

## 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>
<b>Uncured Properties</b>		
Colour		White; Semi-flowable paste
Viscosity	Pa·s	8.5
<b>Cured Properties (cured 1 hour at 150 °C)</b>		
Density	g/cm <sup>3</sup>	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	$\Omega \cdot \text{cm}$	$2.0 \times 10^{15}$
Thermal expansion Coefficient	1/K	$2.1 \times 10^{-4}$
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](http://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

Email

[commercial.services@momentive.com](mailto:commercial.services@momentive.com)

### Telephone

<b>Americas</b>	<b>Latin America</b>	<b>EMEAI- Europe, Middle East, Africa &amp; India</b>	<b>ASIA PACIFIC</b>
+1 800 295 2392	<b>Brazil</b>	<b>Europe</b>	<b>China</b>
Toll free*	+55 11 4534 9650	+390510924300	800 820 0202
+704 805 6946	Direct Number	Direct number	Toll free
Direct Number			+86 21 3860 4892
			Direct number
*All American countries	<b>Mexico</b>	<b>India, Middle East &amp; Africa</b>	<b>Japan</b>
	+52 55 2169 7670	+ 91 44 71212207	+81 3 5544 3111
	Direct Number	Direct number*	Direct number
		<b>*All Middle Eastern countries, Africa, India,</b>	<b>Korea</b>
			+82 2 6201 4600

For literature and technical assistance, visit our website at: [www.momentive.com](http://www.momentive.com)

### DISCLAIMER:

**THE MATERIALS, PRODUCTS AND SERVICES OF MOMENTIVE PERFORMANCE MATERIALS INC. AND ITS SUBSIDIARIES AND AFFILIATES (COLLECTIVELY “SUPPLIER”), ARE SOLD SUBJECT TO SUPPLIER’S STANDARD CONDITIONS OF SALE, WHICH ARE INCLUDED IN THE APPLICABLE DISTRIBUTOR OR OTHER**

**SALES AGREEMENT, PRINTED ON THE BACK OF ORDER ACKNOWLEDGMENTS AND INVOICES, AND AVAILABLE UPON REQUEST. ALTHOUGH ANY INFORMATION, RECOMMENDATIONS, OR ADVICE CONTAINED HEREIN IS GIVEN IN GOOD FAITH, SUPPLIER MAKES NO WARRANTY OR GUARANTEE, EXPRESS OR IMPLIED, (i) THAT THE RESULTS DESCRIBED HEREIN WILL BE OBTAINED UNDER END-USE CONDITIONS, OR (ii) AS TO THE EFFECTIVENESS OR SAFETY OF ANY DESIGN INCORPORATING ITS PRODUCTS, MATERIALS, SERVICES, RECOMMENDATIONS OR ADVICE. EXCEPT AS PROVIDED IN SUPPLIER'S STANDARD CONDITIONS OF SALE, SUPPLIER AND ITS REPRESENTATIVES SHALL IN NO EVENT BE RESPONSIBLE FOR ANY LOSS RESULTING FROM ANY USE OF ITS MATERIALS, PRODUCTS OR SERVICES DESCRIBED HEREIN.** Each user bears full responsibility for making its own determination as to the suitability of Supplier's materials, services, recommendations, or advice for its own particular use. Each user must identify and perform all tests and analyses necessary to assure that its finished parts incorporating Supplier's products, materials, or services will be safe and suitable for use under end-use conditions. Nothing in this or any other document, nor any oral recommendation or advice, shall be deemed to alter, vary, supersede, or waive any provision of Supplier's standard Conditions of Sale or this Disclaimer, unless any such modification is specifically agreed to in a writing signed by Supplier. No statement contained herein concerning a possible or suggested use of any material, product, service or design is intended, or should be construed, to grant any license under any patent or other intellectual property right of Supplier covering such use or design, or as a recommendation for the use of such material, product, service or design in the infringement of any patent or other intellectual property right.

The use of the "™" symbol designates registered or unregistered trademarks of Momentive Performance Materials Inc. or its affiliated companies. Momentive and the Momentive logo are trademarks of Momentive Performance Materials Inc.