

TSE392

silicone adhesive sealant

ENGINEERED MATERIALS - CONSUMER ELECTRONICS



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 and Typical Benefits

- 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°C to 200°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

Potential 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 Physical Properties (JIS K 6249)

UNCURED PROPERTIES		
Appearance		Thixotropic paste
Tack Free Time (23°C)	min	5
Corrosion (MIL-A-46146B)		None
CURED PROPERTIES (7 days @ 23°C, 50%RH)		
Appearance		Elastic rubber
Density (23°C)	g/cm ³	1.04
Hardness (Type A)		26
Tensile Strength	MPa {kgf/cm ² }	1.6 {16}
Elongation	%	430
Adhesive Strength ⁽¹⁾	MPa {kgf/cm ² }	1.3 {13}
Thermal Conductivity ⁽²⁾	W/m•K	0.18
Volume Resistivity	MΩ•m {Ω•cm}	2.0x10 ⁷ {2.0x10 ¹⁵ }
Dielectric Strength	kV/mm	22
Dielectric Constant (60Hz)		2.9
Dissipation Factor (60Hz)		0.005

(1) Aluminum lap shear

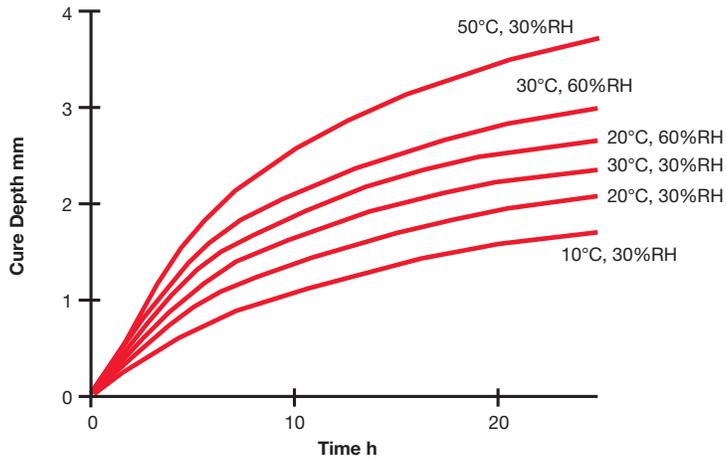
(2) In-house test method

Typical property data values should not be used as specifications.

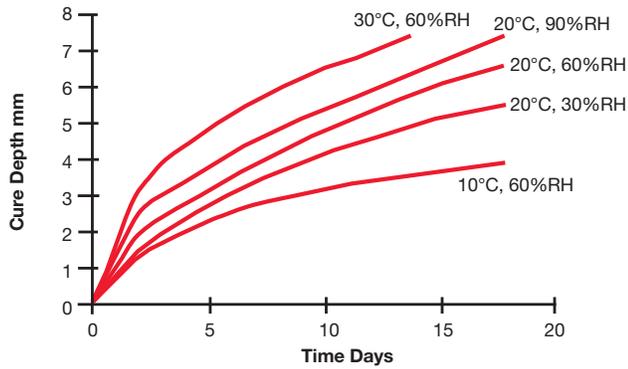
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Curing Properties

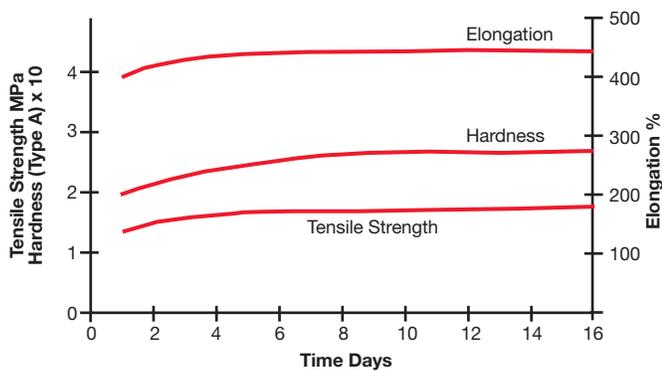
Short-term



Long-term

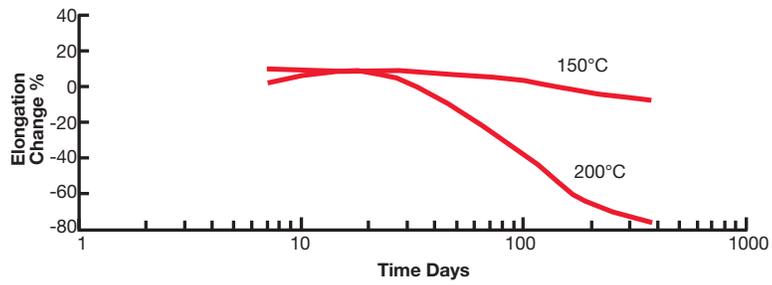
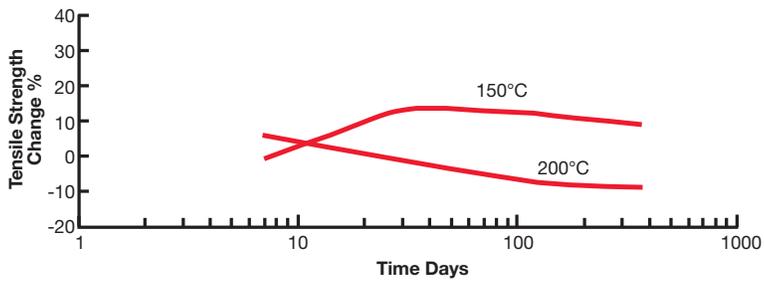
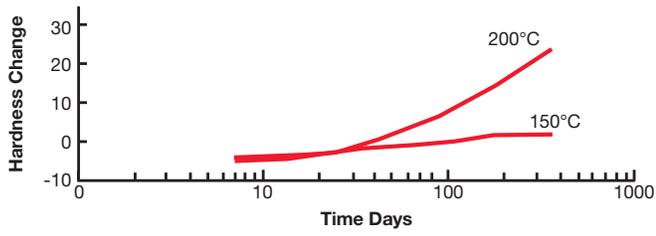


Cure Time vs. Physical Properties



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Heat Resistance



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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 / XP80-A5363
Metals				
Copper	O	O		
Steel	O	O		
Mild Steel	O	O		
Brass	O	O		
Stainless Steel	O	O		
Pure Aluminum	O	O		
Corrosion-resistant Aluminum	O	O		
Galvanized Sheet Iron	O	O		
Tin Plate	O	O		
Plastics				
Acrylic Resin	O		O	
Phenolic Resin	O		O	
Epoxy Resin	O		O	
Polycarbonate	O ⁽¹⁾		O ⁽¹⁾	
Soft Polyvinyl Chloride	O		O	
Rigid Polyvinyl Chloride	O		O	
Melamine Resin	O		O	
Polystyrene	Δ		O	
Polyacetal	X		O	
PPE	O		O	
Polyester Film	O		O	
Unsaturated Polyester Resin	O		O	
Polyimide	O		O	
Nylon66	O		O	O ⁽²⁾
PBT	O		O	X ⁽²⁾
PPS	O		O	O ⁽²⁾
ABS Resin	O			
Polypropylene	X		X	O ⁽³⁾
Polyethylene	X		X	Δ ⁽³⁾
Polytetrafluoroethylene	X		X	X
Silicone Varnish Laminate	O		O	
Silicone Varnish Coated Glass Cloth	O		O	
Rubbers				
Chloroprene	Δ			
Nitril	Δ			
Styrene Butadiene	Δ			
Ethylene Propylene			O	
Silicone	O		O	
Others				
Glass	O	O		
Ceramics	O	O		
Wood	Δ ~ O	Δ ~ O		

Note:

O: Excellent (Cohesive failure, 100%)

Δ: Insufficient

X: 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.

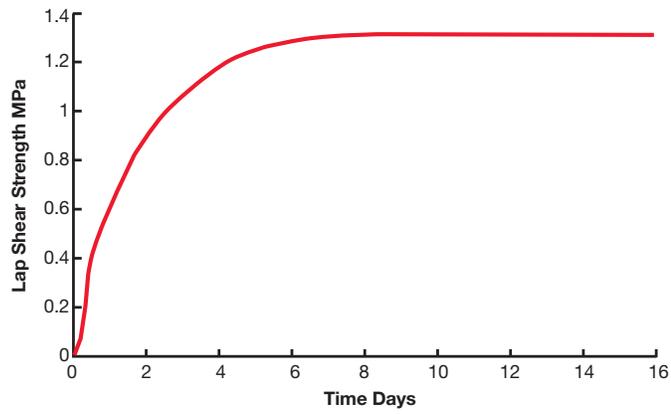
(2): YP9341

(3): XP80-A5363

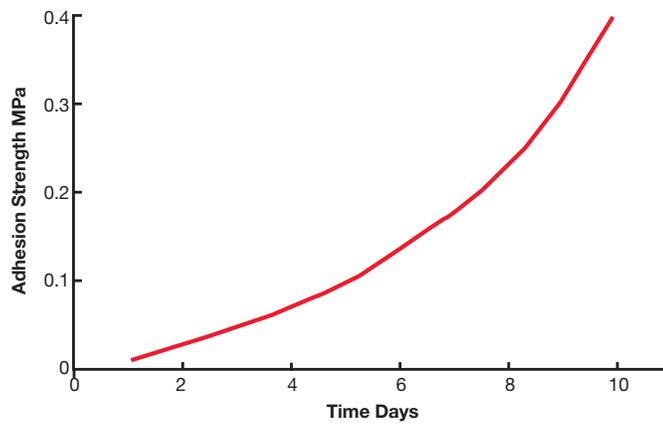
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Adhesion Strength and Curing Time

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



Development of Adhesive Strength in Initial Stage



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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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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 considering the use of this product should review the latest Material Safety Data Sheet and label for product safety information, handling instructions, personal protective equipment if necessary, and any special storage conditions required. Material Safety Data Sheets are available at www.reinhardoil.dk or, upon request, from any Momentive Performance Materials representative. Use of other materials in conjunction with Momentive Performance Materials products 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.