



TECHNICAL BULLETIN #3003 – INSULCAST 42 Revised: 11/2019

SILICONE-EPOXY CO-POLYMER, ROOM TEMPERATURE CURE, POTTING COMPOUND

PRODUCT DESCRIPTION

INSULCAST 42 is a low viscosity unique silicone-epoxy co-polymer formulated to withstand severe thermal shock, low moisture absorption and excellent dielectric insulation.

INSULCAST 42 bonds well to most metals and plastics.

PROPERTIES UNCURED

| | Part A | Part B | |
|---------------------------|--------|---------------|-------------|
| COLOR, VISUAL | Black | Clear to Dark | - |
| VISCOSITY, cps | 16,000 | 60 | - |
| VISCOSITY, cps mixed | 15,000 | | ASTM D 1084 |
| SPECIFIC GRAVITY | 1.64 | 1.03 | ASTM D 1084 |
| MIX RATIO, (by weight) | 100:10 | | - |
| MIX RATIO, (by volume) | 100:15 | | - |
| POT LIFE @ 25°C, minutes | 20-30 | | - |
| SHELF LIFE @ 25°C, months | 6 | | - |

PROPERTIES CURED

| PHYSICAL | | |
|---|-----------------------|-------------------------|
| HARDNESS, Durometer, Shore A @25°C | 75 | ASTM D 2240 |
| HARDNESS, Durometer, Shore D @25°C | 10-15 | ASTM D 2240 |
| TENSILE STRENGTH, psi @25°C | 900 | ASTM D 412 |
| TENSILE ELONGATION, % @25°C | 175 | ASTM D 412 |
| TEAR STRENGTH, Die B lb./in. @25°C | 40 | ASTM D 624 |
| SHRINKAGE, % @25°C | 0.2-0.5 | - |
| FLAMMABILITY, UL 94V-0 | Passes | - |
| COEFFICIENT OF THERMAL EXPANSION °C | 45 x 10 ⁻⁶ | - |
| THERMAL CONDUCTIVITY, BTU in/(ft ²)(hr)°F | 4.2 | - |
| USEFUL TEMPERATURE RANGE °C | -55 to 125 | *155°C intermittent use |

ELECTRICAL

| | | |
|--------------------------------------|------------------------|------------|
| DIELECTRIC STRENGTH, volts/mil @25°C | 440 | ASTM D 149 |
| DIELECTRIC CONSTANT, 1 KHz | 4.0 | ASTM D 150 |
| DISSIPATION FACTOR, 1 KHz | 0.0006 | ASTM D 150 |
| VOLUME RESISTIVITY, ohm-cm | 1.0 x 10 ¹⁵ | ASTM D 257 |

MIXING INSTRUCTIONS

1. Pre-mix **Insulcast 42** base before use to be sure any settled filler is reincorporated.
2. Weigh out amount of base component required. Weigh into the 10 parts base to one part of catalyst.
3. Mix thoroughly, scraping both the bottom and side of the mixing container.
4. To ensure void free castings **Insulcast 42** may be placed in a vacuum chamber and at about 29 inches of mercury. Vacuum for 5-10 minutes. Caution - Excessive vacuuming will lengthen cure time.
5. Proceed to use material.

CURE SCHEDULE

Important: Insulcast 42 must be cured at ambient temperatures prior to heat curing or cycling.

24 hours at 25°C or 8 hours at 25°C plus 2 hours @ 65°C.

STORAGE REQUIREMENTS: IMPORTANT

The Part B is sensitive to moisture in the air. Keep Part B in a tightly closed container. Purge with dry nitrogen in automatic filling equipment to prevent pre-mature skinning of the Part B. If precipitate forms in Part B during storage, mix or shake container vigorously under Nitrogen to make uniform. Store material in a cool dry place.

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.