

# Product Data

## Fast Cure, Non-corrosive Silicone Adhesive Sealant TSE392

TSE392 is a one-component, fast cure, non-corrosive silicone adhesive sealant that cures on exposure to atmospheric moisture to form an elastic silicone rubber. TSE392 has a thixotropic paste 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
- ◆ Excellent high and low temperature resistance: from  $-55^{\circ}\text{C}$  to  $200^{\circ}\text{C}$
- ◆ Excellent weatherability, ozone, and chemical resistance
- ◆ Excellent electrical insulation properties
- ◆ UL94 HB recognized (File No: E56745): TSE392-B, TSE392-C, TSE392-G1, TSE392-W
- ◆ Simple and easy-to-use one-component system

### APPLICATIONS

- ◆ Insulating adhesive seal and fixing for electrical and electronic parts.
- ◆ Waterproof sealant for electrical, electronic and communication equipment
- ◆ General adhesive for metals, glass, plastics, etc

### TYPICAL PROPERTY DATA

(JIS K 6249)

UNCURED PROPERTIES		
Appearance		Thixotropic paste
Tack-free Time (23°C)	min	5
Corrosion (MIL-A-46146B)		None
CURED PROPERTIES (7days @ 23°C / 50%RH)		
Appearance		Elastic rubber
Density (23°C)	$\text{g}/\text{cm}^3$	1.04
Hardness (Type A)		26
Tensile strength	$\text{MPa} \{\text{kgf}/\text{cm}^2\}$	1.6 {16}
Elongation	%	430
Adhesive strength <sup>*1</sup>	$\text{MPa} \{\text{kgf}/\text{cm}^2\}$	1.3 {13}
Thermal conductivity <sup>*2</sup>	$\text{W}/(\text{m}\cdot\text{K}) \{\text{cal}/(\text{cm}\cdot\text{s}\cdot^{\circ}\text{C})\}$	0.18 $\{4.4 \times 10^{-4}\}$

Volume resistivity	MΩ·m {Ω·cm}	$2.0 \times 10^7$ { $2.0 \times 10^{15}$ }
Dielectric strength	kV/mm	22
Dielectric constant (60Hz)		2.9
Dissipation factor (60Hz)		0.005

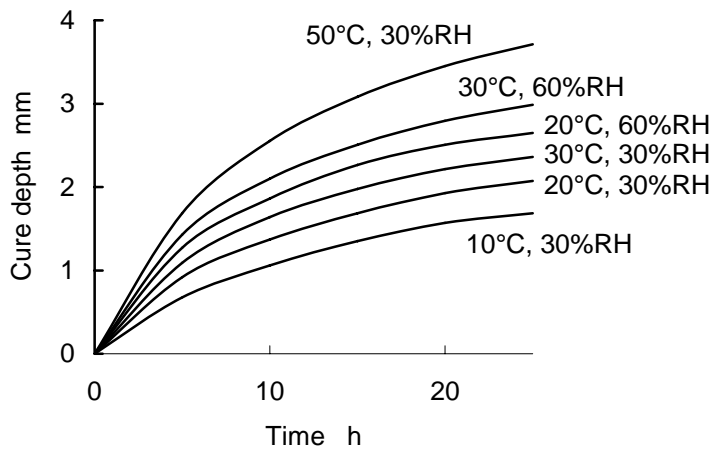
\*1: Aluminum lap shear

\*2: In-house test method

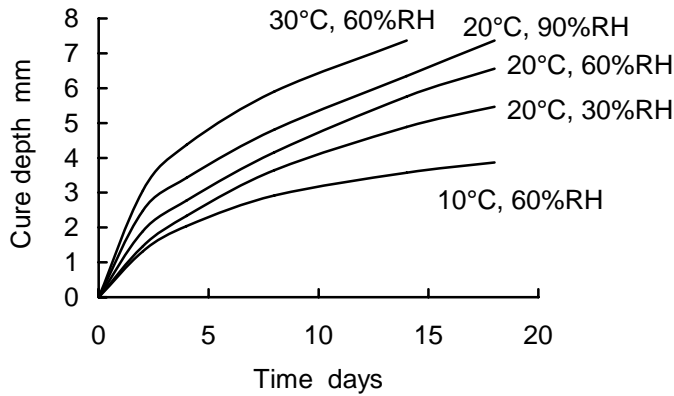
Typical property data values should not be used as specifications.

## CURING PROPERTIES

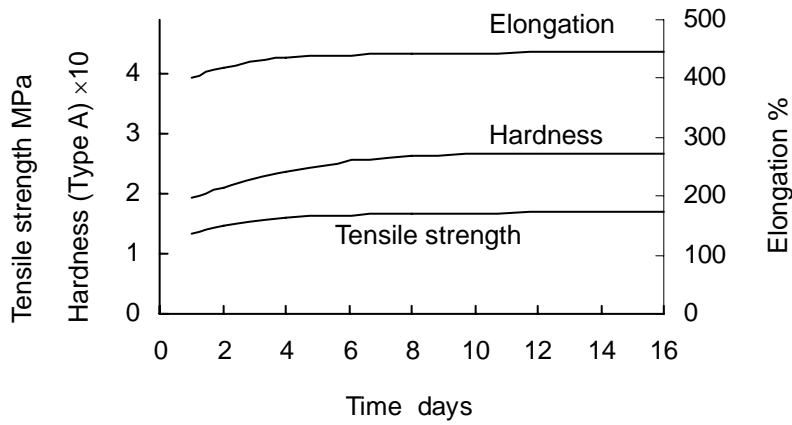
### Short-term



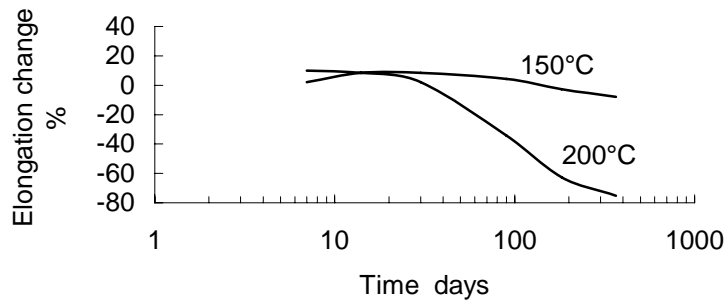
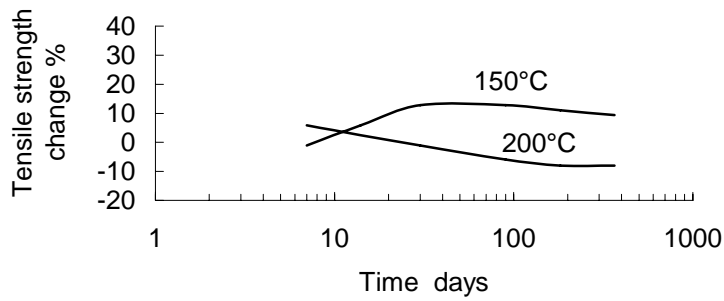
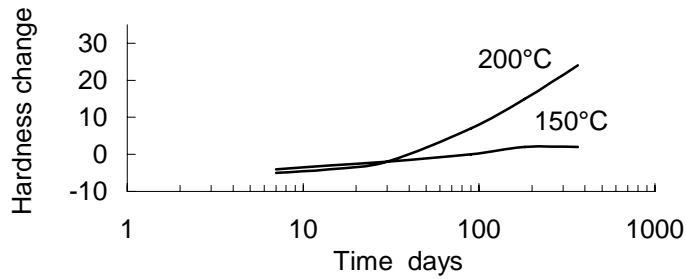
### Long-term



## CURE TIME VS. PHYSICAL PROPERTIES



## HEAT RESISTANCE



## ADHESION PERFORMANCE

TSE392 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 TSE392 used with ME121, ME123, YP9341, XP80-A5363 or without a primer.

### Primer selection

SUBSTRATE	NO PRIMER	ME121	ME123	YP9341/ (P80-A5363)
<b>Metals</b>				
Copper	○	○		
Steel	○	○		
Mild steel	○	○		
Brass	○	○		
Stainless steel	○	○		
Pure aluminum	○	○		
Corrosion-resistant aluminum	○	○		
Galvanized sheet iron	○	○		
Tin plate	○	○		
<b>Plastics</b>				
Acrylic resin	○		○	
Phenolic resin	○		○	
Epoxy resin	○		○	
Polycarbonate	○ <sup>*1</sup>		○ <sup>*1</sup>	
Soft polyvinyl chloride	○		○	
Rigid polyvinyl chloride	○		○	
Melamine resin	○		○	
Polystyrene	△		○	
Polyacetal	×		○	
PPE	○		○	
Polyester film	○		○	
Unsaturated polyester resin	○		○	
Polyimide	○		○	
Nylon66	○		○	○ <sup>*2</sup>
PBT	○		○	×
PPS	○		○	○ <sup>*2</sup>
ABS resin	○		○	
Polypropylene	×		×	○ <sup>*3</sup>
Polyethylene	×		×	△ <sup>*3</sup>
Polytetrafluoroethylene	×		×	×
Silicone varnish laminate	○		○	
Silicone varnish coated glass cloth	○		○	
<b>Rubbers</b>				
Chloroprene	△		○	
Nitril	△		○	
Styrene butadiene	△		○	

Ethylene propylene	△		○	
Silicone	○		○	
<b>Others</b>				
Glass	○	○		
Ceramics	○	○		
Wood	○~△	○~△		

Note

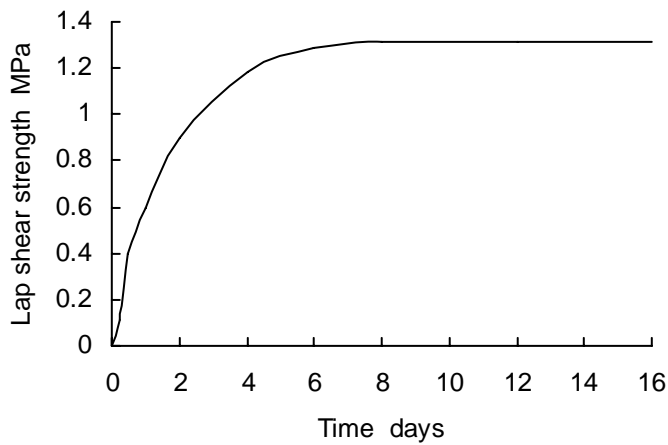
○: Excellent (Cohesive failure, 100%)    △: Not sufficient    ×: Poor (Cohesive failure, 0%)

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

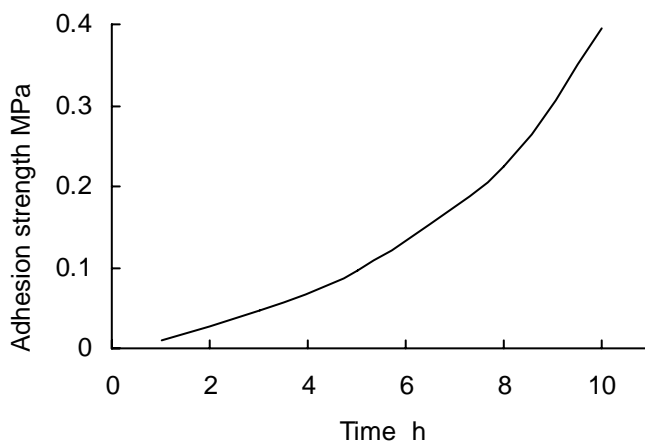
\*2: YP9341      \*3: XP80-A5363

### ADHESION STRENGTH AND CURING TIME

Substrate: Aluminum    Condition: 20°C, 60%RH



### Development Of Adhesive Strength In Initial Stage



## 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
-C	Clear	100 g tube available in cases of 20 333 ml cartridge available in case of 10 18 kg pail available
-W	White	100 g tube available in cases of 20 333 ml cartridge available in cases of 10 18 kg pail available
-G1	Gray	333 ml cartridge available in cases of 10 18 kg pail available
-B	Black	100 g tube available in cases of 20 333 ml cartridge available in cases of 10 18 kg pail available

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### **FOR INDUSTRIAL USE ONLY**

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