

Product Data

Low Volatile Silicone Adhesives TSE3925, TSE3975, TSE3985, TSE3995

TSE3925, TSE3975, TSE3985 and TSE3995 are one-component, low volatile silicone adhesives, which cure on exposure to atmospheric moisture at room temperature to form an elastic silicone rubber. These products offer excellent corrosion-free adhesion to metals, including copper, plastics, ceramics, glass, etc without the use of primers.

- TSE3925: non-flowable paste type
- TSE3975: flowable type and high viscosity
- TSE3985: flowable type and medium viscosity
- TSE3995: flowable type and low viscosity

KEY FEATURES

- ◆ Low volatility
- ◆ One-component: easy to use
- ◆ Non-corrosive to metals; meets MIL-A-46146B corrosion test
- ◆ Fast cure
- ◆ Low odor cure: releases an alcohol vapor during cure
- ◆ Primerless adhesion to many substrates
- ◆ UL94 HB recognized (File No: E56745): TSE3995-W

APPLICATIONS

- ◆ Airtight, waterproof adhesive sealant for electrical and electronic machinery
- ◆ Potting and coating of hybrid integrated circuits, printed circuit boards, etc.
- ◆ General adhesion of metals, glass, plastics, etc.

TYPICAL PROPERTY DATA

(JIS K 6249)

UNCURED PROPERTIES		TSE3925	TSE3975	TSE3985	TSE3995
Appearance		Non-flowable paste	Flowable paste		
Tack free time (23°C)	min	5	10	10	10
Viscosity (23°C)	Pa·s {P}	-	33 {330}	18 {180}	2.5 {25}
CURED PROPERTIES (23°C, 60%RH, 7days)					
Appearance		Elastic rubber			
Density (23°C)	g/cm ³	1.04	1.05	1.04	1.04
Hardness (Type A)		30	25	17	25
Tensile strength	MPa {kgf/cm ² }	1.6 {16}	1.2 {12}	1.4 {14}	1.3 {13}
Elongation	%	350	220	220	140
Adhesive strength ^{*1}	MPa {kgf/cm ² }	1.3 {13}	1.2 {12}	0.7 {7}	0.5 {5}
Thermal conductivity ^{*2}	W/(m·K)	0.18	0.21	0.18	0.18

Volume resistivity	Ω·cm	2.0×10 ¹⁵	2.0×10 ¹⁵	2.0×10 ¹⁵	2.0×10 ¹⁵
Dielectric strength	kV/mm	22	23	22	23
Dielectric constant (60Hz)		2.9	2.9	3.0	2.9
Dissipation factor (60Hz)		0.005	0.005	0.01	0.005
Volatile siloxane ²	wt %	0.028	0.028	0.028	0.028

*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/ (P80-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	○		○	×

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.
- ◆ Maintain adequate ventilation in the work place at all times.

STORAGE

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

PACKAGING COLOR

Grade	Color suffix	Color	Packaging
TSE3925	-C	Clear	100g tube available in cases of 20 333ml cartridge available in cases of 10 18kg pail available
	-W	White	100g tube available in cases of 20 333ml cartridge available in cases of 10
TSE3975	-C	Clear	100g tube available in cases of 20 333ml cartridge available in cases of 10
	-W	White	100g tube available in cases of 20 333ml cartridge available in cases of 10 18kg pail available
	-B	Black	100g tube available in cases of 20 333ml cartridge available in cases of 10
TSE3985	-C	Clear	100g tube available in cases of 20 333ml cartridge available in cases of 10
	-W	White	100g tube available in cases of 20 333ml cartridge available in cases of 10
	-B	Black	333ml cartridge available in cases of 10
TSE3995	-C	Clear	100g tube available in cases of 20 333ml cartridge available in cases of 10 18kg pail available
	-W	White	100g tube available in cases of 20 333ml cartridge available in cases of 10 1kg can available in cases of 10
	-B	Black	100g tube available in cases of 20 333ml cartridge available in cases of 10 18kg pail available

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