RTV577 Series

RTV577 and RTV577-LV

Description

RTV577, RTV577-LV and RTV577-LV-BLK are two-component, room temperature cure silicone sealants with extreme low temperature stability. These RTVs come in white and black colors and have a thick paste-consistency making them ideal for horizontal, vertical and overhead applications with low sag. All three products will cure in deep sections without additional heating or moisture. Every batch of RTV577-LV and RTV577-LV-BLK meets or exceeds the stringent low outgassing requirements of ASTM E-595 standard. All three grades are supplied and ready to use. Simply mix the base compound with the curing agent to form a tough, flexible silicone elastomeric rubber.

Key Features and Benefits

- Room temperature cure
- Deep section cure without the addition of heat
- Composition free of solvents and solvent odor
- Excellent adhesion capabilities with primer
- Excellent release properties
- Variable work times and cure rates by adjusting the amount and type of curing agent
- Retention of elastomeric properties with the following temperature ranges: Wide Temperature ranges from -115°C (-175°F) up to 204°C (400°F) continuously and up to 260°C (500°F) for short periods of time
- RTV577-LV and RTV577-LV-BLK meets or exceeds ASTM E595 standard for low outgassing

Potential Applications

Typical Physical Properties

Uncured Properties	**RTV577**	**NEW! RTV577-LV**	**NEW! RTV577-LV-BLK**
Consistency	Paste	Paste	Paste
Color	White	White	Black
Viscosity, cps	700,000	1,200,000	1,700,000
Specific Gravity	1.35	1.36	1.36
TYPICAL UNCURED PROPERTIES OF RTV BASE COMPOUNDS WITH 0.5% DBT CURING AGENT ADDED	**RTV577**	**RTV577-LV**	**RTV577-LV-BLK**
Work Time @ 25°C (77°F), hours	2	**3**	**3**
Cure Time @ 25°C (77°F), hours	24	**24**	**24**
TYPICAL CURED PROPERTIES (0.5 wt. % DBT Curing Agent Added, Cured 7 days @ 25ºC (77ºF) and 50% R.H.)	**RTV577**	**RTV577-LV**	**RTV577-LV-BLK**

Mechanical:			
Tensile Strength, kg/cm^2 (lb/in^2)	31 (440)	47 (680)	44 (630)
Percent Elongation	150	100	100
Hardness, Shore A	48	57	60
Tear Strength, kg/cm (lb/in)	6.8 (38)		
Shrinkage, %	0.65	0.65	0.6
Electrical:			
Dielectric Strength, Kv/mm (v/mil) (1.9 mm thick)	18.5 (470)	16.7 (424)	TBD
Dielectric Constant @ 1000 Hz	3.9	3.7	TBD
Dissipation Factor @ 1000 Hz	0.02	0.01	TBD
Volume Resistivity, ohm-cm	5.6×10^{14}	1.4×10^{15}	TBD
Thermal:			
Useful Temperature Range, °C (°F)	-115 to 204 (-175 to 400)	-115 to 204 (-175 to 400)	-115 to 204 (-175 to 400)
Coefficient of Expansion, cm/cm, ºC (in/in, ºF)	2.0×10^{-4} (1.1×10^{-4})		
Thermal Conductivity, W/mK	0.31		
Specific Heat, cal/gm, °C	0.35		
ASTM E595 Outgassing:			
Total Mass Loss (%)	3.51	0.29	0.25
Collected Volatile Condensed Materials (%)	0.52	0.03	0.03

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

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 Momentive 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 Momentive products (for example, primers) may require additional precautions. Please review and follow the safety information provided by the manufacturer of such other materials.

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 1-2 hours and a cure time of 24 hours. 0.5% DBT is the most commonly used concentration of curing agent for RTV577 and RTV577LV silicone rubber compounds. The pot life may be lengthened by using less DBT (as little as 0.1%).

Measuring Guide for Curing Agent Addition

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

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 29 inches of mercury minimum (absolute pressure of 25mm). 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 1-2 hours 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 RTV577 and RTV577LV silicone rubber compounds

Curing Agent	Cure Speed	Curing Agent Concentrations	Features
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	5-10%	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 28°C (80°F) 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.

Limitations

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

Contact Information

For product prices, availability, or order placement, contact our customer service at Momentive.com/CustomerService/

For literature and technical assistance, visit our website at: www.momentive.com