



## RTV8111, RTV8112, RTV8262

Silicone Rubber Compounds for Potting, Encapsulating and Sealing

### Product Description

RTV8111, RTV8112 and RTV8262 silicone rubber compounds are two-part silicone elastomers supplied in ready-to-use matched kits containing a base compound and curing agent.

### Key Performance Properties

- Conforms to the physical and electrical requirements of MIL-S-23586E
- Non-corrosive to copper
- Retention of elastomeric properties at high temperature up to 204°C continuously for RTV8111 and RTV8112 up to 260°C continuously for RTV8262
- Excellent adhesion capabilities when used with primer
- Room temperature cure
- Composition free of solvents

### Applications

Typical applications include, but are not limited to the potting of electronic circuit modules, electrical connectors and coils, and other applications in electronics, military/defense and commercial aerospace industries.

### Typical Product Data

UNCURED PROPERTIES OF BASE COMPOUNDS	RTV8111	RTV8112	RTV8262
Colour	White	White	Red
Consistency	Easily Pourable	Easily Pourable	Pourable
Viscosity, mPa.s	9900	11,000	47,000
Density, g/cm <sup>3</sup>	1.18	1.19	1.47
TYPICAL PROPERTIES OF CURING AGENTS	RTV9891	RTV9858	
Colour	Light Blue	Off-White	
Consistency	Pourable	Pourable	
Viscosity, mPa.s	170,000	44,000	
Density, g/cm <sup>3</sup>	1.77	1.61	
Active Catalyst	STO	DBT	
TYPICAL UNCURED PROPERTIES WITH CURING AGENT ADDED	RTV8111 RTV9891	RTV8112 RTV9858	RTV8262 RTV9858
Curing Agent Added, weight %	2 - 4	5 - 7	5 - 7
Pot Life @ 25C ,hours	0.5	2	2
Cure Time @ 25C. hours	24	24	24

<b>TYPICAL CURED PROPERTIES (Cured 72 hrs @ 25C and 50% R.H.)</b>	<b>RTV8111</b>	<b>RTV8112</b>	<b>RTV8262</b>
<b>Mechanical</b>			
Hardness, Shore A Durometer	45	42	52
Tensile Strength, MPa	2.5	2.1	4.1
Elongation, %	160	160	150
Tear Strength, kN/m	4.3	4.8	7.7
Linear Shrinkage, %	1.0	1.0	0.6
<b>Electrical</b>			
Dielectric Strength, kV/mm (1.9 mm thick)	19.7	18.7	18.5
Dielectr. Constant @ 10 <sup>3</sup> Hz	3.3	4.02	3.98
Dissipation Factor @ 10 <sup>3</sup> Hz	0.0055	0.007	0.017
Volume Resistivity, ohm.cm	1 x 10 <sup>15</sup>	2.7 x 10 <sup>15</sup>	4.4 x 10 <sup>14</sup>

### Typical Product Data

<b>Thermal</b>			
Useful Temperature Range, °C	-54 to 204	-54 to 204	-54 to 260
Thermal Conductivity, W/m.K	0.29	0.29	0.31
Coefficient of Linear Expansion, cm/cm, °C	25 x 10 <sup>-5</sup>	25 x 10 <sup>-5</sup>	20 x 10 <sup>-5</sup>
Specific Heat, cal/gm, °C	0.35	0.35	0.35
<b>MIL-PRF-23586F SPECIFICATION LIMITS (Cured 72 hours @ 23 ± 2C and 50% ± 5% R.H.) Suggested GE Silicones Product</b>	<b>Type I, Class 1 Grade B1 RTV8111</b>	<b>Type I, Class 2 Grade A RTV8112</b>	<b>Type II, Class 2 Grade A RTV8262</b>
Viscosity, mPa.s	20,000 max	20,000 max	20,000 - 200,000
Pot Life, hours	0.25 - 0.75	1 - 3	1 - 3
Hardness, Shore A Durometer, min	40	35	45
Tensile Strength, MPa	1.8	1.8	2.3
Elongation, %, min.	100	100	100
Dielectric Strength, kV/mm min.	15.7	15.7	15.7

### Specifications

Typical product data values should not be used as specification. Assistance and specifications are available by contacting GE Bayer Silicones Technical Service RTV1 and RTV2.

### Instructions for Use

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. Using 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 10-20 mbar. 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.

Instead of the above procedure, because of the short pot life of RTV8111/RTV9891 mixtures, mixing under vacuum or using a static mixer may be necessary to eliminate trapped air.

### **Curing**

Using the curing agent levels prescribed, RTV8111, RTV8112 and RTV8262 silicone rubber compounds will cure in 24 hours at 25°C and 50% relative humidity to form durable, resilient rubbers. Cure times may be shortened by using mild heat up to 93°C maximum. Pot life of catalyzed compounds may be lengthened by refrigeration. Slight adjustments to the pot life and cure rate may also be made by changing the curing agent levels within the limits listed in the curing agent table.

### **Bonding**

If adhesion is an important application requirement, RTV 8111, RTV8112 and RTV8262 silicone rubber compounds require a primer to bond to non-silicone surfaces. Clean the substrate thoroughly 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 SS4004P. Allow the primer to air dry for one hour or more. Apply freshly catalyzed RTV silicone rubber compound to the primed surface and cure as recommended.

### **Handling and Safety**

Material Safety Data Sheets are available upon request from GE BAYER SILICONES. Similar information for solvents and other chemicals used with the GE Bayer products should be obtained from your supplier. When solvents are used, proper safety precautions must be observed.

### **Storage and Warranty Period**

The warranted shelf life will be indicated by the 'use before date' on the associated documents with a minimum of 4 month when stored in the original unopened containers below 25° C.

### **Availability**

RTV 8111/8112/8262 are available in containers of 450 gr. and 5,5 kg.

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