

RTV6428

Fast Cure Flame Retardant Encapsulant

Product Description RTV6428 silicone rubber compound is a very fast curing, two-component, low viscosity, RTV silicone material formulated for encapsulation and potting applications. It is well suited for providing protection of electronic components and assemblies against thermal shock, vibration, moisture, ozone, dust, many types of chemicals, and other environmental hazards. With its outstanding dielectric and flammability properties, it is also used for encapsulation of high voltage transformers, voltage regulators and power converters. RTV6428 silicone rubber compound is specifically designed to offer an extremely fast cure time either at room temperature or with the addition of heat. It is supplied with curing agent in matched kits, which are used at a convenient 1:1 ratio by weight.

Key Performance Properties

- Extremely fast cure times for high volume production (2 - 4 minute gel time at 25°C)
- 30 minute cure time @ 25°C
- Cure can be accelerated with heat
- Excellent flammability properties (UL94 V-0 at 6.0mm)
- Outstanding operating temperature performance (-60°C to +204°C - Continuous)
- Low viscosity allows easy flow for complete coverage of high density and complex assemblies
- No cure by-products / low shrinkage / non-exothermic allows for deep section application and use in enclosed assemblies
- Convenient 1:1 mix ratio for use with automated mixing and dispensing production operations

FLAMMABILITY PROPERTIES

RTV6428 silicone rubber compound is recognized by Underwriters Laboratories, Inc. under their Component Recognition Program (UL File Number E36952). Underwriters Laboratories Inc. Standard 94 describes a vertical burning test to be performed under laboratory conditions. When tested by this procedure, RTV6428 silicone rubber compound has exhibited burning characteristics for a classification of UL94 as follows:

V-1 - in a minimum thickness of 3.18 mm (0.125 inch)

V-0 - in a minimum thickness of 6.0 mm (0.236 inch).

Refer to UL Standard 94 for details of test and classification limits.

Each potential user should determine for him/herself whether these test procedures are meaningful for his/her particular application and should run independent tests to determine whether RTV6428 silicone rubber compound is suitable for such an application.

The above test, claims, representations and descriptions regarding the flammability of RTV6428 silicone rubber compound are based on standard small scale laboratory tests and, as such, are not reliable for determining, evaluating, predicting or describing the flammability or burning characteristics of RTV6428 silicone rubber compound under actual fire conditions, whether it is used alone or in combination with other products.



Typical Product Data

Uncured Properties (with curing agent added)	RTV6428 (A:B mixed 1:1)
Colour	Dark Gray
Consistency	Easily Pourable
Viscosity, mPa.s	1300
Work Time (Pot Life), minutes (at 25°C)	2.0 - 4.0
Cured Properties (cured 1 hour at 100°C)	RTV6428 (A:B mixed 1:1)
MECHANICAL	
Hardness, Shore A Durometer	62
Tensile Strength, MPa	3.3
Elongation, %	60
Tear Strength, kN/m	3.4
Linear Shrinkage, %	0.2
FLAMMABILITY	
Limiting Oxygen Index, %	37
UL94 Classification 3.00mm min. thickness	V-1
6.00mm min. thickness	V-0
ELECTRICAL (1.9mm thick)	
Dielectric Strength, kV/mm	20.9
Dielectric Constant (1000 Hz)	3.09
Dissipation Factor (1000 Hz)	0.0061
Volume Resistivity, ohm-cm	5.7×10^{14}
THERMAL	
Useful Temperature Range, °C	-60 to +204
Thermal Conductivity W/m K	0.31
Coefficient of Thermal Expansion cm/cm, °C	21.6×10^{-5}

Specifications Typical product data values should not be used as specifications. Assistance and specifications are available by contacting Momentive performance materials Technical Service RTV1 and RTV2.

Instructions for Use

Compatibility

RTV6428 silicone rubber compound will cure in contact with most clean and dry surfaces. However, certain materials, such as butyl and chlorinated rubber, sulphur-containing materials, amines and certain metal soap-cure RTV silicone rubber compounds, can cause cure inhibition. Cure inhibition is characterized by a gummy substance at the interfacial layer between the RTV and the substrate.

It is recommended that a sample patch test be performed with RTV6428 silicone rubber compound to determine if a barrier coating or other inhibition-preventing measures are necessary before using the material.

Mixing

Since settling of filler occurs during storage, RTV6428A base compound and RTV6428B curing agent should be thoroughly stirred before mixing the two components together.

RTV6428 silicone rubber compound is a two component product that needs to be thoroughly mixed at a ratio of 1:1 (RTV6428A:RTV6428B by weight) prior to application. Because of its extremely short pot life, RTV6428 will gel within 2-4 minutes at 25°C, hand mixing is not recommended. For best results, the material should be pumped and dispensed through a static mixing nozzle using automated meter/mixing equipment. The use of power (i.e. dynamic) mixing equipment should be avoided because it can generate heat, causing premature curing of the material.

Curing

A complete cure under these conditions can be expected within 30 minutes. The time to complete cure can be significantly shortened via the addition of heat. Complete cures can be achieved in as little as 2-3 minutes at temperatures of 125°C. The actual cure time is affected by such things as cross-sectional thickness of the RTV6428 silicone rubber compound, heat capacity of the overall assembly and efficiency and type of oven used (i.e. convection, infrared). If an oven is used, it should be well ventilated.

Bonding

RTV6428 silicone rubber compound requires a primer to bond to non-silicone surfaces. For best adhesion, surfaces to be bonded should be thoroughly cleaned with a non-oily solvent such as naphtha or methyl ethyl ketone (MEK) and allowed to dry. Then apply a uniform thin film of Momentive performance materialsSS4155 silicone primer and allow the primer to air dry for one hour. Finally, apply freshly catalyzed RTV6428 silicone rubber compound to the primed surface and cure as recommended.

Handling and Safety

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

CAUTION

RTV6428B curing agent can generate flammable hydrogen gas upon contact with acidic, basic, or oxidizing materials. Such contact should be avoided.

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 months when stored in the original unopened containers below 25° C.

Availability

RTV6428 is available as a 45.4 kg kit.



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	• UA, Silanes, Resins, and Specialties	T 800.334.4674	F 304.746.1623
	• RTV Products-Elastomers	T 800.332.3390	F 304.746.1623
	• Sealants and Adhesives & Construction	T 877.943.7325	F 304.746.1654
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