal conductivity. This system, when cured with **INSULCURE 11B**, also provides Class F operating properties.

#### PROPERTIES UNCURED

	INSULCAST 140 FR	INSULCAST 11B	
COLOR, VISUAL	Black	Amber	-
VISCOSITY, cps	220,000	700	ASTM D 2393
SPECIFIC GRAVITY	2.60	0.95	-
MIX RATIO (by wt.)	100:3-4		-
MIXED VISCOSITY @ 60°C, cps	50,000		ASTM D 2393
POT LIFE @ 25°C, hrs	2.5		-
SHELF LIFE @ 25°C, months	12		-

**PROPERTIES CURED**

PHYSICAL		
HARDNESS, DUROMETER (Shore D)	90-95	ASTM D 2393
TENSILE STRENGTH, psi	8,500	ASTM D 638
TENSILE ELONGATION, %	<1.0	ASTM D 638
COMPRESSIVE STRENGTH, psi:	18,000	ASTM D 790
FLEXURAL STRENGTH, psi:	13,500	ASTM D 790
COEFFICIENT OF THERMAL EXPANSION, °C	26x10 <sup>-6</sup>	-
HEAT DISTORTION POINT, °C	2.3	-
CAL-CM / (CM <sup>2</sup> ) (SEC) (°C)	155	-
SERVICE TEMPERATURE, °C	-55 to +155	-

**ELECTRICAL**

DIELECTRIC STRENGTH, volts/mil	420	ASTM D 149
DIELECTRIC CONSTANT, 1 KHz	6.3	ASTM D 150
DISSIPATION FACTOR, 1 KHz	0.015	ASTM D 150
VOLUME RESISTIVITY, ohm-cm	1x10 <sup>15</sup>	ASTM D 257

**MIXING INSTRUCTIONS**

1. Pre-heat **INSULCAST 140 FR** to 50°C to enhance flow and air release.
2. Stir contents thoroughly until all filler is dispersed.
3. Measure out required amount of **INSULCAST 140 FR**. Weigh into it 3-4 parts of **INSULCURE 11B** per 100 parts of **INSULCAST 140 FR**.
4. Mix thoroughly being sure to scrape sides and bottom of mixing container.
5. Where void-free castings are required, de-air for 2-5 minutes at 29 in. Hg.
6. Pour into mold or cavity.

**CURE SCHEDULE**

**INSULCURE 11B** **Fast Cure** - 120°C for 2 hours.  
**Small Mass** - 95°C for 2-3 hours plus 1 hour @120°C.  
**Large Mass** (greater than 5 lbs.) - 65°C for 4 hours plus 2 hours @120°C.

**POST CURE**

150°C for 4 hours  
 (for service temperature above 150°C).

**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.**