

Product Data

Fast Cure, Non-corrosive Silicone Adhesive Sealant TSE399

TSE399 is a one-component, fast cure, non-corrosive silicone adhesive sealant that cures on exposure to atmospheric moisture to form an elastic silicone rubber. TSE399 is easily pourable and has 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 room temperature cure
- ◆ Low odor: releases an alcohol vapor during cure
- ◆ Primerless adhesion to many substrates
- ◆ 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 coating and potting for transistor and high-voltage parts
- ◆ A waterproof coating for electrical, electronic and communication equipment
- ◆ Non-corrosive coatings for electronic and integrated circuits and semiconductors, copper connections on electric parts assemblies.
- ◆ General adhesion for metals, glass, plastic, etc

TYPICAL PROPERTY DATA

(JIS K 6249)

UNCURED PROPERTIES	
Appearance	Flowable liquid
Viscosity (23°C), Pa·s {P}	2.5 {25}
Tack-free Time (23°C) min	10
Corrosion (MIL-A-46146B)	None
CURED PROPERTIES (7days @ 23°C/50%RH)	
Appearance	Elastic rubber
Density g/cm ³	1.04
Hardness (Type A)	25
Tensile strength MPa {kgf/cm ² }	1.3 {13}

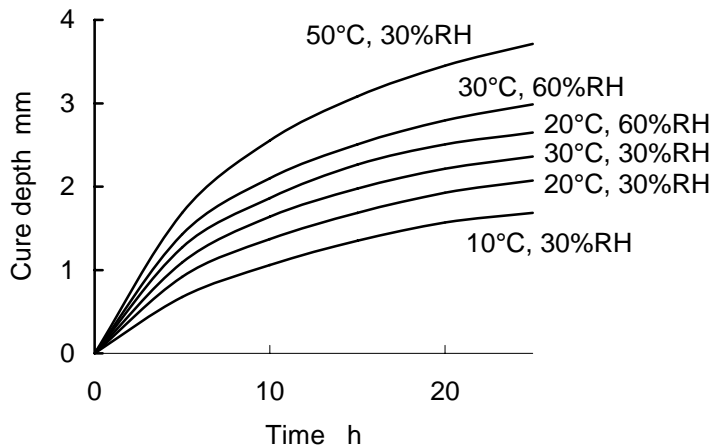
Elongation	%	140
Adhesive strength ^{*1}	MPa {kgf/cm ² }	0.3 {3}
Thermal conductivity ^{*2}	W/(m·K) {cal/(cm·s·°C)}	0.18 {4.4×10 ⁻⁴ }
Volume resistivity	MΩ·m {Ω·cm}	2.0×10 ⁷ {2.0×10 ¹⁵ }
Dielectric strength	kV/mm	20
Dielectric constant (60Hz)		2.9
Dielectric loss (60Hz)		0.005

*1: Aluminum lap shear *2: In-house test method

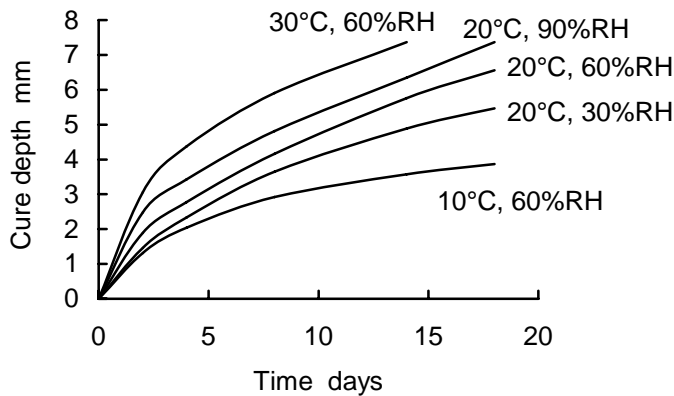
Typical property data values should not be used as specifications.

CURING PROPERTIES

Short-term



Long-term



ADHESION PERFORMANCE

TSE399 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 TSE399 used with ME121, ME123, YP3941, XP80-A5363 or without a primer.

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	○		○	
Polyester film	○		○	
Melamine resin	○		○	
Polystyrene	△		○	
Polyacetal	×		○	
PPE	○		○	
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 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 1kg can available in case of 10 18kg pail available
-C	Clear	100g tube available in case of 20 333ml cartridge available in case of 10 1kg can available in case of 10 18kg pail available
-W	White	100g tube available in case of 20 333ml cartridge available in case of 10 1kg can available in case of 10 4kg can available in case of 4 18kg pail available

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