

## RTV88

### Description

RTV31, RTV60 and RTV88 silicone rubber compounds are high temperature two-part silicone elastomers. They are supplied ready-to-use with a base compound and dibutyl tin dilaurate, DBT, 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.

RTV31, RTV60 and RTV88 silicone rubber compounds differ primarily in viscosity in the uncured state.

### Key Features and Typical Benefits

- 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 -54 °C (-65 °F) up to 260 °C (500 °F) continuously, and up to 316 °C (600 °F) for short periods of time

### Potential 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 Physical Properties**

| <b>UNCURED PROPERTIES OF RTV BASE COMPOUNDS</b> | <b>RTV31</b> | <b>RTV60</b> | <b>RTV88</b>     |
|-------------------------------------------------|--------------|--------------|------------------|
| Color                                           | Red          | Red          | Red              |
| Consistency                                     | Pourable     | Pourable     | Spreadable Paste |
| Viscosity, cps                                  | 25,000       | 47,000       | 880,000          |
| Specific Gravity                                | 1.42         | 1.48         | 1.47             |

Typical property data values should not be used as or to develop product specifications.

**Typical Physical Properties, continued**

| <b>UNCURED PROPERTIES OF RTV BASE WITH 0.5 % DBT CURING AGENT ADDED</b>                                 | <b>RTV31</b>                                   | <b>RTV60</b>                                   | <b>RTV88</b>                                   |
|---------------------------------------------------------------------------------------------------------|------------------------------------------------|------------------------------------------------|------------------------------------------------|
| Work Time at 25 °C (77 °F), hrs                                                                         | 2                                              | 2                                              | 0.75                                           |
| Cure Time at 25 °C (77 °F), hrs                                                                         | 24                                             | 24                                             | 24                                             |
| <b>CURED PROPERTIES (0.5 wt. % DBT curing agent added. Cured 7 days at 25 °C (77 °F) and 50 % R.H.)</b> | <b>RTV31</b>                                   | <b>RTV60</b>                                   | <b>RTV88</b>                                   |
| <b>Mechanical</b>                                                                                       |                                                |                                                |                                                |
| Hardness, Shore A Durometer                                                                             | 54                                             | 57                                             | 58                                             |
| Tensile Strength, kg/cm <sup>2</sup> (psi)                                                              | 61 (870)                                       | 70 (990)                                       | 59 (830)                                       |
| Elongation, %                                                                                           | 170                                            | 120                                            | 120                                            |
| Tear Strength, kg/cm (lb/in)                                                                            | 5 (29)                                         | 7 (40)                                         | 8 (42)                                         |
| Shrinkage, %                                                                                            | 0.6                                            | 0.6                                            | 0.6                                            |
| <b>Electrical</b>                                                                                       |                                                |                                                |                                                |
| Dielectric Strength, kv/mm (v/mil) (1.9 mm thick)                                                       | 17 (430)                                       | 17.7 (450)                                     | 17.4 (440)                                     |
| Dielectric Constant at 1000 Hz                                                                          | 4.4                                            | 4                                              | 4.3                                            |
| Dissipation Factor at 1000 Hz                                                                           | 0.03                                           | 0.02                                           | 0.03                                           |
| Volume Resistivity, ohm-cm                                                                              | 1.6 x 10 <sup>14</sup>                         | 4.4 x 10 <sup>14</sup>                         | 2.8 x 10 <sup>14</sup>                         |
| <b>Thermal</b>                                                                                          |                                                |                                                |                                                |
| Useful Temperature Range, °C (°F)                                                                       | -54 to 260 (-65 to 500)                        | -54 to 260 (-65 to 500)                        | -54 to 260 (-65 to 500)                        |
| Thermal Conductivity (W/m·k)                                                                            | 0.31                                           | 0.31                                           | 0.31                                           |
| Coefficient of Expansion, cm/cm °C (in/in °F)                                                           | 20 x 10 <sup>-5</sup> (11 x 10 <sup>-5</sup> ) | 20 x 10 <sup>-5</sup> (11 x 10 <sup>-5</sup> ) | 20 x 10 <sup>-5</sup> (11 x 10 <sup>-5</sup> ) |
| Specific Heat, cal/gm °C / BTU/lb °F                                                                    | 0.35 / 0.35                                    | 0.35 / 0.35                                    | 0.35 / 0.35                                    |

Typical property data values should not be used as or to develop product specifications.

## Processing Recommendations

### 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 RTV31, RTV60 and RTV88 silicone rubber compounds. 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 (DBT) 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.

### Deaeration

Air entrapped during mixing should be removed to eliminate voids in the cured product. Expose the mixed material to a vacuum of 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.

### Curing

Using DBT curing agent at a level of 0.5 %, these RTV silicone rubber compounds will cure in 24 hours at 25 °C (77 °F) 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 catalyzed material. Pot life may be increased by refrigerating the mixed material at 0 °C (32 °F) after catalyzing.

A choice of curing agents is available for use with RTV31, RTV60 and RTV88 silicone

rubber compounds.

| <b>CuringAgent</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 (302 °F), 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 (212 °F) 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, RTV31, RTV60 and RTV88 silicone rubber compounds require 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 catalyzed RTV silicone rubber compound to the primed surface and cure as recommended.

### Patent Status

本書のいかなる内容も、関連特許が存在しないことを暗示したものではありません。またいかなる特許についても、その権利者による許可なしに、その特許が対象とする発明を実施するための許可、誘因または推奨を構成することはできません。

### Product Safety, Handling and Storage

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](http://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.

### Contact Information

Email

[commercial.services@momentive.com](mailto:commercial.services@momentive.com)

### Telephone

**Americas**

**Latin America**

**EMEAI- Europe, Middle  
East, Africa & India**

**ASIA PACIFIC**

**+1 800 295 2392**

**Brazil**

**Europe**

**China**

|                         |                                                    |                                                                              |                                                  |
|-------------------------|----------------------------------------------------|------------------------------------------------------------------------------|--------------------------------------------------|
| Toll free*              | +55 11 4534 9650                                   | +390510924300                                                                | 800 820 0202                                     |
| +704 805 6946           | Direct Number                                      | Direct number                                                                | Toll free                                        |
| Direct Number           |                                                    |                                                                              | +86 21 3860 4892                                 |
|                         |                                                    |                                                                              | Direct number                                    |
| *All American countries | <b>Mexico</b><br>+52 55 2169 7670<br>Direct Number | <b>India, Middle East &amp; Africa</b><br>+ 91 44 71212207<br>Direct number* | <b>Japan</b><br>+81 3 5544 3111<br>Direct number |
|                         |                                                    | <b>*All Middle Eastern countries, Africa, India,</b>                         | <b>Korea</b><br>+82 2 6201 4600                  |

For literature and technical assistance, visit our website at: [www.momentive.com](http://www.momentive.com)

#### DISCLAIMER:

THE MATERIALS, PRODUCTS AND SERVICES OF MOMENTIVE PERFORMANCE MATERIALS INC. AND ITS SUBSIDIARIES AND AFFILIATES (COLLECTIVELY "SUPPLIER"), ARE SOLD SUBJECT TO SUPPLIER'S STANDARD CONDITIONS OF SALE, WHICH ARE INCLUDED IN THE APPLICABLE DISTRIBUTOR OR OTHER SALES AGREEMENT, PRINTED ON THE BACK OF ORDER ACKNOWLEDGMENTS AND INVOICES, AND AVAILABLE UPON REQUEST. ALTHOUGH ANY 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 ITS PRODUCTS, MATERIALS, SERVICES, RECOMMENDATIONS OR ADVICE. EXCEPT AS PROVIDED IN SUPPLIER'S STANDARD CONDITIONS OF SALE, SUPPLIER AND ITS REPRESENTATIVES SHALL IN NO EVENT BE RESPONSIBLE FOR ANY LOSS RESULTING FROM ANY USE OF ITS MATERIALS, PRODUCTS OR SERVICES DESCRIBED HEREIN. Each user bears full responsibility for making its own determination as to the suitability of Supplier's materials, services, recommendations, or advice for its own particular use. Each user must identify and perform all tests and analyses necessary to assure that its finished parts incorporating Supplier's products, materials, or services will be safe and suitable for use under end-use conditions. Nothing in this or any other document, nor any oral

recommendation or advice, shall be deemed to alter, vary, supersede, or waive any provision of Supplier's standard Conditions of Sale or this Disclaimer, unless any such modification is specifically agreed to in a writing signed by Supplier. 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 covering such use or design, 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.

The use of the "™" symbol designates registered or unregistered trademarks of Momentive Performance Materials Inc. or its affiliated companies. Momentive and the Momentive logo are trademarks of Momentive Performance Materials Inc.