



RTV630

*High Strength Silicone Rubber Compound
for Molding Rubber Parts and Making Prototype Molds*

Product 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 Performance Properties

- 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 Product Data**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. @ 100C/212F)	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)

Specifications

Typical product data values should not be used as specifications. Assistance and specifications are available by contacting GE Silicones at 800/255-8886.

Instructions for Use **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. For additional information refer to GE Silicones equipment guide (1758).

Curing

RTV630 silicone rubber compound will cure sufficiently in 24 hours at 25C (77F) 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:

<u>Temperature, °C (°F) Cure Time*</u>	
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. For more details on priming and adhesion, refer to GE Silicones data sheet on silicone primers (1873).

Handling and Safety

Material Safety Data Sheets are available upon request from GE Silicones. Similar information for solvents and other chemicals used with our product may be obtained from your suppliers.

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.

Storage and Warranty Period

The warranty period is 12 months from date of shipment if stored in the original unopened container at a temperature of 27°C (80°F) or below.

Availability

RTV630 silicone rubber compound may be ordered from GE Silicones, Waterford, NY 12188, the GE Silicones sales office nearest you or an authorized GE Silicone product distributor.

Government Requirement

Prior to considering use of a GE Silicones product in fulfilling any Government requirement, please contact the Government and Trade Compliance office at 413-448-4624.

CDS4901

LEGAL DISCLAIMER

THE MATERIALS, PRODUCTS AND SERVICES OF GE SILICONES, GE BAYER SILICONES, GE TOSHIBA SILICONES, THEIR SUBSIDIARIES OR AFFILIATES (THE "SUPPLIER"), ARE SOLD SUBJECT TO THE SUPPLIER'S STANDARD CONDITIONS OF SALE, WHICH ARE INCLUDED IN APPLICABLE SALES AGREEMENTS, PRINTED ON THE BACK OF ACKNOWLEDGMENTS AND INVOICES, OR AVAILABLE UPON REQUEST. ALTHOUGH THE INFORMATION, RECOMMENDATIONS OR ADVICE CONTAINED HEREIN IS GIVEN IN GOOD FAITH, SUPPLIER MAKES NO WARRANTY OR GUARANTEE, EXPRESS OR IMPLIED, (I) THAT THE RESULTS DESCRIBED HEREIN WILL BE OBTAINED UNDER END-USE CONDITIONS, OR (II) AS TO THE EFFECTIVENESS OR SAFETY OF ANY DESIGN INCORPORATING SUPPLIER'S MATERIALS, PRODUCTS, SERVICES, RECOMMENDATIONS OR ADVICE. NOTHING IN THIS OR ANY OTHER DOCUMENT SHALL ALTER, VARY, SUPERSEDE OR OPERATE AS A WAIVER OF ANY OF THE SUPPLIER'S STANDARD CONDITIONS OF SALE.

Each user bears the full responsibility for making its own determination as to the suitability of Supplier's materials, products, services, recommendations or advice for its own particular purpose. Each user must identify and perform tests and analyses sufficient to assure it that its finished parts will be safe and suitable for use under end-use conditions. Because actual use of products by the user is beyond the control of Supplier, such use is within the exclusive responsibility of the user, and Supplier cannot be held responsible for any loss incurred through incorrect or faulty use of the products. Further, no statement contained herein concerning a possible or suggested use of any material, product, service or design is intended or should be construed to grant any license under any patent or other intellectual property right of Supplier or any of its subsidiaries or affiliated companies, or as a recommendation for the use of such material, product, service or design in the infringement of any patent or other intellectual property right.