



## RTV88

---

### *RTV88 Silicone Rubber Compound for High Temperature*

#### **Product Description**

RTV88 silicone rubber compound is a high temperature two-part silicone elastomer. It is supplied ready-to-use with a base compound and DBT (dibutyl tin dilaurate) as the standard curing agent. DBT is suitable for most applications, however other catalysts are available to facilitate deep section cure, faster cure and automated mixing.

#### **Key Performance Properties**

- Variable work times and cure rates by adjusting the amount and type of curing agent
- Room temperature cure
- Composition free of solvents and solvent odor
- Excellent adhesion capabilities with primer
- Excellent release properties
- Retention of elastomeric properties at temperatures from minus 54°C up to 260°C continuously, and up to 316°C for short periods of time

#### **Applications**

Typical high temperature applications for these products include, but are not limited to:

- Potting and encapsulating electric motors and transformers
- Fabrication of rubber parts
- Casting molds for low-melting point metals
- Release applications such as rubber rollers
- Thermal insulation

**Typical Product Data**

<b>UNCURED PROPERTIES OF RTV BASE COMPOUND</b>	<b>RTV88</b>
Colour	Red
Consistency	Spreadable Paste
Viscosity, cps	880,000
Specific Gravity	1.47
<b>UNCURED PROPERTIES OF RTV BASE WITH 0.5% DBT CURING AGENT ADDED</b>	<b>RTV88</b>
Work Time @ 25C , hrs	0.75
Cure Time @ 25C , hrs	24
<b>CURED PROPERTIES</b> (0.5 wt. % DBT Curing Agent added, cured 7 days at 25C and 50% R.H.)	<b>RTV88</b>
<b>Mechanical</b>	
Hardness, Shore A Durometer	58
Tensile Strength, kg/cm <sup>2</sup>	59
Elongation, %	120
Tear Strength, kg/cm	8
Shrinkage, %	0.6
<b>Electrical</b>	
Dielectric Strength, kv/mm (v/mil) (1.9 mm thick)	17.4 (440)
Dielectric Constant @ 1000 Hz	4.3
Dissipation Factor @ 1000 Hz	0.03
Volume Resistivity, ohm-cm	2.8 x 10 <sup>14</sup>

**Typical Product Data**

<b>Thermal</b>	
Useful Temperature Range, ° C	-54 to 260
Thermal Conductivity, gm-cal/sec, cm <sup>2</sup> °C/cm BTU/hr, ft <sup>2</sup> , ° F/ft	0.00074 0.18
Coefficient of Expansion, cm/cm, ° C (in/in, ° F)	20 x 10 <sup>-5</sup> (11 x 10 <sup>-5</sup> )
Specific Heat, cal/gm, ° C BTU/lb, ° F	0.35 -0.35

## Instructions for Use **Mixing**

Select a mixing container 4 to 5 times larger than the volume of RTV silicone rubber compound to be used. Weigh out the RTV silicone rubber base compound and add the appropriate amount of curing agent. 0.5% DBT by weight will provide a work time or pot life of about one hour and a cure time of 24 hours. 0.5% DBT is the most commonly used concentration of curing agent for RTV88 silicone rubber compound. The pot life may be lengthened by using less DBT (as little as 0.1% DBT).

### MEASURING GUIDE FOR CURING AGENT ADDITION

RTV Weight	Dibutyl Tin Dilaurate Concentration	
	0.1%	0.5%
100 grams	5 drops	25 drops
454 grams (1 lb.)	23 drops	115 drops (2.27 grams)

With clean tools, thoroughly mix the RTV base compound and the curing agent, 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.

### De-aeration

Air entrapped during mixing should be removed to eliminate voids in the cured product. Expose the mixed material to a vacuum of 25mm (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 de-aeration step may be necessary after pouring to avoid capturing air in complex assemblies.

### Curing

Using DBT curing agent at a level of 0.5%, these RTV silicone rubber compounds will cure in 24 hours at 25° C and 50% relative humidity to form durable, resilient rubbers. Under these conditions a pot life of about one hour will typically be available for pouring and working with the catalysed material. Pot life may be increased by refrigerating the mixed material at 0° C after catalysing. Cure times may be shortened by using mild heat up to 93° C maximum.

A choice of curing agents is available for use with RTV88 silicone rubber compound

<b>Curing Agent</b>	<b>Cure Speed</b>	<b>Curing Agent Concentration</b>	<b>Features</b>
DBT	moderate	0.1-0.5%	standard
STO	fast	0.1-0.5%	small volume applications
RTV9811	moderate	5-10%	good deep section cure suitable for automatic mixing
RTV9950	moderate	5-10%	suitable for automatic mixing
RTV9910	slow	10%	suitable for automatic mixing

### **Deep Section Cure**

If these RTV silicone rubber compounds are to be used in deep sections at temperatures over 150°C, the cured product should be properly conditioned prior to service. Following room temperature cure of 1-3 days, a typical program would be eight hours at 50° C intervals from 100° C to the service temperature. Longer times at each temperature will be required for larger parts or very deep sections.

### **Bonding**

If adhesion is an important application requirement, RTV88 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 let dry. Then apply a uniform thin film of a suitable silicone primer such as SS4004 silicone primer and allow the primer to air dry for one hour or more. Finally, apply freshly catalysed RTV 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 GE products should be obtained from your suppliers. When solvents are used, proper safety precautions must be observed.

#### **Storage and Warranty Period**

These products may be shipped at ambient temperature up to 43°C for 7 days maximum. They must be stored at -18°C or below. The warranty period is 12 months from the date of shipment from GE Silicones if stored in the original unopened container at these conditions.

#### **Availability**

RTV88 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.

CDS1868

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.