Technical Data Sheet

RTV12

Description

RTV12 is a clear two-component, low viscosity potting compound that cures at room temperature to a soft pliable rubber. RTV12 will cure in deep sections without additional heating or moisture. RTV12 has been designed to achieve primerless adhesion to many substrates, including metals, plastics and ceramics, typical of those found in electronic assemblies.

RTV12C curing agent is mixed with RTV12A base compound producing a clear cured rubber to provide see-through properties in greater thicknesses. RTV12 allows visual observation of the components during pouring and easy identification, repair, and replacement of components when necessary.

RTV12 is suggested for evaluation as a potting material to provide environmental protection to electrical and electronic assemblies. When cured, the soft, rubbery property of RTV12 rubber cushions against mechanical shock and vibration. The excellent electrical properties make it a candidate material for both high and low voltage electrical assemblies.

Key Features and Typical Benefits

- Clear to allow easy identification of components
- Primerless adhesion to many metals and plastics
- Repairable
- Room temperature cure
- Excellent electrical properties
- Can be used with materials that cause cure inhibition with other RTVs
- Specially formulated to minimize copper corrosion
- Easily flows in and around complex electronic assemblies

- Easy to use on production line may be mixed by hand or machine

Typical Physical Properties

Property	Unit	Value	
Uncured Properties As Supplied		**RTV12A Base Compound**	**RTV12C Curing Agent**
Color		Clear, Slight Haze	Clear
Viscosity	cps	1300	15
Specific Gravity		1.00	0.84
Solvent		None	Mineral Spirits

Typical Physical Properties, continued

Propterty	Unit	Value
Uncured Properties Curing Agent Added		**RTV12A with RTV12C**
Base to Curing Agent Ratio by Weight		20:1
Catalyzed Viscosity at 5 Min.		1500
Catalyzed Brookfield Viscosity at 30 Min.		3200
Catalyzed Brookfield Viscosity at 60 Min.		Gel
Gel Time, minutes at 25 ºC (77 ºF)		100
Durometer, Shore A at 3 days		18
Specific Gravity		1.00
Cured Properties **ASTM Sheet 1.9 mm (0.075 in.) thickness**		**24 hrs Press + 48 hrs at 25 °C (77 °F) 50% R.H.**
Electrical		
Dielectric Strength	volts/mil	400
Dielectric Constant	1 kHz	3.0
Dissipation Factor	1 kHz	0.001
Volume Resistivity	Ω·cm	1.0×10^{13}
Thermal		
Useful Temperature Range		-60 to 204 °C (-75 to 400 °F)

Typical physical properties are average data and should not be used as or to develop product specifications.

Processing Recommendations
Mixing Instructions
RTV12C curing agent is non-separating. However, shaking is suggested to insure uniformity.

RTV12A base compound is mixed with RTV12C curing agent in a 20:1 ratio by weight. The base compound and curing agent must be weighed and measured to insure the proper 20:1 blend ratio. Using less curing agent will result in a softer rubber after cure.

Thoroughly mix the RTV and the curing agent using clean tools. Scrape the side and bottom of the container several times to produce a homogeneous mixture. When using power mixers avoid excessive speeds which could entrap large amounts of air or cause overheating of the silicone and resultant shortening of work life.

Deaeration

Air entrapped during mixing must be removed to eliminate voids in the cured product. Expose the mixed material to a vacuum of about 25 mm (29 inches) 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 for potting, deaeration may be necessary after pouring to avoid trapping 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 volume operations.

Curing

RTV12A mixed with RTV12C curing agent will gel in approximately two hours at room temperature. This permits handling a potted container without spilling the contents (even if inverted). However, complete cure requires 72 hours at room temperature.

Laboratory curing tests should be run prior to production to determine the appropriate cure for a specific potted assembly. Longer cure times may be required for large and deep section assemblies.

Bonding

RTV12 offers primerless adhesion to many components, wire insulation and potting containers used in electrical and electronic assemblies. To achieve optimum adhesion, all components must be clean and dry prior to potting. A laboratory test is recommended to confirm adhesion prior to production use. SS4004, SS4044 or SS4179 primers may improve RTV12 rubber adhesion to substrates showing borderline adhesion. Complete information and usage instructions for primers is available upon request. Bonding to components is desirable to minimize electrical leakage, particularly in humid environments.

General Considerations for Use

While the typical operating temperature for silicone materials ranges from -45℃ to 200℃, the long-term maintenance of its initial properties is dependent upon design related stress considerations, substrate materials, frequency of thermal cycles, and other factors.

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

WARNING:

RTV12C curing agent will cause severe skin irritation and eye burns. Keep out of reach of children. Avoid contact with skin, eyes and clothing. If spilled on clothing, remove clothing at once and wash same before re-use. In case of contact, immediately flush skin or eyes with water for 15 minutes, and consult a physician.

RTV12C curing agent contains mineral spirits and is classified as flammable. Keep away from heat, sparks and flame

Avoid all unnecessary exposure to air and moisture such exposure may reduce the catalyst activity substantially and may adversely affect the cure rate and cured properties.

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.

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

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