



TECHNICAL BULLETIN #3001 – INSULBOND 5-171-1

Revised: 11/2019

SEMI FLEXIBLE FLAME RETARDANT EPOXY COMPOUND WITH SUPERIOR THERMAL SHOCK RESISTANCE

PRODUCT DESCRIPTION

INSULCAST 985 FR is a semi-flexible flame retardant epoxy compound displaying the best thermal shock resistance currently available in an epoxy compound. It has excellent electrical properties over a wide range of temperatures and conforms to the component program of Underwriters Laboratories' Flame Class 94V-O. **INSULCAST 985 FR** makes use of the latest polymer and filler technology.

PROPERTIES UNCURED

| | PART A | PART B | |
|-----------------------------|--------|---------|-------------|
| COLOR, VISUAL | Black | Neutral | - |
| VISCOSITY, cps | 18,000 | 80,000 | ASTM D 2393 |
| SPECIFIC GRAVITY - nominal | 1.62 | 1.50 | - |
| MIX RATIO (by weight) | 1:1 | | - |
| MIXED VISCOSITY, cps @ 25°C | 50,000 | | ASTM D 2393 |
| POT LIFE @ 25°C, hours | 4-6 | | - |
| SHELF LIFE @ 25°C, months | 12 | | - |

PROPERTIES CURED

| PHYSICAL | | |
|---|---------------------|-------------|
| HARDNESS, DUROMETER (Shore D) | 70 | ASTM D 2240 |
| THERMAL SHOCK, method 107E | Passes B-1 | ASTM D 202 |
| FLAMMABILITY RATING-UL 94V0 | Passes | - |
| COEFFICIENT OF THERMAL EXPANSION, °C | 32x10 ⁻⁶ | - |
| THERMAL CONDUCTIVITY, BTU-in/(ft ²)(hr)(°F) | 3.5 ± 0.5 | - |
| GLASS TRANSITION TEMPERATURE (Tg) °C | 2.16 | - |
| SERVICE TEMPERATURE, °C | -55 to 155 | - |

ELECTRICAL

| | | |
|--------------------------------|--------------------|------------|
| DIELECTRIC STRENGTH, volts/mil | 425 | ASTM D 149 |
| DIELECTRIC CONSTANT, 1 KHz | 3.8 | ASTM D 150 |
| DISSIPATION FACTOR, 1 KHz | 0.03 | ASTM D 150 |
| VOLUME RESISTIVITY, ohm-cm | 6x10 ¹⁵ | ASTM D 257 |

MIXING INSTRUCTIONS

1. Pre-mix both components in their original containers to insure consistency.
2. Pre-heat both components to 50°-60°C, to lower viscosity for ease of mixing.
3. Measure out equal parts (by weight) of both components.
4. Mix thoroughly, scraping the sides and bottom of container.
5. Evacuate @29 in. Hg for void-free casting.
6. Pour into unit or cavity.

CURE SCHEDULE

16 hours @ 85°C **OR** 2 hours @ 125°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.