



**TECHNICAL BULLETIN #3135 – INSULCAST 140 FR** Revised: 04/2021  
**CASTABLE EPOXY HEAT SINK, UL RECOGNIZED UNDER FILE E86165 & MEETS THE  
 FLAMMABILITY REQUIREMENT OF UL94V-1**

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**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	
COLOUR, VISUAL	Black	Amber	-
VISCOSITY, cPs	220,000	700	ASTMD2393
SPECIFIC GRAVITY	2.60	0.95	-
MIX RATIO (by wt.)	100:3-4		-
MIXED VISCOSITY @ 60 °C, cPs	50,000		ASTMD2393
POT LIFE @ 25°C, hrs.	2.5		-
SHELF LIFE @ 25°C, months	12		-

**PROPERTIES CURED**

PHYSICAL		
HARDNESS, DUROMETER (Shore D)	90-95	ASTMD 2393
TENSILE STRENGTH, psi / MPa	8,500 / 58.6	ASTMD 638
TENSILE ELONGATION, %	<1.0	ASTMD 638
COMPRESSIVE STRENGTH, psi / MPa	18,000 / 124.1	ASTMD 790
FLEXURAL STRENGTH, psi / MPa	13,500 / 93.1	ASTMD 790
COEFFICIENT OF THERMAL EXPANSION, m/mK	26x10 <sup>-6</sup>	-
HEAT DISTORTION POINT, °C	155	-
THERMAL CONDUCTIVITY, W/mK	2.3	-
SERVICE TEMPERATURE, °C	-55 to 155	-

**ELECTRICAL**

DIELECTRIC STRENGTH, volts/mil / V/m	420 / 1.65x10 <sup>7</sup>	ASTMD 149
DIELECTRIC CONSTANT, 1 kHz	6.3	ASTMD 150
DISSIPATION FACTOR, 1 kHz	0.015	ASTMD 150
VOLUME RESISTIVITY, ohm-cm	1x10 <sup>15</sup>	ASTMD 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, deair for 2-5 minutes at 29 in.Hg/0.98 bar.
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** - (> 5lbs/2.26kg) - 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:**

Refer to the SDS prior to use. The use of NIOSH or CE approved respiratory protection may be required. Avoid breathing possible fumes, mists and vapors which can cause severe respiratory damage. 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.**