

TSE 3251

Heat-Curing Silicone Adhesive

Product Description

TSE3251 is a one-component heat curable, semi-flowable silicone adhesive designed for potting and encapsulation. This product adheres to many substrates without a primer and cures at elevated temperatures. This product has a very long working time at room temperature.

Key Performance Properties

- One component product - no mixing required
- Cures at elevated temperature
- Low viscosity and semi-flowable
- Primerless adhesion to many types of substrates
- No cure by-products, low linear shrinkage
- Non-corrosive to metals and sensitive substrates
- Outstanding performance over a wide temperature range

Applications

- Coating of hybrid IC's, printed circuit boards, etc
- Dip coating and encapsulation of electronic devices
- General adhesive for many types of substrates

Typical Product Data

Uncured Properties		
Colour		White
Viscosity	mPa·s	8.500
Specific Gravity	g/cm ³	1.02
Cured Properties (cured 1 hour at 150°C)		
Hardness	Shore A	16
Elongation	%	200
Tensile Strength	MPa	0.7
Adhesion (Al to Al)	MPa	0.4
Dielectric Strength	kV/mm	20
Dielectric Constant		2.8
Dissipation Factor		0.002
Volume Resistivity	ohm·cm	2 x 10 ¹⁵
Thermal expansion Coefficient	1/K	2.1x10E-4
Thermal Conductivity	W/m. K	0.18

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

TSE3251 silicone adhesive cures in contact with most clean, dry surfaces. However, certain materials, such as butyl and chlorinated rubber, sulfur-containing materials, amines, and certain metal soap cured RTV silicone rubber compounds can cause cure inhibition. Cure inhibition is characterized by a gummy appearance of the TSE3251 silicone adhesive at the interface between the adhesive and the substrate to be bonded. It is recommended that a sample patch test be performed with the TSE3251 silicone adhesive to determine substrate compatibility.

Surface Preparation

The adhesive performance of any polymer system is highly dependent upon proper surface preparation. In order to maximize the adhesion of TSE3251 silicone adhesive and minimize the potential for cure inhibition, all parts should be as clean and dry as possible prior to the application of the adhesive.

Curing

TSE3251 silicone adhesive requires elevated temperatures in order to achieve full cure. Typical cure times and temperatures are as follows:

Temperature	TSE 3251
100°C	4 hours
120°C	2 hours
150°C	1 hour

The actual cure time is affected by such things as cross-sectional thickness of the TSE3251 silicone adhesive, heat capacity of the overall assembly and efficiency and type of oven used (i.e. convection, infrared)

Adhesion capability

Suitable substrates

- Metals: Aluminium, Copper, Ni plate; Stainless steel
- Plastics: PPS, PBT, Epoxy resin, Polyester, Phenolic resin
- Rubbers: Heat cured silicone rubber
- Inorganics: Glass, Ceramics

Not suitable substrates

- Plastics: PP, PE, Fluorocarbon resin
- Rubbers: Sulphur vulcanized rubbers, Fluorocarbon rubber

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

TSE3251 silicone adhesive can generate flammable hydrogen gas upon contact with acidic, basic, or oxidizing materials. Such contact should be avoided.

**Storage and
Warranty Period**

The shelf life will be indicated by the 'use before date' on the associated documents with a minimum of 3 months when stored in the original unopened containers between 0° and 10 °C

Availability

TSE3251 is available in 1kg cans and 18 kg pails.



PRINCIPAL LOCATIONS – Regional Information

North America	World Headquarters 187 Danbury Road Wilton, CT 06897, USA	T 800.295.2392	F 607.754.7517
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Pacific	Akasaka Park Building - 5-2-20 Akasaka Minato-ku, Tokyo 107-6112 Japan	T +81.3.5544.3100	F +81.3.5544.3101

CUSTOMER SERVICE CENTERS

North America	Charleston, WV 25314, USA E cs-na.silicones@momentive.com		
	• Specialty Fluids	T 800.523.5862	F 304.746.1654
	• 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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