

INVISISIL™ TSE3033 TRANSPARENT SILICONE POTTING RUBBER

INVISISIL TSE3033 is a two-component, transparent heat curable silicone rubber designed for electrical and electronic potting. TSE3033 adheres to various types of materials such as metals, plastics, glass, and ceramics without the use of primers.

Key Features and Typical Benefits

- Convenient 1:1 mix ratio by weight
- Low viscosity permits excellent potting
- Transparent appearance
- Primerless adhesion to a variety of materials including, metals, and some plastics
- No reactive by-products: no concerns regarding corrosion
- Excellent resistance to temperature extremes

Potential Applications

- Potting of electronics parts requiring resistance to temperature extremes
- Potting of high voltage parts
- Moistureproof coating of electronic circuit boards
- Potting of various modules

Typical Physical Properties

(JIS K 6249)

Uncured Properties		TSE3033(A)	TSE3033(B)
Appearance		Transparent liquid	Transparent liquid
Viscosity (23 °C)	Pa•s{P}	1.1 {11}	0.8 {8}

Mix ratio by weight		1:1
Viscosity after mixing (23 °C)	Pa•s{P}	0.9 {9}
Work life* (23 °C)	h	6
Cured Properties (0.5h at 150 °C)		
Appearance		Elastic rubber
Densisty (23 °C)	g/cm ³	1.01
Hardness (Type A)		30
Tensile strength	MPa {kgf/cm ² }	1.0{10}
Elongation	%	130
Adhesive strength* ¹	MPa {kgf/cm ² }	0.3 {3}
Refractive index* ² (n _D ²⁵)		1.407
Linear expansion* ²	1/K	2.3 x 10 ⁻⁴
Thermal conductivity* ²	W/(m•K)	0.17
Transmittance* ³	%	95
Volume resistivity	Ω•cm	2.0 x 10 ¹⁵
Dielectric strength	kV/mm	21
Dielectric constant (60Hz)		2.8
Dissipation loss (60Hz)		0.001

*1: Glass Lap shear *2: In-house test method *3: 450 - 800nm, 10mm thickness

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

Curing Time vs. Temperature

Actual cure time will depend on the type and efficiency of the oven used, and the shape and heat capacity of the parts and containers. A sample test should be conducted to determine the appropriate cure time. Typical cure times and temperatures are as follows.

Temperature °C	Time h
80	4
100	2
150	0.5

General Instructions for Use

- All parts should be as clean and dry as possible prior to applications.
- Weigh out (A) and (B) to the clean container 3 - 4 times larger than the volume of silicone rubber compound to be used. Mix (A) and (B) thoroughly with clean tools.
- Deaerate the mixture under vacuum to remove air entrapped during mixing.
- Apply and cure with heat at more than 100°C
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While the typical operating temperature for silicone materials ranges from -45°C to 200°C, the long-term maintenance of its initial properties is dependent upon design related stress considerations, substrate materials, frequency of thermal cycles, and other factors.

Note: Materials such as water, sulfur, nitrogen compounds, organic metallic salts, phosphorus compounds, etc. contained in the surface of the substrate can inhibit curing. A sample patch should always be conducted before proceeding to determine compatibility.

Handling and Safety

- Wear eye protection and protective gloves as required while handling the product.
- Use the product in a well ventilated area.

Storage

- Store in a cool dry place out of direct sunlight.
- Keep out of the reach of children

Packaging

TSE3033(A)

- 1kg can available in cases of 10
- 18kg pail available

TSE3033(B)

- 1kg can available in cases of 10
- 18kg pail available

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.

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

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