

Product Data

Fast Cure, Non-corrosive Silicone Adhesive Sealant TSE3971

TSE3971 is a one-component, fast cure, non-corrosive silicone adhesive sealant that cures on exposure to atmospheric moisture to form an elastic silicone rubber. TSE3971 has a pourable consistency and excellent corrosion-free adhesion to metals, including copper, plastics, ceramics, glass, etc without the use of primers.

KEY FEATURES

- ◆ Non-corrosive to metals: meets MIL-A-46146B corrosion test
- ◆ Fast cure
- ◆ Low odor; releases an alcohol vapor during cure
- ◆ Primerless adhesion to many substrates
- ◆ Pourable consistency: higher viscosity than TSE397 (50Pa·s)
- ◆ Excellent high and low temperature resistance: from -55°C to 200°C
- ◆ Excellent weatherability, ozone, and chemical resistance
- ◆ Excellent electrical insulation properties
- ◆ Simple and easy-to-use one-component system

APPLICATIONS

- ◆ Insulating seal for electrical and electronic parts
- ◆ Coating for hybrid ICs
- ◆ Waterproof sealant for electrical, electronic and communication equipment
- ◆ General adhesive for metals, plastics, glass, ceramics etc

TYPICAL PROPERTY DATA

(JIS K 6249)

UNCURED PROPERTIES		
Appearance		Flowable paste
Viscosity (23°C),	Pa·s {P}	100 {1,000}
Tack-free Time (23°C)	min	10
CURED PROPERTIES (7days @ 23°C, 50%RH)		
Appearance		Elastic rubber
Density	g/cm ³	1.04
Hardness (Type A)		16
Tensile strength	MPa {kgf/cm ² }	1.5 {15}

Elongation	%	350
Adhesive strength ^{*1}	MPa {kgf/cm ² }	1.1 {11}
Linear expansion ^{*2}	1/K	2.1x10 ⁻⁴
Thermal conductivity ^{*2}	W/(m·K) {cal/(cm·s·°C)}	0.18 {4.4x10 ⁻⁴ }
Volume resistivity	MΩ·m {Ω·cm}	2.0x10 ⁷ {2.0x10 ¹⁵ }
Dielectric strength	kV/mm	21
Dielectric constant (60Hz)		2.9
Dissipation factor (60Hz)		0.005

*1 Aluminum Lap Shear

*2 In-house test method

Typical property data values should not be used as specifications.

ADHESION PERFORMANCE

TSE39X series has excellent bonding properties and adheres to many materials without primers. However, for significantly better adhesion on difficult-to-bond substrates, use of a primer is suggested. The following list of materials shows the quality of adherence of TSE39X used with ME121, ME123, YP9341, XP80-A5363 or without a primer.

Primer selection

SUBSTRATE	NO PRIMER	ME121	ME123	YP9341/ XP80-A5363
Metals				
Copper	○	○		
Steel	○	○		
Mild steel	○	○		
Brass	○	○		
Stainless steel	○	○		
Pure aluminum	○	○		
Corrosion-resistant aluminum	○	○		
Galvanized sheet iron	○	○		
Tin plate	○	○		
Plastics				
Acrylic resin	○		○	
Phenolic resin	○		○	
Epoxy resin	○		○	
Polycarbonate	○ ^{*1}		○ ^{*1}	
Soft polyvinyl chloride	○		○	
Rigid polyvinyl chloride	○		○	
Melamine resin	○		○	
Polystyrene	△		○	
Polyacetal	×		○	

PPE	○		○	
Polyester film	○		○	
Unsaturated polyester resin	○		○	
Polyimide	○		○	
Nylon66	○		○	○ ^{*2}
PBT	○		○	× ^{*2}
PPS	○		○	○ ^{*2}
ABS resin	○		○	
Polypropylene	×		×	○ ^{*3}
Polyethylene	×		×	△ ^{*3}
Polytetrafluoroethylene	×		×	×
Silicone varnish laminate	○		○	
Silicone varnish coated glass cloth	○		○	
Rubbers				
Chloroprene	△		○	
Nitril	△		○	
Styrene butadiene	△		○	
Ethylene propylene	△		○	
Silicone	○		○	
Others				
Glass	○	○		
Ceramics	○	○		
Wood	○~△	○~△		

Note

○: Excellent (Cohesive failure, 100%) △: Not sufficient ×: Poor (Cohesive failure, 0%)

*1: It shows good adhesion but solvent crack may occur depending on the application. A preliminary adhesion test is recommended to confirm.

*2: YP9341 *3: XP80-A5363

HANDLING AND SAFETY

- ◆ Wear eye protection and protective gloves as required while handling the product.
- ◆ Adequate ventilation must be maintained in the work place at all times.

STORAGE

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

PACKAGING AND COLORS

COLOR SUFFIX	COLOR	PACKAGING
-B	Black	100g tube available in case of 20 333ml cartridge available in case of 10
-W	White	100g tube available in case of 20 333ml cartridge available in case of 10 18kg pail available

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Momentive Performance Materials Japan LLC

<http://www.momentive.com>

Technical Answer Center (Japan): Phone: +81-276-20-6182 FAX: +81-276-31-6259
Tokyo Head Office: Phone: +81-3-5544-3111 FAX: +81-3-5544-3122