RTV9811

Description

Several different curing agents are available for two-component RTV silicone rubber compounds to provide a choice of cure speed, mixing ratio, or deep section cure. DBT (dibutyl tin dilaurate) and STO (stannous tin octoate) are clear, easily pourable liquids. RTV9950 is a white paste, RTV9910 is a beige paste, and RTV9811 is a beige pourable paste. All are based on metal soaps. These curing agents are appropriate to use with the following Momentive Performance Materials products: RTV11, RTV21, RTV31, RTV41, RTV60, RTV88, RTV511, RTV560, and RTV577.

Key Features and Benefits

DBT and STO

- Simple handling procedures and equipment for easy use and low processing cost.
- Adjustable work time and cure rate obtainable through choice of curing agent and level used.

RTV9910

- Paste version of DBT.
- Convenient 10:1 mixing ratio for use in automatic dispensing or hand operations.
- Excellent color contrast with red RTV base compounds provides visual evidence of complete mixing.
- Provides extended pot life over RTV9950.

RTV9950

- Paste version of DBT.
- Convenient 10:1 mixing ratio for use in automatic dispensing or hand operations.
- Excellent color contrast with red RTV base compounds provides visual evidence of complete mixing.

RTV9811

- Convenient 10:1 mixing ratio for use in automatic dispensing or hand operations.
- Good color contrast with RTV base compounds provides visual evidence of complete mixing.
- Good cure in deep sections eliminates need for multiple pours and long cure times.
- Inhibitor to prevent copper corrosion permits use with sensitive metals.

Typical Properties

	DBT	STO	RTV9910	RTV9950	RTV9811
Color	Clear to amber	Clear to amber	Beige	White	Light beige
Consistency	Easily pourable	Easily pourable	Paste	Paste	Pourable paste
Viscosity (cps)	100	250	-	350,000	25,000
Specific Gravity	1.05	1.26	1.80	1.74	1.50
Typical Level Used (wt %)	0.1 - 0.5	0.2 -0.5	10	5 - 10	5 - 10
Cure Speed	Moderate	Fast	Slow	Moderate	Moderate

Typical Cure Rates for Two Component RTV Silicone Rubber Compounds at 25ºC (77ºF) and 50% RH

RTV Base Compound	DBT Concentration					
	0.1%			0.5%		
	Work Time (hours) [1]	Tack Free Time (hours) [2]	Firm Time (hours) [3]	Work Time (hours) [1]	Tack Free Time (hours) [2]	Firm Time (hours) [3]
RTV11	3-6	8-12	48	1-4	3-5	24
RTV21	3-5	5-10	24+	1-3	1-4	24
RTV41	3-6	5-10	24+	1-3	1-4	24
RTV31	4-5	7-10	18-24	1-2	2-3	12-24
RTV60	3-5	8-12	24+	1-3	3-6	24
RTV88	4-6	8-12	24	1-2	4-6	16-24
RTV511	6-9	14-18	72-84	1-3	2-3.5	24
RTV577	6-9	8-11	36-40	1-3	2-4	24
RTV560	4-6	6-8	36-40	1-2	1.5-2.5	16-24

[1] Work Time (also called Pot Life, Work Life, or Application Time) is the length of time between curing agent addition and cessation of compound flow. It is the measure of the time available to apply the material after curing agent has been added.
[2] Tack Free Time is the time after which surface tack is eliminated.
[3] Firm time is when the product is set, but full physical property development may not have been achieved.

Potential Applications
DBT(dibutyl tin dilaurate) is the liquid curing agent generally preferred for most applications. Used in concentrations from 0.1 to 0.5% by weight, DBT provides adequate work time and moderate cure speed. The effects of varying DBT concentration are shown in the table of typical cure rates. Varying the concentration within the limits shown has little or no effect upon the final cured properties of the RTV silicone rubber compound.

STO (stannous tin octoate) is the fastest of the commonly used curing agents and is especially useful where cure times of one hour or less are required. Normally concentrations up to 0.5% by weight are used.

Because of the short work time and rapid curing action, RTV silicone rubber compounds catalyzed with STO should be applied immediately after thorough mixing.

RTV9910 and RTV9950, pre-blended pastes based on DBT, are designed for use at a level of ten percent by weight of the RTV base compound. This ratio makes this product especially useful where automatic mixing and dispensing is needed for production line or large volume operations. At the ten percent level RTV9950 provides the equivalent of 0.5% DBT. The use of RTV9910 at ten percent will result in a longer work life than RTV9950.

RTV9811 has been specially designed for thorough cure of RTV silicone rubber compounds in thick section. This curing agent is also used at a level of ten percent by weight of the RTV base compound and is suggested for general use because of the easy mixing ratio, good color contrast, and ability to cure in deep sections.

Patent Status

Nothing contained herein shall be construed to imply the nonexistence of any relevant patents or to constitute a 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

CAUTION! DBT, STO, RTV9910, RTV9950,and RTV9811 curing agents cause eye irritation and may cause skin irritation. Avoid contact with skin and eyes. In case of eye contact, flush with water for 15 minutes and see a physician. For skin contact, wash with soap and water. Clothing contaminated with DBT or STO should be removed and laundered before reuse.

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 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.

Processing Recommendations

Mixing

Select a mixing container 4-5 times larger than the volume of RTV silicone rubber compound to be used. Weigh out the silicone rubber base compound and add the appropriate amount of curing agent. 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 over-heating of the mixture, resulting in shorter pot life.

Measuring Guide for Curing Agent Addition

Weight of RTV Base Compound	Amount of Curing Agent to be Added			
	DBT		STO	
	0.1%	0.5%	0.1%	0.5%
100 grams	5 drops*	25 drops	4 drops	20 drops
454 grams (1lb)	23 drops	2.27 grams	21 drops	2.27 grams

* For conventional medicine dropper.

Deaeration

Air entrapped during mixing should be removed to eliminate voids in the cured product. Expose the mixed material to a vacuum of at least 22mm (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 RTV silicone rubber for potting, a deairing 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 operations.

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/contact/customer-service

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

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