

RTV630

Description

RTV630 blue two component silicone rubber compound cures at room temperature to a high strength silicone rubber. This product is supplied in a matched kit of base (A) component and curing agent (B) component which is designed for use at a convenient 10:1 ratio by weight.

The viscosity of the catalyzed compound is a moderately pourable 150,000 cps.

RTV630 silicone rubber compound is a medium viscosity product which will form thin, light-weight molds with excellent durability. The high tear resistance and inherent release ability of RTV630 rubber compound make it well suited to the manufacture of intricate castings, by reproducing each part exactly to detail.

Other typical applications for RTV630 silicone rubber compound include prototype parts, production tools for casting epoxies and rubber rolls. Electrical circuits requiring a tough potting compound with outstanding vibration withstanding capability find RTV630 unequalled.

Key Features and Benefits

- Convenient 10:1 mixing ratio for use in automatic dispensing equipment or hand operation
- Good self-leveling characteristics allow precision reproduction of fine model details
- Free of solvents
- Long working time at room temperature permits potting or reproduction of larger parts
- Cure rate can be accelerated with heat
- May be cured in deep sections
- May be cured in closed assemblies

- No cure by-products
- Low shrinkage

Typical Physical Properties

UNCURED PROPERTIES

	RTV630A	RTV630B
Color	Beige	Blue
Consistency	Pourable	Easily Pourable
Viscosity, cps	160,000	6,000
Specific Gravity	1.29	1.07

UNCURED PROPERTIES WITH CURING AGENT ADDED	RTV630
Color	Blue
Consistency	Pourable
Viscosity, cps	150,000
Specific Gravity	1.28
Work Time @ 25°C (77°F), hrs	4
CURED PROPERTIES (Cured 1 hr. @ 100°C/212°F)	RTV630
Mechanical	
Hardness, Shore A, Durometer	60
Tensile Strength, kg/cm ² (psi)	58 (820)
Elongation, %	250
Tear Strength, kg/cm (lb/in)	20 (110)
Shrinkage, %	0.8
Electrical	
Dielectric Strength, kv/mm (v/mil) (1.9 mm thick)	17.7 (450)
Dielectric Constant @ 1000 Hz	3.2
Dissipation Factor @ 1000 Hz	0.006
Volume Resistivity, ohm-cm	4.5 x 10 ¹⁵
Thermal	
Useful Temperature Range, °C (°F)	-60 to 204 (-75 to 400)
Thermal Conductivity, gm-cal/sec, hr, cm ² , °C/cm (W/M K)	0.00074 (0.31)
Thermal Conductivity Btu-hr, ft ² , °F/ft	(0.18)
Coefficient of Expansion, cm/cm, °C (in/in, °F)	21.0 x 10 ⁻⁵ (11.4 x 10 ⁻⁵)
Specific Heat, cal/gm, °C (Btu/lb, °F)	0.35 (0.35)

Processing Recommendations

Compatibility

RTV630 silicone rubber compound will cure in contact with most clean dry surfaces. However, certain materials, such as butyl and chlorinated rubber, sulfur-containing materials, amines, and certain metal soap-cured RTV silicone rubber compounds, can cause cure inhibition. Cure inhibition is characterized by a gummy appearance of the RTV silicone at the interface of the silicone rubber compound and the substrate.

It is recommended that a sample patch test be performed with RTV630 rubber compound to determine if a barrier coating or other inhibition-preventing measures are necessary before pouring the material.

Mixing

Select a mixing container 4-5 times larger than the volume of RTV silicone rubber compound to be used. Weigh out ten parts of the A component and one part of the B component. Since RTV630 silicone rubber compound is kit-matched, work time (or pot life), cure time, and final properties of the cured RTV silicone rubber compound can be assured only if the A component is used with the B component from the same kit.

With clean tools, thoroughly mix the A and B components together, scraping the sides and bottom of the container carefully to produce a homogeneous mixture. When using power mixers, avoid excessive speeds which could entrap large amounts of air or cause overheating of the mixture, resulting in shorter pot life.

Deaeration

Air entrapped during mixing should be removed to eliminate voids in the cured product. Expose the mixed material to a vacuum of about 25 mm (29 in.) of mercury. The material will expand, crest, and recede to about the original level as the bubbles break. Degassing is usually complete about two minutes after frothing ceases. When using the RTV silicone rubber compound for potting, a deaeration step may be necessary after pouring to avoid capturing air in complex assemblies.

Automatic equipment designed to meter, mix, deaerate, and dispense two-component

RTV silicone rubber compounds will add convenience to continuous or large volume operations.

Curing

RTV630 silicone rubber compound will cure sufficiently in 24 hours at 25°C (77°F) to permit handling. To achieve optimum properties an elevated temperature cure or a cure time of two days at room temperature is required. The table below illustrates the effect of temperature on cure time:

Temperature, °C (°F)	Cure Time*
25 (77)	7 days
65 (149)	4 hrs.
100 (212)	1 hr.
150 (302)	15 min.

* Cure times are only approximate. The actual time is affected by the mass of the unit and the time required to reach the desired temperature.

Bonding

RTV630 silicone rubber compound requires a primer to bond to non-silicone surfaces. Thoroughly clean the substrate with a non-oily solvent such as naphtha or methyl ethyl ketone (MEK), and allow to dry. Then apply a uniform thin film of SS4155 silicone primer, and allow the primer to air dry for one hour or more. Finally, apply freshly catalyzed RTV630 silicone rubber compound to the primed surface and cure as recommended.

General Considerations for Use

While the typical operating temperature for silicone materials ranges from -45°C to 200°C, the long-term maintenance of its initial properties is dependent upon design related stress considerations, substrate materials, frequency of thermal cycles, and other factors.

Patent Status

Nothing contained herein shall be construed to imply the nonexistence of any relevant patents or to constitute the permission, inducement or recommendation to practice any invention covered by any patent, without authority from the owner of the patent.

Product Safety, Handling and Storage

When solvents are used, proper safety precautions must be observed. All solvents must be considered toxic and must be used only in well ventilated areas. Exposure to high vapor concentrations must be avoided. When flammable solvents are used, storage, mixing and use must be in areas away from heat, sparks, flame or other sources of ignition

Caution:

RTV630B curing agent can generate flammable hydrogen gas upon contact with acidic, basic or oxidizing materials. Such contact should be avoided.

Customers should review the latest Safety Data Sheet (SDS) and label for product safety information, safe handling instructions, personal protective equipment if necessary, emergency service contact information, and any special storage conditions required for safety. Momentive Performance Materials (MPM) maintains an around-the-clock emergency service for its products. SDS are available at www.momentive.com or, upon request, from any MPM representative. For product storage and handling procedures to maintain the product quality within our stated specifications, please review Certificates of Analysis, which are available in the Order Center. Use of other materials in conjunction with MPM products (for example, primers) may require additional precautions. Please review and follow the safety information provided by the manufacturer of such other materials.

Limitations

Customers must evaluate Momentive Performance Materials products and make their own determination as to fitness of use in their particular applications.

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