Technical Data Sheet

RTV560

Description

RTV511, RTV560 and RTV577 silicone rubber compounds are low temperature two-part silicone elastomers. They are 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. RTV560 has the widest useful temperature (highest and lowest) of any silicone elastomer.

Key Features and 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 with the following temperature ranges:
  - RTV511 and RTV577, at temperatures from -115°C (-175°F) up to 204°C (400°F) continuously and up to 260°C (500°F) for short periods of time
  - RTV560 at temperatures from -115°C(-175°F) up to 260°C (500°F) continuously and up to 316°C (600°F) for short periods of time

Typical Physical Properties

TYPICAL UNCURED PROPERTIES OF RTV BASE COMPOUNDS	RTV511	RTV560	RTV577
Color	White	Red	White
Consistency	Pourable	Pourable	Paste
Viscosity, cps	16,000	30,000	700,000
Specific Gravity	1.21	1.42	1.35

TYPICAL UNCURED PROPERTIES OF RTV BASE COMPOUNDS WITH 0.5% DBT CURING AGENT ADDED	**RTV511**	**RTV560**	**RTV577**
Work Time @ 25°C (77°F), hours	1.5	2.25	2
Cure Time @ 25°C (77°F), hours	24	24	24
TYPICAL CURED PROPERTIES (0.5 wt. % DBT Curing Agent Added, Cured 7 days @ 25°C (77°F) and 50% R.H.)	**RTV511**	**RTV560**	**RTV577**
Mechanical			
Hardness, Shore A Durometer	42	55	48
Tensile Strength, kg/cm^2 (psi)	27 (380)	48 (690)	31 (440)
Elongation, %	170	120	150
Tear Strength, kg/cm (lb/in)	3.8 (21)	5.5 (31)	6.8 (38)
Shrinkage, %	1.3	1.0	0.65
Electrical			
Dielectric Strength, kv/mm (v/mil) (1.9 mm thick)	20.5 (520)	21.2 (540)	18.5 (470)
Dielectric Constant @ 1000 Hz	3.6	3.9	3.9
Dissipation Factor @ 1000 Hz	0.005	0.02	0.02
Volume Resistivity, ohm-cm	2 x 10^{14}	2 x 10^{14}	5.6 x 10^{14}
Thermal			
Useful Temperature Range, °C (°F)	-115 to 204 (-175 to 400)	-115 to 260 (-175 to 500)	-115 to 204 (-175 to 400)
Thermal Conductivity, W/mK	0.26	0.31	0.31
Coefficient of Linear Thermal Expansion, cm/cm, °C	22 x 10^{-5}	20 x 10^{-5}	20 x 10^{-5}
(in/in, °F)	(12 x 10^{-5})	(11 x 10^{-5})	(11 x 10^{-5})
Specific Heat, cal/gm, °C	0.35	0.35	0.35

Potential Applications

Typical applications include, but are not limited to:

- Cast-in-place heat shielding
- Thermal insulation
- Low and high-temperature bonding
- Potting and encapsulation of electrical assemblies

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 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 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 RTV511, RTV560 and RTV577 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
454 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 RTV511, RTV560 and RTV577 silicone rubber compounds.

CuringAgent	Cure Speed	Curing Agent Concentration	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.

Bonding

If adhesion is an important application requirement, RTV511, RTV560 and RTV577 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.

Limitations

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

お問合せ窓口
製品の価格、取り扱い状況およびご注文については、Momentive.com/Contact us/CustomerService/からカスタマーサービスへご連絡ください。
パンフレットおよび技術情報については、弊社ウェブサイトwww.momentive.comをご覧ください。

免責条項:
モメンティブ・パフォーマンス・マテリアルズならびにその子会社および関係会社（以下、総称して「サプライヤー」といいます）の素材、製品およびサービスは、サプライヤーの標準販売条件に基づき販売されています。この標準販売条件は、該当する販売代理店契約または販売契約に含まれており、注文確認書や請求書の裏面に印刷され、また要求に応じて提供可能です。本書に記載の情報、推奨、または提言は、誠意をもって提供されていますが、サプライヤーは明示的にも黙示的にも、(i)本書に記載の結果が最終使用条件下でも得られること、および(ii)製品、素材、サービス、推奨または提言に取り入れられている設計の有効性もしくは安全性について、いかなる保証もいたしません。サプライヤーの標準販売条件に定めのあるものを除き、サプライヤーおよびその代理人は、本書に記載の素材、製品またはサービスの使用によって生じたいかなる損害に対しても責任を負わないものとします。サプライヤーの素材、サービス、推奨、または提言が、ユーザー自身の特定の使用目的に適しているか否かの判断については、各ユーザー自身が全面的に責任を負います。各ユーザーは、すべてのテストや分析を特定および実施して、サプライヤーの製品、素材、またはサービスが組み込まれている最終製品が安全であり、最終使用条件における使用に適していることを確認する必要があります。サプライヤーの署名入りの書面による合意がない限り、本書もしくはその他の文書または口頭による推奨または提言は、サプライヤーの標準販売条件の規定または本免責条項の変更、修正、優先、または権利放棄とはみなされないものとします。本書に含まれる素材、製品、サービスまたは設計の使用可能性または使用提案に関するいかなる記載も、当該使用または設計を対象とするサプライヤーの特許その他の知的財産権に基づくライセンスを付与することを意図してはおらず、あるいはライセンスの付与と解釈してはならず、また、何らかの特許その他の知的財産権を侵害する素材、製品、サービスまたは設計の使用の提案を意図しておらず、また使用提案として解釈してはなりません。