



TECHNICAL BULLETIN #3160 – RTVS 42 C II SILICONE-EPOXY COPOLYMER POTTING/CASTING COMPOUND

Revised: 10/2018

PRODUCT DESCRIPTION

RTVS 42 C II is a low viscosity unique silicone-epoxy copolymer formulated to withstand severe thermal shock and provide low moisture absorption and excellent dielectric insulation. It is UL 94V-0 certified under file # E86165.

RTVS 42 C II contains silane adhesion promoters that enable it to bond well to most metals and plastics. Its unique chemistry combines the low temperature performance characteristics heretofore found only in silicones with the excellent encapsulating properties of epoxies.

PROPERTIES UNCURED

	PART A	PART B	
COLOR, VISUAL	Black	Amber	-
VISCOSITY, cps	18,000	125	ASTM D 1084
VISCOSITY, mixed	16,000		-
SPECIFIC GRAVITY	1.43	1.02	-
MIX RATIO (by weight)	100:4.8		-
MIX RATIO (by volume)	100:7		-
POT LIFE @ 25°C, minutes	<20		-
SHELF LIFE @ 25°C, months	9		-

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
GLASS TRANSITION TEMPERATURE, T _g , °C	-60	
SHRINKAGE, % @ 25°C	0.2-0.5	
COEFFICIENT OF THERMAL EXPANSION, °C	45x10 ⁻⁶	
THERMAL CONDUCTIVITY, W/m-K	0.58	
USEFUL TEMPERATURE RANGE, °C	-55 to 125 (155°C intermittent use)	

ELECTRICAL

DIELECTRIC STRENGTH, volts/mil	500	ASTM D 149
DIELECTRIC CONSTANT, 1 KHz	4.0	ASTM D 150
DISSIPATION FACTOR, 1 KHz	0.006	ASTM D 150
VOLUME RESISTIVITY, ohm-cm	1.0x10 ¹⁵	ASTM D 257

MIXING INSTRUCTIONS

1. Pre-mix **RTVS 42 C II** base before use to be sure any settled filler is reincorporated.
2. Weigh out amount of base component required. Weigh into 100 parts base, 4.8 parts of catalyst.
3. Mix thoroughly, scraping both the bottom and side of the mixing container.
4. To ensure void free castings **RTVS 42 C II** 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: RTVS 42 C II must be cured at ambient temperatures before heat curing or cycling. 24 hours at 25°C or 8 hours at 25°C plus 2 hours @65°C.

STORAGE REQUIREMENTS

The Part B is sensitive to moisture in the air. Keep Part B in a tightly closed metal container. Purge with dry nitrogen in automatic filling equipment to prevent pre-mature skinning of the Part B. 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.