

TSE3251

Description

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

Key Features and Typical Benefits

- 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
- Flame retardant: UL94HB recognized (File No. E56745)

Typical Physical Properties

(JIS K 6249)

<u>Property</u>	<u>Unit</u>	<u>Value</u>
Uncured Properties		
Colour		White; Semi-flowable paste
Viscosity	Pa·s	8.5
Cured Properties (cured 1 hour at 150 °C)		
Density	g/cm ³	1.02
Hardness (Type A)		16
Elongation	%	200
Tensile Strength	MPa	0.7
Adhesion (Al to Al)	MPa	0.4
Dielectric Strength	kV/mm	20
Dielectric Constant (60Hz)		2.8
Dissipation Factor (60Hz)		0.002
Volume Resistivity	Ω·cm	2.0 x 10 ¹⁵
Thermal expansion Coefficient	1/K	2.1 x 10 ⁻⁴
Thermal Conductivity	W/m.K	0.18

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

Potential Applications

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

Processing Recommendations

Compatibility

TSE3251 silicone adhesive cures in contact with most clean, dry surfaces. However, certain materials, such as butyl and chlorinated rubber, sulfurcontaining 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	Cure Time
100 °C	4 hours
120 °C	2 hours
150 °C	1 hour

Note: Test data. Actual results may vary.

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.

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

Availability

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

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

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.

Contact Information

For product prices, availability, or order placement, contact our customer service at Momentive.com/CustomerService/

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

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