GE
Advanced Materials

Silicone Solutions for Electronic Devices and Component Assemblies

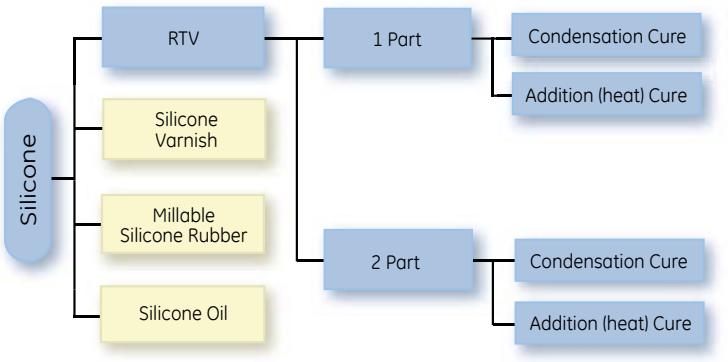
GE imagination at work

Contents

Silicone Product Profile

The products introduced in this selector guide consist of "RTV" (Room Temperature Vulcanizing) silicone products, that are commonly found in Electric and Electronic applications and component assemblies. This family of silicone products consists of *both* **Room Temperature Cure** *and* **Heat Cure** grades.

GE - Advanced Materials, Silicones, offers a comprehensive portfolio of silicone solutions to help meet a broad array of handling and performance needs in electronic components and assemblies. Selection of the appropriate type of RTV depends upon the required manufacturing process, handling requirements, curing conditions, equipment, and desired material properties.



Condensation Cure

Condensation cure silicone products cure when exposed to moisture in the environment at room temperature. These materials are categorized into Alkoxy, Acetoxy, or Oxime based on upon the byproducts that occur during cure.

Heat (Addition) Cure

Heat cure grades cure upon exposure to elevated heat or room temperature.

Relative Performance Characteristics

Property	Silicone	Epoxy	Urethane
Temperature Range	-50 ~ +200°C	-50 ~ +150°C	-30 ~ +120°C
Heat Resistance	Excellent	Poor	Poor
Flame Retardancy[1]	Excellent	None	None
UV Stability	Excellent	Poor	Poor
Ozone Stability	Excellent	Poor	Poor
Modulus	Low	High	High

[1] As a base material, silicone demonstrates flame retardant properties comparable to UL94HB.

APPLICATIONS

SEALING & ADHESION

Silicones are used in a wide array of applications for bonding components, and sealing against moisture or environmental contaminants. A comprehensive portfolio of 1 Part and 2 Part Adhesives and Sealants, many of which are excellent candidates for assembly applications on or near sensitive electrical and electronic components, are available. These materials are applied by a variety of methods ranging from manual dispensing to auto-dispensing units for tube, cartridge, pail, or drum packages. Mixing for 2 Part grades may be accomplished by either manual processes or meter mix dispensing, depending on production volume and post-mix material properties.

Performance Considerations

- Temperature Resistance
- Flame Retardancy
- Adhesion
- Hardness
- Dielectric Resistance
- Low Volatility
- Mechanical Strength
- Thermal Conductivity

Process Considerations

- Viscosity
- Cure Temperature
- Pot Life
- Cure Mechanism
- Cure Time

COATING

The Coating process involves the application of silicone in a thin protective layer to a component surface by methods such as dip, flow, spray, and selective robotic coating. Selection of a silicone coating material for a particular application involves the consideration of various performance and processing criteria.

Performance Considerations

- Temperature Resistance
- Flame Retardancy
- Stress Relief
- Dielectric Resistance
- Low Volatility

Process Considerations

- Viscosity
- Cure Temperature
- Pot Life
- Cure Mechanism
- Cure Time

POTTING & ENCAPSULATION

Silicone rubber and gels are widely used in electronics to ensure mechanical and environmental protection. A full range of products are offered in various cure speeds, viscosities, and performance, many of which offer enhancements for thermal cycling protection, stress relief, material strength, flame retardancy, or optical clarity.

Performance Considerations

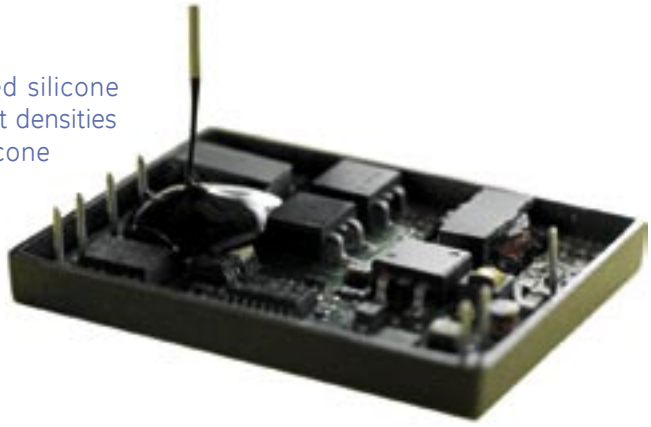
- Temperature Resistance
- Flame Retardancy
- Adhesion
- Release Properties
- Dielectric Resistance
- Low Volatility
- Stress Relief
- Thermal Conductivity

Process Considerations

- Viscosity
- Cure Temperature
- Pot Life
- Cure Mechanism
- Cure Time

Industries Served

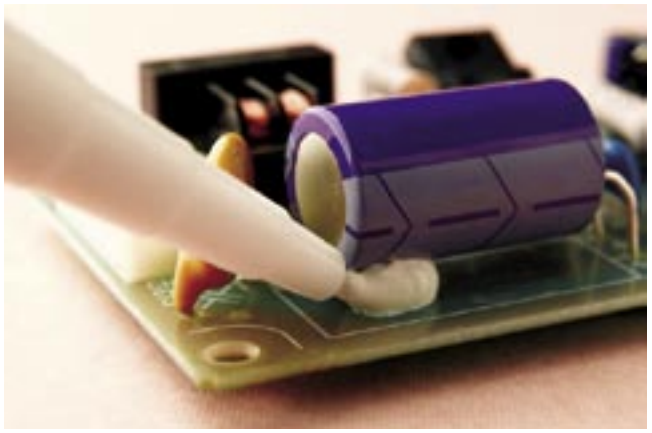
Electronic Devices and Power Modules



GE - Advanced Materials is a driving force as a supplier of advanced silicone technology to the electronics industry. Increasing electronic component densities and performance demands have created a need for specialized silicone solutions from GE for a broad mix of performance and handling requirements.

Typical Applications:
- Power converters
- Inverters
- Hybrid ICs
- Micro-Electronic packaging
- High-voltage component insulation
- Membrane switches
- Photo couplers

Board Assembly



Silicones are found in board-level adhesion, coating, and encapsulation applications, and contribute to the long-term, reliable performance of many components and assemblies. A wide portfolio of products is available, providing flame retardancy, thermal conductivity, temperature resistance, low-volatility, or high-purity benefits.

Typical Applications:
- Board-level component adhesion, fixing, and sealing
- PCB coating
- Component encapsulation
- Junction Coating Resins

Consumer Electronics

Silicones are commonly used in a variety of consumer electronics applications. In addition to providing adhesion to many substrates, an array of grades are available to provide heat resistance, flame retardancy, low volatility for sensitive components, and moisture protection.

Typical Applications:
- Flat panel display electrode sealing
- CRT wedges, bases, anodes
- Steam iron plate seals
- Air conditioner units
- Control panel insulation
- PCB fixing and sealing

Automotive Electronics

The automotive industry plays a critical role in integrating new electronic technologies. As more and more components migrate to electronic solutions, silicones play an increasingly important role in helping deliver material solutions that contribute to design flexibility and long-term component reliability under harsh operating conditions.

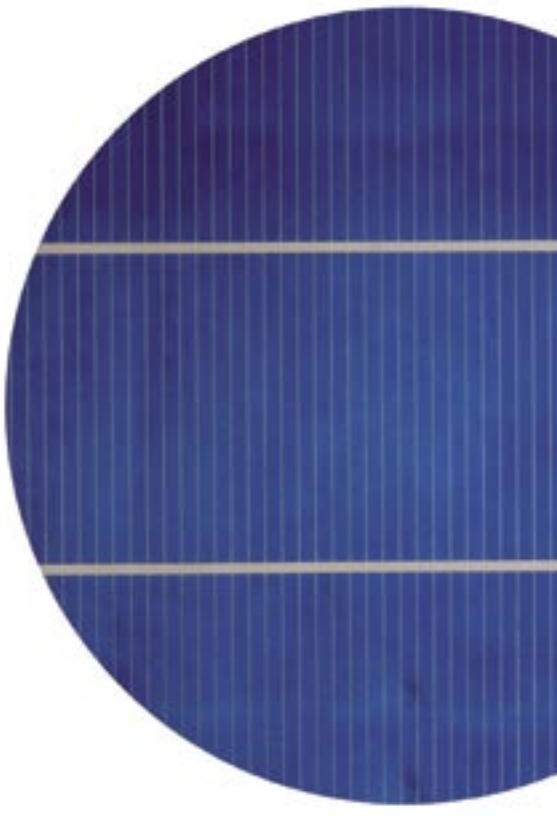
Typical Applications:
- ECU potting, sealing, coating
- Wire connector sealing
- Sealing, encapsulation in a broad range of sensors
- HVAC system sealing
- Vibration dampening
- Headlamp assemblies

Aviation and Aerospace

Avionics and frame assembly needs in Aviation and Aerospace are served through silicone adhesives, coating, encapsulation and potting materials that help withstand stress and temperature extremes.

Typical Applications:
- Avionics
- Circuit and terminal protection
- Wire sealants
- Engine gasketing
- Cargo door, window sealing
- Weatherstrip adhesives
- Aviation lighting
- Ventilation ducts

Solar Energy



Reliability of electronic components and the ability for panels to withstand harsh conditions over the lifecycle of the product are important considerations in solar energy applications. GE - Advanced Materials, Silicones helps serve this growing industry with its range of potting materials and sealants.

Typical Applications:
- Terminal box potting
- Box and base sealing
- Aluminum frame and glass / EVA plate sealing

Product Overview: Adhesives & Sealants

Type	Grade	Cure Chemistry	Cured Property	Feature
1 Part Condensation Cure	RTV133	Alkoxy	Rubber	UL recognized non-flowable sealant.
	RTV167	Alkoxy	Rubber	High-strength paste adhesive with UL recognition and Mil Spec.
	RTV1673LV	Alkoxy	Rubber	Low volatile, paste adhesive. Non-corrosive to aluminum and steel.
	TSE385	Alkoxy	Rubber	Paste adhesive with Mil Spec. Suitable for PC substrates.
	TSE3853-W	Alkoxy	Rubber	UL recognized, semi-flowable paste. Mil Spec.
	TSE3854D	Alkoxy	Rubber	UL recognized paste adhesive. Mil Spec.
	TSE392	Alkoxy	Rubber	Fast tack, UL recognized paste adhesive.
	TSE3925	Alkoxy	Rubber	Low volatile variant of TSE392.
	TSE3940	Alkoxy	Rubber	Fast tack,UL recognized paste adhesive.
	TSE3941	Alkoxy	Rubber	Fast tack, thermally conductive paste adhesive. UL recognized.
	TSE3941M	Alkoxy	Rubber	Fast tack, thermally conductive flowable sealant. Mil Spec.
	TSE3944	Alkoxy	Rubber	Low volatile, UL recognized flowable sealant. Mil Spec.
	TSE3945	Alkoxy	Rubber	Fast tack, low volatile, UL recognized paste adhesive.
	TSE3946	Alkoxy	Rubber	Fast tack, low volatile, thermally conductive paste. UL recognized.
	TSE397	Alkoxy	Rubber	Flowable adhesive / sealant. Mil Spec.
	TSE3971	Alkoxy	Rubber	Flowable adhesive / sealant. Mil Spec.
	TSE3972	Alkoxy	Rubber	Fast tack variant of TSE397.
	TSE3975	Alkoxy	Rubber	Fast tack, low volatile adhesive / sealant. Mil Spec.
	TSE3976-B	Alkoxy	Rubber	Low volatile, temperature resistant sealant. UL recognized.
	XE11-B5320	Alkoxy	Rubber	Fast tack, low volatile, thermally conductive paste adhesive.
	XE16-508	Alkoxy	Rubber	Electro-conductive paste adhesive.
	FRV1106	Acetoxy	Rubber	Fuel, solvent, chemical, and temperature-resistant fluoro sealant.
	IS5628E	Acetoxy	Rubber	High strength sealant.
	IS800 series	Acetoxy	Rubber	UL recognized paste adhesive. FDA, USDA, and NSF compliant.
	IS806	Acetoxy	Rubber	UL recognized, temperature-resistant adhesive. FDA, USDA, and NSF compliant.
	RTV100 series	Acetoxy	Rubber	FDA, USDA, and NSF compliant paste adhesive. Mil Spec.
	RTV106	Acetoxy	Rubber	Temperature-resistant adhesive. FDA, USDA, and NSF compliant. Mil Spec.
	RTV116	Acetoxy	Rubber	Temperature-resistant flowable sealant. FDA, USDA, and NSF compliant. Mil Spec.
	RTV157	Acetoxy	Rubber	High strength paste / adhesive.
	RTV159	Acetoxy	Rubber	High strength paste / adhesive. Temperature-resistant.
	TSE370	Acetoxy	Rubber	Fast tack, general purpose paste adhesive.
	TSE382	Oxime	Rubber	Fast tack, general purpose adhesive paste. UL recognized.
	TSE3826	Oxime	Rubber	Fast tack adhesive for high-temperature applications.
	TSE3840-G	Oxime	Rubber	UL recognized general purpose adhesive / sealant.
	TSE3843-W	Oxime	Rubber	UL recognized general purpose adhesive / sealant.
	TSE384-B	Oxime	Rubber	UL recognized general purpose adhesive / sealant.
	TSE387	Oxime	Rubber	General purpose flowable adhesive / sealant.
	TSE3877-B	Oxime	Rubber	Flowable sealant for high-temperature applications.
	TSE3878	Oxime	Rubber	Paste type adhesive / sealant for high-temperature applications.
	TSE388	Oxime	Rubber	Flowable general purpose adhesive / sealant.
1 Part Heat Cure	Addisil 8101	Heat	Rubber	Paste adhesive with fast cure capability at elevated temperatures. Good storage stability.
	TSE3212	Heat	Rubber	Thixotropic adhesive / sealant.
	TSE322	Heat	Rubber	Flowable adhesive / sealant.
	TSE3221S	Heat	Rubber	Flowable adhesive / sealant.
	TSE322S	Heat	Rubber	UL recognized, semi-flowable adhesive / sealant.
	TSE326	Heat	Rubber	UL recognized, high temperature-resistant adhesive / sealant.
	TSE3260	Heat	Rubber	UL recognized, high temperature-resistant adhesive / sealant.
	TSE3261-G	Heat	Rubber	High temperature-resistant adhesive / sealant.
	TSE326M[1]	Heat	Rubber	High temperature-resistant adhesive / sealant.
	TSE3280-G	Heat	Rubber	Thermally conductive adhesive.
	TSE3281-G	Heat	Rubber	Thermally conductive adhesive.
	TSE3282-G	Heat	Rubber	High thermally conductive adhesive.
	XE13-B3208	Heat	Rubber	General purpose adhesive / sealant.
2 Part Room Temp.	RTV223	Condensation	Rubber	High strength adhesive with fast tack and cure performance.
	RTV566	Condensation	Rubber	Low volatile, high-low temperature-resistant adhesive.
	RTV577	Condensation	Rubber	Extreme low temperature resistant sealant. Release capability.
	RTV88	Condensation	Rubber	Semi-flowable temperature-resistant sealant. Release capability.
2 Part Heat Cure	LVG342	Heat	Rubber	Low volatile adhesive. Fast cure at elevated temperatures.
	RTV658	Heat	Rubber	Low volatile adhesive. Fast cure at elevated temperatures.
	TSE3320	Heat	Rubber	General purpose, semi-flowable adhesive / sealant.
	TSE3360	Heat	Rubber	General purpose adhesive / sealant.
	TSE3380	Heat	Rubber	Thermally conductive adhesive. Fast cure at elevated temperatures.
	XE14-A0425	Heat	Rubber	Heat resistant, thermally conductive adhesive.

[1] TSE326M-EX in Europe and the Americas

Performance									Product Detail
Flowability	Flame Retardancy	Low Volatility	Thermally Conductive	High Temp. Resistance	Low Temp. Resistance	Electro-Conductive	FDA Compliant	Mil-Spec	
Non-flowable	UL94 V-0								P. 13
Non-flowable	UL94 HB							MIL-A-46146	P. 13
Non-flowable		●							P. 13
Non-flowable								MIL-A-46146B	P. 13
Semi-flowable	UL94 V-0							MIL-A-46146B	P. 14
Non-flowable	UL94 V-0							MIL-A-46146B	P. 13
Non-flowable	UL94 HB							MIL-A-46146B	P. 13
Non-flowable		●						MIL-A-46146B	P. 13
Non-flowable	UL94 V-0							MIL-A-46146B	P. 14
Non-flowable	UL94 V-1		●					MIL-A-46146B	P. 14
Flowable			●					MIL-A-46146B	P. 15
Semi-flowable	UL94 V-0	●						MIL-A-46146B	P. 15
Non-flowable	UL94 V-0	●						MIL-A-46146B	P. 14
Non-flowable	UL94 V-1	●	●					MIL-A-46146B	P. 14
Flowable	UL94 HB							MIL-A-46146B	P. 15
Flowable								MIL-A-46146B	P. 14
Flowable								MIL-A-46146B	P. 15
Flowable		●						MIL-A-46146B	P. 15
Flowable	UL94 HB	●		●				MIL-A-46146B	P. 14
Non-flowable		●	●						P. 14
Non-flowable						●			P. 14
Non-flowable				●					P. 18
Flowable									P. 19
Non-flowable	UL94 HB						●		P. 18
Non-flowable	UL94 HB			●			●		P. 18
Non-flowable							●	MIL-A-46146	P. 18
Non-flowable				●			●	MIL-A-46146	P. 18
Flowable				●			●	MIL-A-46146	P. 19
Non-flowable									P. 18
Non-flowable				●					P. 18
Non-flowable									P. 18
Non-flowable	UL94 HB								P. 16
Non-flowable				●					P. 16
Semi-flowable	UL94 V-0								P. 17
Semi-flowable	UL94 V-1		●						P. 17
Non-flowable	UL94 V-0								P. 17
Flowable									P. 17
Flowable				●					P. 17
Non-flowable				●					P. 17
Flowable									P. 17
Non-Flowable				●					P. 20
Semi-flowable									P. 20
Flowable									P. 20
Flowable									P. 21
Semi-flowable	UL94 HB								P. 20
Flowable	UL94 HB			●					P. 21
Flowable	UL94 HB			●					P. 21
Flowable				●					P. 20
Flowable				●					P. 21
Flowable			●						P. 21
Flowable			●						P. 21
Flowable			●						P. 21
Non-flowable									P. 20
Non-flowable									P. 23
Flowable		●		●	●		●		P. 23
Non-flowable					●				P. 23
Semi-flowable				●					P. 23
Non-Flowable		●							P. 26
Non-flowable		●							P. 26
Semi-flowable			●						P. 26
Non-flowable									P. 26
Flowable			●						P. 27
Semi-flowable			●	●					P. 26

Regulatory restrictions may apply to certain pr□ c regions or countries.

Product Overview: Coating Materials

Type	Grade	Cure Chemistry	Cured Property	Feature
1 Part Condensation Cure	ECS0600	Alkoxy	Rubber	High purity repairable electrode coating. Fast tack.
	ECS0601	Alkoxy	Rubber	High purity, non-repairable type electrode coating. UL recognized.
	RTV160	Alkoxy	Rubber	UL recognized flowable sealant.
	TSE3941M	Alkoxy	Rubber	Fast tack, thermally conductive flowable sealant. Mil Spec.
	TSE3944	Alkoxy	Rubber	Low volatile, UL recognized flowable sealant. Mil Spec.
	TSE397	Alkoxy	Rubber	Flowable sealant. Mil Spec.
	TSE3971	Alkoxy	Rubber	Flowable sealant. Mil Spec.
	TSE3972	Alkoxy	Rubber	Fast tack variant of TSE397.
	TSE3975	Alkoxy	Rubber	Fast tack, low volatile sealant. Mil Spec.
	TSE3976-B	Alkoxy	Rubber	Low volatile, temperature resistant sealant. UL recognized.
	TSE398	Alkoxy	Rubber	Pourable coating / encapsulant. Mil Spec.
	TSE399	Alkoxy	Rubber	Low viscosity coating / potting material. Mil Spec.
	TSE3991	Alkoxy	Rubber	Low viscosity variant of TSE399.
	TSE3995	Alkoxy	Rubber	Low volatile variant of TSE399.
	TSE3996	Alkoxy	Rubber	Low volatile variant of TSE3991.
	XE11-A5133S	Alkoxy	Rubber	Low volatile, UL recognized, thermally conductive coating & potting.
	RTV110 series	Acetoxy	Rubber	General purpose coating / encapsulant. FDA, USDA, and NSF compliant. Mil Spec.
	TSE387	Oxime	Rubber	General purpose flowable sealant / coating.
	TSE3877-B	Oxime	Rubber	Flowable sealant for high-temperature applications.
	TSE388	Oxime	Rubber	Flowable, general purpose sealant / coating.
	TSE389	Oxime	Rubber	Flowable, UL recognized coating / sealant.
1 Part Heat Cure	ECC4865	Heat	Rubber	Extreme low viscosity coating material with UV tracer.
	TSE3221S	Heat	Rubber	Flowable sealant / coating material.
	TSE325	Heat	Rubber	Flowable coating / encapsulant.
	TSE3250	Heat	Rubber	Flowable coating / encapsulant.
	TSE3251	Heat	Rubber	Flowable coating material.
	TSE3251-C	Heat	Rubber	Flowable coating material.
	TSE3252	Heat	Rubber	Flowable coating material.
	TSE3253	Heat	Rubber	UL recognized coating / encapsulation.
	TSE325-B	Heat	Rubber	Flowable coating / encapsulant.
	TSJ3155	Heat	Rubber	High purity JCR-grade white rubber.
	TSJ3190	Heat	Rubber	High purity JCR-grade transparent rubber
	TSJ3194	Heat	Rubber	High purity JCR-grade black rubber.
	TSJ3195-W	Heat	Gel	High purity JCR-grade white gel.
	TSJ3197	Heat	Gel	High purity JCR-grade translucent gel.
2 Part Room Temp. Cure	RTV11	Condensation	Rubber	General purpose encapsulation and potting. FDA compliant.
	RTV511	Condensation	Rubber	Extreme low temperature-resistant coating. Excellent release properties.
	RTV560	Condensation	Rubber	High-low temperature resistant coating. Excellent release properties.
	RTV567	Condensation	Rubber	Low volatile, extreme low temperature-resistant coating. Release capability.
	RTV60	Condensation	Rubber	Extreme high temperature-resistant coating / potting. Release capability.
	RTV8111	Condensation	Rubber	General purpose coating / potting material. Mil Spec.
	RTV8112	Condensation	Rubber	General purpose coating / potting material. Mil Spec.
	RTV8262	Condensation	Rubber	High temperature-resistant coating / potting. Release capability and Mil Spec.
2 Part Heat Cure	TSE3033	Heat	Rubber	Transparent coating / encapsulant. Fast cure at elevated temperatures.
	TSE3330	Heat	Rubber	Thermally conductive coating / encapsulant.
	TSE3331	Heat	Rubber	UL recognized, thermally conductive, coating / encapsulant.
	TSE3331K[1]	Heat	Rubber	Low viscosity variant of TSE3331.
	TSE3331K EX[1]	Heat	Rubber	Low viscosity variant of TSE3331.
	XE14-B3445	Heat	Rubber	High purity JCR-grade translucent rubber.
	XE14-B5778	Heat	Rubber	High purity JCR-grade translucent rubber.
	TSJ3175	Heat	Gel	High purity JCR-grade thixotropic gel.

Grease - Product Index

Grade	Feature	Performance				Product Detail
		Thermally Conductive	Low Bleed	Low Volatility	Heat Resistant	
TSK5303	Moderate thermal conductivity with heat resistance.	●		●	●	P. 32
TSK5370	General electrical insulation. Swell resistant on silicone.			●		P. 32
TSK550	General electrical insulation, arc resistance.					P. 32
TSK551	Insulator protection from salt, dust.					P. 32
YG6111	Moderate thermal conductivity.	●		●		P. 32
YG6240	Moderate thermal conductivity, low-bleed performance.	●	●	●		P. 32
YG6260	Moderate thermal conductivity.	●		●		P. 32
TIG1000	High thermal conductivity.	●		●		P. 32

Performance									Product Detail
Flowability	Flame Retardancy	Low Volatility	Thermally Conductive	High Temp. Resistance	Low Temp. Resistance	FDA Compliant	JCR-Grade Purity	Mil-Spec	
Flowable		●							P. 16
Flowable	UL94 HB	●							P. 16
Flowable	UL94 HB								P. 15
Flowable			●					MIL-A-46146B	P. 15
Semi-flowable	UL94 V-0	●						MIL-A-46146B	P. 15
Flowable								MIL-A-46146B	P. 15
Flowable								MIL-A-46146B	P. 14
Flowable								MIL-A-46146B	P. 15
Flowable		●						MIL-A-46146B	P. 15
Flowable	UL94 HB	●		●				MIL-A-46146B	P. 14
Flowable								MIL-A-46146B	P. 16
Flowable								MIL-A-46146B	P. 16
Flowable								MIL-A-46146B	P. 16
Flowable		●						MIL-A-46146B	P. 16
Flowable		●						MIL-A-46146B	P. 16
Flowable	UL94 V-1	●	●					MIL-A-46146B	P. 15
Flowable						●		MIL-A-46146	P. 19
Flowable									P. 17
Flowable				●					P. 17
Flowable									P. 17
Flowable	UL94 HB								P. 18
Flowable									P. 22
Flowable									P. 21
Flowable									P. 22
Flowable									P. 22
Semi-flowable									P. 22
Semi-flowable									P. 22
Semi-flowable									P. 22
Semi-flowable	UL94 V-1								P. 22
Flowable									P. 22
Semi-flowable							●		P. 31
Semi-flowable							●		P. 31
Semi-flowable							●		P. 31
Semi-flowable							●		P. 31
Semi-flowable							●		P. 31
Flowable						●			P. 24
Flowable					●				P. 24
Flowable				●	●				P. 24
Flowable		●			●				P. 24
Flowable				●					P. 23
Flowable								MIL-S-23586E	P. 24
Flowable								MIL-S-23586E	P. 24
Flowable				●				MIL-S-23586E	P. 23
Flowable									P. 28
Flowable			●						P. 27
Flowable	UL94 V-0		●						P. 28
Flowable	UL94 V-0		●						P. 28
Flowable	UL94 V-0		●						P. 28
Semi-flowable							●		P. 31
Semi-flowable							●		P. 31
Semi-flowable							●		P. 31

Regulatory restrictions may apply to certain pr□ c regions or countries.

[1] TSE3331K for Asia Pacific, TSE3331K EX for Europe and the Americas

Product Overview: Encapsulants and Potting Materials

Type	Grade	Cure Chemistry	Cured Property	Feature
1 Part Condensation Cure	RTV160	Alkoxy	Rubber	UL recognized flowable encapsulant.
	TSE398	Alkoxy	Rubber	Pourable coating / encapsulant. Mil Spec.
	TSE399	Alkoxy	Rubber	Low viscosity potting / coating material. Mil Spec.
	TSE3991	Alkoxy	Rubber	Low viscosity variant of TSE399.
	TSE3995	Alkoxy	Rubber	Low volatile variant of TSE399.
	TSE3996	Alkoxy	Rubber	Low volatile variant of TSE3991.
	XE11-A5133S	Alkoxy	Rubber	Low volatile, UL recognized, thermally conductive coating & potting.
	RTV110 series	Acetoxy	Rubber	General purpose coating / encapsulant. FDA, USDA, and NSF compliant. Mil Spec.
	RTV116	Acetoxy	Rubber	Temperature-resistant flowable sealant. FDA, USDA, and NSF compliant. Mil Spec.
1 Part Heat Cure	TSE325	Heat	Rubber	Flowable coating / encapsulant.
	TSE3250	Heat	Rubber	Flowable coating / encapsulant.
	TSE3253	Heat	Rubber	UL recognized coating / encapsulation.
	TSE325-B	Heat	Rubber	Flowable coating / encapsulant.
	TSE3051	Heat	Gel	Low viscosity potting gel.
	TSE3051-FR	Heat	Gel	UL recognized variant of TSE3051.
	TSE3051-L	Heat	Gel	Low penetration variant of TSE3051.
	TSE3051ST	Heat	Gel	High strength variant of TSE3051.
	TSE3053	Heat	Gel	High penetration gel.
2 Part Room Temp. Cure	RTV11	Condensation	Rubber	General purpose encapsulation and potting. FDA compliant.
	RTV12	Condensation	Rubber	Low viscosity, vibration-dampening soft rubber potting material w/ visual clarity.
	RTV31	Condensation	Rubber	High temperature resistant potting, Excellent release properties.
	RTV41	Condensation	Rubber	General purpose sealant with excellent release properties. FDA compliant.
	RTV511	Condensation	Rubber	Extreme low temperature-resistant potting. Excellent release properties.
	RTV560	Condensation	Rubber	High-low temperature resistant potting. Excellent release properties.
	RTV566	Condensation	Rubber	Low volatile, high-low temperature-resistance.
	RTV567	Condensation	Rubber	Low volatile, extreme low temperature-resistant potting. Release capability.
	RTV60	Condensation	Rubber	Extreme high temperature-resistant coating / potting. Release capability.
	RTV8111	Condensation	Rubber	General purpose potting / coating material. Mil Spec.
	RTV8112	Condensation	Rubber	General purpose potting / coating material. Mil Spec.
	RTV8262	Condensation	Rubber	High temperature-resistant coating / potting. Release capability and Mil Spec.
	TSE350	Condensation	Rubber	Flowable potting / encapsulant with excellent release properties.
	TSE352	Condensation	Rubber	Flowable potting / encapsulant with excellent release properties.
	TSE3663	Condensation	Rubber	Flowable encapsulant / potting material.
	TSE3664	Condensation	Rubber	UL recognized, flowable encapsulant / potting material.
2 Part Heat Cure	RTV615	Heat	Rubber	High strength potting material. Fast cure at elevated temperatures.
	RTV6428	Heat	Rubber	UL recognized low-viscosity encapsulant. Fast cure at low temperatures.
	TSE3032	Heat	Rubber	Transparent potting / encapsulant with excellent release properties.
	TSE3033	Heat	Rubber	Low viscosity, transparent potting material. Fast cure at elevated temperatures.
	TSE3330	Heat	Rubber	Thermally conductive encapsulant / coating.
	TSE3331	Heat	Rubber	UL recognized, thermally conductive, coating / encapsulant.
	TSE3331K[1]	Heat	Rubber	Low viscosity variant of TSE3331.
	TSE3331K EX[1]	Heat	Rubber	Low viscosity variant of TSE3331.
	TSE3337	Heat	Rubber	High-strength potting / encapsulant.
	TSE3423	Heat	Rubber	UL recognized, thermally conductive encapsulant. Low temperature cure.
	TSE3431	Heat	Rubber	UL recognized, thermally conductive potting maerial. Release capability.
	TSE3431-H	Heat	Rubber	UL recognized, thermally conductive potting maerial. Release capability.
	XE14-B7892	Heat	Rubber	UL recognized low-viscosity potting material. Low temperture cure. Release capability.
	YE5822	Heat	Rubber	Low viscosity potting material. Excellent release properties.
	RTV6126-D1	Heat	Gel	Low viscosity potting gel with extreme fast cure at low temperatures.
	RTV6136-D1	Heat	Gel	Low viscosity potting gel with fast cure at low temperatures.
	RTV6156	Heat	Gel	Extended low temperature performance potting gel.
	RTV6186	Heat	Gel	High strength potting gel with extended pot life characteristics.
	TSE3062	Heat	Gel	Fast cure at low temperatures.
	TSE3065	Heat	Gel	Low volatile potting gel.
	TSE3070	Heat	Gel	High-elongation gel with low temperature cure.
	TSE3080	Heat	Gel	Thermally conductive potting gel.
	TSE3081	Heat	Gel	Thermally conductive potting gel.

[1] TSE3331K for Asia Pacific, TSE3331K EX for Europe and the Americas

Performance								Product Detail
Flowability	Flame Retardancy	Low Volatility	Thermally Conductive	High Temp. Resistance	Low Temp. Resistance	FDA Compliant	Mil-Spec	
Flowable	UL94 HB							P. 15
Flowable							MIL-A-46146B	P. 16
Flowable							MIL-A-46146B	P. 16
Flowable							MIL-A-46146B	P. 16
Flowable		●					MIL-A-46146B	P. 16
Flowable		●					MIL-A-46146B	P. 16
Flowable	UL94 V-1	●	●				MIL-A-46146B	P. 15
Flowable						●	MIL-A-46146	P. 19
Flowable				●		●	MIL-A-46146	P. 19
Flowable								P. 22
Flowable								P. 22
Semi-flowable	UL94 V-1							P. 22
Flowable								P. 22
Flowable								P. 29
Flowable	UL94 V-1							P. 29
Flowable								P. 29
Flowable								P. 29
Flowable								P. 29
Flowable						●		P. 24
Flowable								P. 25
Flowable				●				P. 24
Flowable						●		P. 23
Flowable					●			P. 24
Flowable				●	●			P. 24
Flowable		●		●	●			P. 23
Flowable		●			●			P. 24
Flowable				●				P. 23
Flowable							MIL-S-23586E	P. 24
Flowable							MIL-S-23586E	P. 24
Flowable				●			MIL-S-23586E	P. 23
Flowable								P. 24
Flowable								P. 24
Flowable								P. 25
Flowable	UL94 V-0							P. 25
Flowable						●		P. 27
Flowable	UL94 V-1							P. 28
Flowable								P. 27
Flowable								P. 28
Flowable			●					P. 27
Flowable	UL94 V-0		●					P. 28
Flowable	UL94 V-0		●					P. 28
Flowable	UL94 V-0		●					P. 28
Flowable								P. 26
Flowable	UL94 V-1		●					P. 27
Flowable	UL94 V-0		●					P. 27
Flowable	UL94 V-0		●					P. 27
Flowable	UL94 V-0							P. 28
Flowable								P. 28
Flowable								P. 29
Flowable								P. 29
Flowable					●			P. 30
Flowable								P. 30
Flowable								P. 29
Flowable		●						P. 29
Flowable								P. 29
Flowable			●					P. 29
Flowable			●					P. 29

Regulatory restrictions may apply to certain pr□ c regions or countries.

Selection Guide

1 Part Grades

BLACK=Rubber RED=Gels Alkoxy Acetoxy Oxime Heat

Viscosity Range	Performance						
	Thermally Conductive	Low Volatility	UL Recognized	Temp. Resistant	Electro-Conductive	FDA Compliant	General Purpose
Non-Flowable	TSE3941 TSE3946 XE11-B5320	RTV1673LV TSE3925 TSE3944 TSE3945 TSE3946 XE11-B5320	TSE3854D TSE392 TSE3940 TSE3941 TSE3944 TSE3945 TSE3946 RTV133		XE16-508		TSE385
			IS800 IS806	FRV1106 IS806 RTV106		IS800 IS806 RTV100 RTV106	RTV157 TSE370
				Addisil 8101			XE13-B3208
			TSE382 TSE3840-G TSE384-B TSE389	TSE3826 TSE3878			
High Viscosity		TSE3976-B	TSE3853-W TSE3976-B	TSE3976-B			TSE3971
	TSE3843-W		TSE3843-W	TSE3877-B			
				RTV159			IS5628E
							TSE3212 TSE322
Medium Viscosity	TSE3941M XE11-A5133S	TSE3975 XE11-A5133S	XE11-A5133S RTV160 RTV167				TSE397 TSE3972 TSE398
			RTV110	RTV116		RTV110 RTV116	
							TSE387 TSE388
	TSE3280-G TSE3281-G TSE3282-G		TSE322S TSE3253 TSE3260	TSE326 TSE3260 TSE3261-G TSE326M			TSE3221S TSE3251H TSE3251H-C
Low Viscosity		ECS0600 ECS0601 TSE3995 TSE3996					TSE399 TSE3991
			TSE3051FR				ECC4865 TSE3051 TSE3051-L TSE3051ST TSE3053 TSE325 TSE3250 TSE3251 TSE3251-C TSE3252 TSE325-B

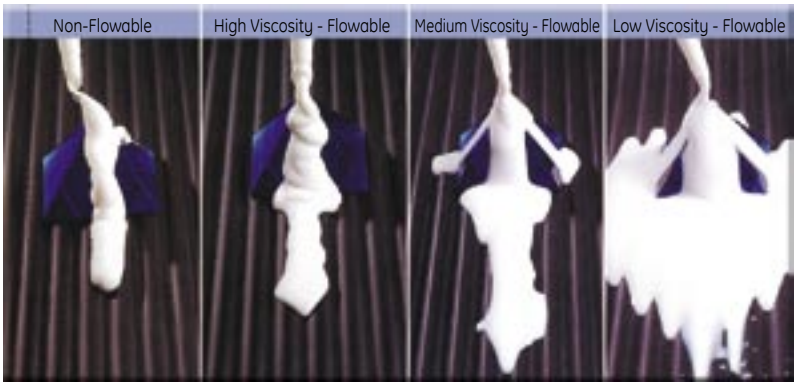
Cure System Performance Guide

Attribute	Alkoxy		Acetoxy	Oxime	Heat Cure
	Fast Cure	Slow Cure			
Cure Byproduct	Alcohol	Alcohol	Acetic Acid	Methylethyl Ketoxime	None
Cure Speed	Fast	Slow	Fast	Moderate	Very Fast
Corrosion on Copper	None	None	Yes	Yes	None
Corrosion on Metals	None	None	Yes	None	None
Odor	Low	Low	Strong	Low	None
Strength	Good	Good	Very Strong	Good	Good

2 Part Grades

BLACK=Rubber RED=Gels Room Temperature Heat

Viscosity Range	Performance					
	Thermally Conductive	Low Volatility	UL Recognized	Temp. Resistant	FDA Compliant	General Purpose
Non-Flowable		LVG342 RTV658				TSE3360 RTV223
High Viscosity				XE14-A0425 RTV577 RTV88		
Medium Viscosity	TSE3081 TSE3380					TSE3320 TSE3337
		RTV566		RTV31 RTV511 RTV560 RTV566 RTV60 RTV8262	RTV11 RTV41	RTV8112 TSE350
Low Viscosity	TSE3080 TSE3331 TSE3331K TSE3423	TSE3065	RTV6428 TSE3331 TSE3331K TSE3423 TSE3431 TSE3431-H XE14-B7892	RTV6156	RTV615	RTV6126-D1 RTV6136-D1 RTV6186 TSE3032 TSE3033 TSE3062 TSE3070 TSE3330 YE5822
		RTV567	RTV567 TSE3664			RTV12 RTV8111 TSE352 TSE3663

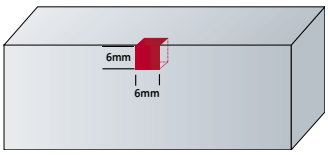


Viscosity and flowability of the silicone material are often key factors in the selection of a material for use in sealing, coating, and encapsulation / potting applications. A broad array of material performance and viscosity combinations are provided to help match the requirements of many applications.

Application Geometry and Cure Chemistry Options

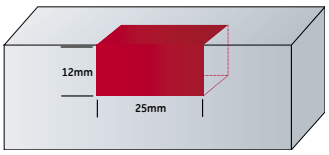
The shape and conditions of the part are important in selecting the suitable silicone grade for each application. The following are some general guidelines:

Shallow Cavity / Small Mass



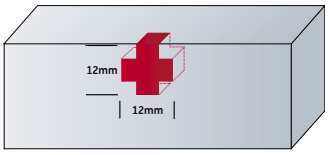
Selection Options:
- 1 Part Condensation Cure
- 1 Part Heat Cure
- 2 Part Room Temp. Cure
- 2 Part Heat Cure

Deep Cavity / Large Mass



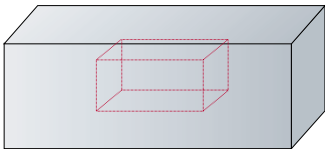
Selection Options:
- 1 Part Heat Cure
- 2 Part Room Temp. Cure
- 2 Part Heat Cure

Complex Design - Exposed Surface



Selection Options:
- 1 Part Heat Cure
- 2 Part Room Temp. Cure
- 2 Part Heat Cure

Enclosed System



Selection Options:
- 1 Part Heat Cure
- 2 Part Heat Cure

Product Details - 1 Part Condensation Cure Grades

Properties			RTV1673LV	RTV167	RTV133	TSE385	TSE3854D	TSE392	TSE3925
Cure Chemistry			Alkoxy	Alkoxy	Alkoxy	Alkoxy	Alkoxy	Alkoxy	Alkoxy
Flowability			Non-Flowable	Non-Flowable	Non-Flowable	Non-Flowable	Non-Flowable	Non-Flowable	Non-Flowable
Features and Benefits			Low volatile, paste adhesive. Non-corrosive to aluminum and steel.	High strength, paste adhesive with MIL-A-46146B and UL recognition	UL recognized paste adhesive.	Paste adhesive with MIL-A-46146B. Suitable for polycarbonate substrates	Paste adhesive with MIL-A-46146B. UL recognition	Fast tack paste adhesive with MIL-A-46146B. UL recognition	Fast tack, low volatile paste adhesive with MIL-A-46146B.
Application	Adhesive / Sealant		●	●	●	●	●	●	●
	Coating								
	Encapsulant / Potting								
Viscosity (23°C)		Pa·s (P)	-	-	-	-	-	-	-
Application Rate		g/min	-	180	650	-	-	-	-
Tack Free Time		min	15	240	60	90	15	5	5
Specific Gravity (23°C)			1.06	1.12	1.23	1.10	1.32	1.04	1.04
Hardness			-	37	46	35	40	26	30
Tensile Strength		MPa (psi)	2.5 (360)	5.5 (800)	4.5 (650)	2.9 (420)	2.7 (390)	1.6 (230)	1.6 (230)
Elongation		%	560	600	250	390	260	430	350
Adhesive Strength		MPa (psi)	1.0 (140)	1.2 (175)[3]	-	2.0 (290)[2]	2.2 (320)[2]	1.3 (190)[2]	1.3 (190)[2]
Thermal Conductivity		W/m·k	0.21	-	-	0.17	0.34	0.18	0.18
Volume Resistivity		MΩ·m	$2.5x10^7$	$3.0x10^7$	$3.0x10^7$	$5.0x10^7$	$2.0x10^6$	$2.0x10^7$	$2.0x10^7$
Dielectric Strength		kV/mm	20	20	20	22	25	22	22
Dielectric Constant		60Hz	2.6	2.8	2.8 (100Hz)	3.0	3.1	2.9	2.9
Dissipation Factor		60Hz	0.001	0.0026	0.001 (100Hz)	0.001	0.02	0.005	0.005
Low Molecular Siloxane (D_3-D_{10})		wt%	-	-	-	-	-	-	0.028
Flame Retardancy				UL94 HB	UL94 V-0		UL94 V-0	UL94 HB	
Low Volatility			●						●
Temperature Resistance									
Thermally Conductive									
FDA									
Electro-Conductivity									
MIL-Spec[4]				MIL-A-46146[6]		MIL-A-46146B[5]	MIL-A-46146B[5]	MIL-A-46146B[5]	MIL-A-46146B[5]
Color	White					○	○	○	○
	Clear							○	○
	Black		●		●				
	Gray			●			●	●	
Packaging	2.8fl oz (83ml) tube			●					
	100g tube					●			
	130g tube						●		
	150g tube								
	230g tube						●		
	10.1fl oz. (299ml) cart.			●	●				
	333ml cart.					●	●		
	18kg pail		●						
	20kg pail						●		
	5 gal. (18.9 ltr) pail			●	●				
	55 gal. (208.2 ltr) drum				●				
	See Page 32 for details							●	●

[1]JIS K 6249 [2]AL-AL Lap Shear Adhesion [3] PBT Lap Shear Adhesion [4]Testing is performed in accordance with current GE - Advanced Materials quality test methods, laboratory conditions, procedures, frequency and sampling. [5]MIL-A-46146B corrosion test [6]MIL-A-46146 physical requirements

	TSE3940	TSE3941	TSE3945	TSE3946	XE11-B5320	XE16-508	TSE3853-W	TSE3971	TSE3976-B
	Alkoxy	Alkoxy	Alkoxy	Alkoxy	Alkoxy	Alkoxy	Alkoxy	Alkoxy	Alkoxy
	Non-Flowable	Non-Flowable	Non-Flowable	Non-Flowable	Non-Flowable	Non-Flowable	Semi-Flowable	Flowable	Flowable
	Fast tack paste adhesive with MIL-A-46146B. UL recognition	Fast tack, thermally conductive paste adhesive with MIL-A-46146B. UL recognition	Fast tack, low volatile paste adhesive with MIL-A-46146B. UL recognition	Fast tack, low volatile, thermally conductive paste adhesive with MIL-A-46146B. UL recognition	Fast tack, low volatile, thermally conductive paste adhesive.	Electro-Conductive paste adhesive	Flowable adhesive / sealant with MIL-A-46146B. UL recognition	Flowable adhesive / sealant with MIL-A-46146B	Flowable, high-temperature resistant low volatile adhesive / sealant with MIL-A-46146B. UL recognition
	●	●	●	●	●	●	●	●	●
								●	●
	-	-	-	-	-	-	400 (4000) [1]	100 (1000) [1]	100 (1000) [1]
	-	-	-	-	-	-	-	-	-
	5	5	5	5	5	60	15	10	5
	1.49	1.65	1.45	1.70	2.59	1.08	1.31	1.04	1.08
	40	65	51	68	80	53	34	16	30
	2.9 (420)	2.9 (420)	2.9 (420)	3.9 (565)	3.6 (520)	2.7 (390)	2.3 (335)	1.5 (220)	1.7 (245)
	200	100	200	100	40	170	270	350	210
	1.6 (230)^2	1.4 (205)^2	1.5 (220)^2	1.6 (230)^2	1.3 (190)^2	1.3 (190)^2	1.3 (190)^2	1.1 (160)^2	1.3 (190)^2
	0.41	0.83	0.34	0.83	1.3	-	0.34	0.18	0.18
	$6.0x10^6$	$4.0x10^6$	$1.0x10^7$	$4.0x10^6$	$2.0x10^7$	$1.5x10^{-7}$	$2.0x10^6$	$2.0x10^7$	$1.0x10^7$
	21	22	22	23	17	-	20	21	20
	4.5	4.0	4.5	4.0	2.6	-	3.1	2.9	3.5
	0.05	0.04	0.05	0.04	0.005	-	0.02	0.005	0.01
	-	-	0.025	0.025	0.020	-	-	-	0.025
	UL94 V-0	UL94 V-1	UL94 V-0	UL94 V-1			UL94 V-0		UL94 HB
			●	●	●				●
									●
		●		●	●				
						●			
	MIL-A-46146B[5]	MIL-A-46146B[5]	MIL-A-46146B[5]	MIL-A-46146B[5]			MIL-A-46146B[5]	MIL-A-46146B[5]	MIL-A-46146B[5]
		○		○	○		○	○	
						●		●	●
	●		●						
						●		●	●
							●		
	●	●	●	●					
	●	●	●	●	●	●	●	●	●
									●
		●					●		

Typical property data values should not be used as specifications

Product Details - 1 Part Condensation Cure Grades

Properties		XE11-A5133S	TSE3944	TSE3941M	TSE397	TSE3972	RTV160	TSE3975
Cure Chemistry		Alkoxy	Alkoxy	Alkoxy	Alkoxy	Alkoxy	Alkoxy	Alkoxy
Flowability		Flowable	Semi-Flowable	Flowable	Flowable	Flowable	Flowable	Flowable
Features and Benefits		Flowable, low volatile thermally conductive potting / coating material with MIL-A-46146B. UL recognition	Flowable low volatile adhesive / sealant with MIL-A-46146B. UL recognition	Fast tack, thermally conductive flowable adhesive / sealant with MIL-A-46146B	Flowable adhesive / sealant with MIL-A-46146B	Fast tack, flowable adhesive / sealant with MIL-A-46146B	Flowable adhesive with UL recognition	Flowable low volatile adhesive / sealant with MIL-A-46146B
Application	Adhesive / Sealant		●	●	●	●		●
	Coating	●	●	●	●	●	●	●
	Encapsulant / Potting	●					●	
Viscosity (23°C)		60 (600) [1]	50 (500) [1]	50 (500) [1]	50 (500) [1]	50 (500) [1]	38 (380)[2]	33 (330)[1]
Application Rate	Pa·s (P)	-	-	-	-	-	-	-
Tack Free Time	g/min	10	5	5	10	5	240	10
Specific Gravity (23°C)	min	1.64	1.31	1.64	1.04	1.04	1.04	1.05
Hardness		63	38	63	13	15	25	25
Tensile Strength		3.9 (565)	1.5 (220)	3.2 (465)	1.2 (175)	1.3 (190)	1.9 (275)	1.2 (175)
Elongation	MPa (psi)	100	170	70	360	350	230	220
Adhesive Strength	%	1.3 (190)[2]	1.0 (145)[3]	1.4 (205)[3]	1.0 (145)[3]	1.0 (145)[3]	-	1.2 (175)[3]
Thermal Conductivity	MPa (psi)	0.83	0.36	0.83	0.18	0.18	-	0.21
Volume Resistivity	W/m·k	$4.0x10^6$	$1.0x10^7$	$4.0x10^6$	$2.0x10^7$	$2.0x10^7$	$4.0x10^6$	$2.0x10^7$
Dielectric Strength	MΩ·m	20	22	21	22	21	20	23
Dielectric Constant	kV/mm	4.0	3.8	4.0	2.9	2.9	2.8	2.9
Dissipation Factor	60Hz	0.04	0.02	0.04	0.005	0.005	0.001	0.005
Low Molecular Siloxane (D_3-D_{10})	60Hz	0.025	0.028	-	-	-	-	0.028
Flame Retardancy	wt%	UL94 V-1	UL94 V-0		UL94 HB		UL94 HB	
Low Volatility		●	●					●
Temperature Resistance								
Thermally Conductive		●		●				
FDA								
Electro-Conductivity								
MIL-Spec[5]		MIL-A-46146B[5]	MIL-A-46146B[6]	MIL-A-46146B[6]	MIL-A-46146B[6]	MIL-A-46146B[6]		MIL-A-46146B[6]
Color	White	○	○	○	○		○	○
	Clear				○	○		○
	Black				●			●
	Gray		●					
	Red							
Packaging	100g Tube					●		●
	150g Tube	●		●				
	10.1fl oz. (299ml) cart.						●	
	333ml cart.	●		●		●		●
	18kg pail							
	20kg pail			●				
	5 gal. (18.9 ltr) pail						●	
	55 gal. (208.2 ltr) drum						●	
	See Page 32 for details		●		●			

[1]JIS K 6249 [2]ASTM D2196 [3]AL-AL Lap Shear Adhesion [4]PBT Lap Shear Adhesion [5]Testing is performed in accordance with current GE - Advanced Materials quality test methods, laboratory conditions, procedures, frequency and sampling. [6]MIL-A-46146B corrosion test

	TSE398	TSE3996	TSE399	TSE3991	TSE3995	ECS0600	ECS0601	TSE382	TSE3826
	Alkoxy	Alkoxy	Alkoxy	Alkoxy	Alkoxy	Alkoxy	Alkoxy	Oxime	Oxime
	Flowable	Flowable	Flowable	Flowable	Flowable	Flowable	Flowable	Non-Flowable	Non-Flowable
	Flowable adhesive / sealant with MIL-A-46146B	Low viscosity, low volatile potting and coating material with MIL-A-46146B	Potting and coating material with MIL-A-46146B	Low viscosity potting and coating material with MIL-A-46146B	Low volatile potting and coating material with MIL-A-46146B	High-purity electrode coating material with fast tack performance. Repairable type	High-purity electrode coating material with fast tack performance	General purpose paste adhesive. UL recognition	High temperature resistant paste adhesive
								●	●
	●	●	●	●	●	●	●		
	●	●	●	●	●				
	17 (170) [1]	17 (170) [1]	2.5 (25) [1]	1.5 (15) [1]	2.5 (25) [1]	5.8 (58) [1]	1.4 (14) [1]	-	-
	-	-	-	-	-	-	-	-	-
	10	10	10	10	10	7	7	10	10
	1.04	1.03	1.04	1.03	1.04	1.02	1.01	1.04	1.04
	14	23	25	19	25	20	25	28	29
	1.3 (190)	1.2 (175)	1.3 (190)	0.7 (100)	1.3 (190)	1.2 (175)	0.8 (115)	1.9 (275)	2.0 (290)
	230	150	140	150	140	450	150	380	400
	0.7 (100)[3]	0.3 (45)[3]	0.3 (45)[3]	0.2 (30)[3]	0.5 (75)[3]	-	0.3 (45)[3]	1.7 (245)[3]	1.4 (205)[3]
	0.18	0.18	0.18	0.18	0.18	-	-	0.18	0.18
	$2.0x10^7$	$2.0x10^7$	$2.0x10^7$	$2.0x10^7$	$2.0x10^7$	$4.0x10^7$	$2.0x10^7$	$1.0x10^7$	$1.0x10^7$
	23	23	20	18	23	20	20	23	23
	3.0	2.9	2.9	2.9	2.9	2.8	2.6	2.9	2.9
	0.01	0.005	0.005	0.005	0.005	0.001	0.002	0.004	0.004
	-	0.028	-	-	0.028	0.01	0.01	-	-
							UL94 HB	UL94 HB	
		●			●	●	●		
									●
	MIL-A-46146B[6]	MIL-A-46146B[6]	MIL-A-46146B[6]	MIL-A-46146B[6]	MIL-A-46146B[6]				
	○	○	○	○	○	○	○	○	
	○	○	○	○	○			○	
		●	●	●	●		●	●	
								●	
									●
						●			●
						●			
	●	●	●	●	●		●	●	

Typical property data values should not be used as specifications

Product Details - 1 Part Condensation Cure Grades

Properties			TSE384-B	TSE3878	TSE3840-G	TSE3843-W	TSE3877-B	TSE387	TSE388
Cure Chemistry			Oxime	Oxime	Oxime	Oxime	Oxime	Oxime	Oxime
Flowability			Non-Flowable	Non-Flowable	Semi-Flowable	Semi-Flowable	Flowable	Flowable	Flowable
Features and Benefits			General purpose paste adhesive. UL recognition	High temperature resistant paste adhesive	UL recognized semi-flowable adhesive / sealant.	General purpose flowable adhesive / sealant. UL recognition	General purpose flowable adhesive / sealant. UL recognition	General purpose flowable adhesive / sealant.	General purpose flowable adhesive / sealant.
Application	Adhesive / Sealant		●	●	●	●	●	●	●
	Coating						●	●	●
	Encapsulant / Potting								
Viscosity	(23°C)	Pa·s (P)	-	-	-	500 (5000) [1]	300 (3000) [1]	60 (600) [1]	10 (100) [1]
Application Rate		g/min	-	-	-	-	-	-	-
Tack Free Time		min	60	20	30	60	20	90	60
Specific Gravity	(23°C)		1.46	1.05	1.40	1.57	1.08	1.03	1.04
Hardness			50	29	31	60	25	25	16
Tensile Strength		MPa (psi)	2.9 (421)	1.9 (275)	2.4 (350)	3.9 (565)	2.0 (290)	2.3 (335)	1.5 (220)
Elongation		%	270	360	270	130	440	350	330
Adhesive Strength		MPa (psi)	1.4 (203)[2]	1.0 (145)[2]	1.5 (220)[2]	1.8 (260)[2]	2.0 (290)[2]	1.3 (190)[2]	1.3 (190)[2]
Thermal Conductivity		W/m·k	0.59	-	0.25	0.67	0.18	0.18	0.18
Volume Resistivity		MΩ·m	$1.0x10^7$	$1.0x10^7$	$1.0x10^7$	$1.0x10^7$	$1.0x10^7$	$1.0x10^7$	$1.0x10^7$
Dielectric Strength		kV/mm	22	20	22	21	20	20	20
Dielectric Constant		60Hz	4.0	3.1	4.0	3.9	3.5	2.9	2.8
Dissipation Factor		60Hz	0.016	0.005	0.02	0.02	0.01	0.004	0.008
Low Molecular Siloxane	(D_3-D_{10})	wt%	-	-	-	-	-	-	-
Flame Retardancy			UL94 V-0		UL94 V-0	UL94 V-1			
Low Volatility									
Temperature Resistance				●			●		
Thermally Conductive						●			
FDA									
Electro-Conductivity									
MIL-Spec[4]									
Color	White					○		○	○
	Clear							○	
	Black		●	●			●	●	
	Gray				●				●
	Red								
	Aluminum								
Packaging	2.8fl oz. (83ml) tube								
	100g tube						●		
	140g tube								
	150g tube		●			●			
	5.4fl. oz. (160ml) cart.								
	250g tube					●			
	10.1fl oz. (299ml) cart.								
	10.3fl oz. (305ml) tube								
	333ml cart.		●	●	●	●	●		
	18kg pail						●		
	5 gal. (18.9 litr) pail								
	55 gal. (208.2 ltr) drum								
	See Page 32 for details							●	●

[1]JIS K 6249 [2]AL-AL Lap Shear Adhesion [3] PBT Lap Shear Adhesion [4]Testing is performed in accordance with current GE - Advanced Materials quality test methods, laboratory conditions, procedures, frequency and sampling [5]MIL-A-46146 Group I Type I general purpose paste [6]MIL-A-46146 Group III Type I high temperature paste

	TSE389	FRV1106	RTV157	RTV159	RTV100 series	RTV106	IS800 series	IS806	TSE370
	Oxime	Acetoxy	Acetoxy	Acetoxy	Acetoxy	Acetoxy	Acetoxy	Acetoxy	Acetoxy
	Flowable	Non-Flowable	Non-Flowable	Non-Flowable	Non-Flowable	Non-Flowable	Non-Flowable	Non-Flowable	Non-Flowable
	Flowable sealant / coating material. UL recognition	Fluorosilicone with high temperature performance. Excellent fuel, oil, moisture, UV, ozone & chemical resistance	High strength paste adhesive	High temperature, high strength, paste adhesive	Paste adhesive with FDA, USDA, NSF, MIL-A-46106, MIL-S-47162, MIL-S-14112 and UL recognition	High temperature resistant paste adhesive. FDA, USDA, NSF, MIL-A-46106.	Paste adhesive with FDA, USDA, NSF and UL recognition	High temperature, paste adhesive. FDA, USDA, NSF, UL recognition	Fast tack paste adhesive
		●	●	●	●	●	●	●	●
	●								
	5.6 (56) [1]	-	-	-	-	-	-	-	-
	-	88	155	175	400	400	410	440	-
	30	20	45	45	20	20	30	30	5
	1.04	1.58	1.09	1.09	1.05	1.07	1.04	1.05	1.04
	30	42	28	20	30	30	23	22	22
	2.0 (290)	3.33 (485)	6.2 (900)	7.0 (1,025)	2.75 (400)	2.55 (370)	2.06 (300)	1.67 (240)	2.5 (365)
	200	230	825	350	450	400	450	425	530
	1.8 (260)[2]	-	1.3 (183)[3]	-	1.4 (200)[2]	1.4 (200)[2]	1.0 (150)[2]	-	2.2 (320)[2]
	0.18	-	-	-	-	-	-	-	0.18
	$1.0x10^7$	-	$7.5x10^6$	$1.1x10^7$	$3.0x10^7$	$3.0x10^6$	-	-	$1.0x10^7$
	20	13.7	20.7	19.7	20	20	20	19.5	22
	2.7	6.3 (1000Hz)	2.9	2.6	2.8	2.8	2.9	2.9	3.0
	0.009	-	0.0009	0.0007	0.001	0.001	-	-	0.003
	-	-	-	-	-	-	-	-	-
	UL94 HB						UL94 HB	UL94 HB	
		●		●		●		●	
					●	●	●	●	
					MIL-A-46146[5]	MIL-A-46146[6]			
	○				RTV102		IS802		○
	○				RTV108		IS808		○
	●				RTV103		IS803		●
			●						
		●		●		●		●	
					RTV109		IS800.09		
			●	●	●	●	●		
		●	●	●		●			
					●	●	●	●	
					●	●			
			●	●	●	●	●	●	
			●	●	●	●	●	●	
	●								●

Typical property data values should not be used as specifications

Product Details - 1 Part Condensation Cure Grades

Properties			IS5628E	RTV116	RTV110 series
Cure Chemistry			Acetoxy	Acetoxy	Acetoxy
Flowability			Flowable	Flowable	Flowable
Features and Benefits			High strength flowable adhesive / sealant	High temperature resistant, flowable adhesive. FDA, USDA, NSF, MIL-A-47040, MIL-A-46106.	Flowable adhesive with FDA, USDA, NSF, MIL-A-46106.
Application	Adhesive / Sealant		●	●	
	Coating				●
	Encapsulant / Potting			●	●
Viscosity (23°C)		Pa·s (P)	175 (1,750)	25 (250) [1]	20 (200) [1]
Application Rate		g/min	-	-	-
Tack Free Time		min	10	30	20
Specific Gravity (23°C)			1.10	1.09	1.05
Hardness			33	20	25
Tensile Strength		MPa (psi)	7.5 (1085)	2.45 (355)	2.20 (320)
Elongation		%	750	350	325
Adhesive Strength		MPa (psi)	-	0.9 (125)[2]	0.7 (100)[2]
Thermal Conductivity		W/m·k	-	-	-
Volume Resistivity		MΩ·m	-	$2.0x10^6$	$6.0x10^6$
Dielectric Strength		kV/mm	-	16	16
Dielectric Constant		60Hz	-	2.8	2.8
Dissipation Factor		60Hz	-	0.001	0.001
Low Molecular Siloxane (D_3-D_{10})		wt%	-	-	-
Flame Retardancy					
Low Volatility					
Temperature Resistance				●	
Thermally Conductive					
FDA				●	●
Electro-Conductivity					
MIL-Spec[3]					MIL-A-46146[4]
Color	White				RTV112
	Clear		○		RTV118
	Red			●	
Packaging	2.8fl oz. (83ml) tube				●
	10.3fl oz. (305ml) tube			●	●
	310ml cart.		●		
	5 gal. (18.9 ltr) pail			●	●
	20kg pail		●		
	200 ltr drum		●		
	55 gal. (208.2 ltr) drum			●	●

Typical property data values should not be used as specifications

[1]ASTM D2196 [2]Al-Al Lap Shear Adhesion [3]Testing is performed in accordance with current GE - Advanced Materials quality test methods, laboratory conditions, procedures, frequency and sampling. [4]MIL-A-46146 Group I Type I general purpose paste

Product Details - 1 Part Heat Cure Grades

Properties			XE13-B3208	Addisil 8101	TSE3212	TSE322	TSE3261-G	TSE322S
Flowability			Non-Flowable	Non-Flowable	Semi-Flowable	Flowable	Flowable	Semi-Flowable
Features and Benefits			Paste adhesive / sealant	Paste adhesive with fast cure at elevated temperatures. Good storage stability	Thixotropic adhesive / sealant	Flowable adhesive / sealant	High temperature resistant flowable adhesive / sealant	Flowable adhesive / sealant. UL recognition
Application	Adhesive / Sealant		●	●	●	●	●	●
	Coating							
	Encapsulant / Potting							
Viscosity (23°C)		Pa·s (P)	670 (6700) [1]	-	280 (2800) [1]	110 (1100) [1]	80 (800) [1]	70 (700) [1]
Cure Condition		C/h	150/1	175/0.16	150/1	150/1	150/1	150/1
Specific Gravity (23°C)			1.08	1.11	1.26	1.27	1.48	1.26
Hardness			50	43	52	45	54	37
Tensile Strength		MPa (psi)	4.4 (640)	9.2 (1,340)	3.7 (535)	3.4 (495)	4.9 (710)	3.6 (520)
Elongation		%	430	590	240	230	160	230
Adhesive Strength		MPa (psi)	3.7 (535)[2]	-	2.6 (375)[2]	2.5 (365)[2]	1.8 (260)[2]	2.5 (365)[2]
Thermal Conductivity		W/m·k	0.20	-	0.29	0.29	0.41	0.29
Volume Resistivity		MΩ·m	$1.0x10^7$	-	$2.0x10^7$	$2.0x10^7$	$2.0x10^7$	$1.0x10^7$
Dielectric Strength		kV/mm	23	24.4	20	20	22	25
Dielectric Constant		60Hz	3.1	2.99 (50Hz)	3.2	3.1	3.3	3.1
Dissipation Factor		60Hz	0.001	0.002 (50Hz)	0.001	0.006	0.02	0.006
Flame Retardancy								UL94 HB
Temperature Resistance				●			●	
Thermally Conductive								
Color	White				○			
	Clear		○					
	Black					●		
	Gray			●			●	
	Blue					●		●
Packaging	100g tube				●	●		
	310ml cart.			●				
	333ml cart.				●	●		●
	1kg can				●	●		●
	1.5kg can						●	
	18kg pail		●	●				
	20kg pail					●		

[1]JIS K 6249 [2]AL-AL Lap Shear Adhesion

Typical property data values should not be used as specifications

Product Details - 1 Part Heat Cure Grades

Properties			TSE3280-G	TSE3281-G	TSE3221S	TSE326	TSE3260	TSE3282-G	TSE326M[4]
Flowability			Flowable	Flowable	Flowable	Flowable	Flowable	Flowable	Flowable
Features and Benefits			Thermally conductive flowable adhesive	Thermally conductive flowable adhesive	Flowable adhesive / sealant, coating material	High temperature resistant flowable adhesive. UL recognition	High temperature resistant flowable adhesive. UL recognition	Thermally conductive flowable adhesive	High temperature resistant flowable adhesive.
Application	Adhesive / Sealant		●	●	●	●	●	●	●
	Coating				●				
	Encapsulant / Potting								
Viscosity		Pa·s (P)	60 (600) [1]	60 (600) [1]	58 (580) [1]	28 (280) [1]	23 (230) [1]	20 (200) [1]	16 (160) [1]
Cure Condition		C/h	150/1	150/1	150/1	150/1	150/1	150/1	200/0.5
Specific Gravity	(23°C)		2.10	2.70	1.03	1.45	1.34	2.70	1.46
Hardness			62	84	28	43	35	80	38
Tensile Strength		MPa (psi)	3.2 (465)	4.5 (655)	2.8 (405)	3.4 (495)	1.7 (245)	4.0 (580)	2.9 (420)
Elongation		%	110	50	370	170	250	50	180
Adhesive Strength		MPa (psi)	2.0 (290)[3]	2.5 (365)[3]	2.5 (365)[3]	2.0 (290)[3]	0.5 (75)[3]	2.5 (365)[3]	1.5 (220)[3]
Thermal Conductivity		W/m·k	0.88	1.68	0.18	0.41	0.18	2.0	0.41
Volume Resistivity		MΩ·m	2.5×10^{6}	4.8×10^{6}	6.0×10^{7}	2.0×10^{7}	1.0×10^{7}	4.8×10^{6}	2.0×10^{7}
Dielectric Strength		kV/mm	21	15	23	22	25	23	22
Dielectric Constant		60Hz	4.3	5.2	2.8	3.3	3.1	5.5	3.3
Dissipation Factor		60Hz	0.002	0.002	0.001	0.02	0.01	0.001	0.02
Flame Retardancy						UL94 HB	UL94 HB		
Temperature Resistance						●	●		●
Thermally Conductive			●	●				●	
Color	White								
	Clear				○				
	Black								
	Gray		●	●				●	
	Red					●	●		●
Packaging	100g tube				●				
	140g tube					●			
	200g tube		●					●	
	333ml cart.		●		●	●			●
	1 pint (473ml)								
	1kg can			●	●	●	●	●	●
	2kg can		●						
	4kg can								
	1 gal. (3.8 ltr) can								
	18kg pail				●				
	20kg pail						●		
	5 gal. (18.9 ltr) pail								
	180kg drum				●				
	55 gal. (208.2 ltr) drum								

[1]JIS K 6249 [2]ASTM D2196 [3]AL-AL Lap Shear Adhesion [4]TSE325M EX in Europe and the Americas

	TSE3253	TSE3251	TSE3251-C	TSE325	TSE3252	TSE325-B	TSE3250	ECC4865
	Semi-Flowable	Semi-Flowable	Semi-Flowable	Flowable	Semi-Flowable	Flowable	Flowable	Flowable
	Flowable potting / coating material. UL recognition	Flowable coating material	Flowable coating material	Flowable potting / coating material	Flowable coating material	Flowable potting / coating material	Flowable potting / coating material	Low viscosity conformal coating with UV tracer, fast thermal cure & outstanding long-term viscosity stability
	●	●	●	●	●	●	●	●
	●			●		●	●	
	14 (140) [1]	8.5 (85) [1]	7.0 (70) [1]	4.0 (40) [1]	4.0 (40) [1]	3.5 (35) [1]	1.3 (13) [1]	0.25 (2.5) [2]
	150/1	150/1	150/1	150/1	150/1	150/1	150/1	-
	1.22	1.02	1.02	1.02	1.00	1.02	0.97	1.19
	30	16	16	12	21	20	9	35
	2.9 (420)	0.7 (100)	0.7 (100)	0.7 (100)	-	0.9 (130)	-	-
	200	200	200	200	-	200	-	-
	1.0 (145)[3]	0.4 (60)[3]	0.4 (60)[3]	0.4 (60)[3]	0.4 (60)[3]	0.4 (60)[3]	0.1 (15)[3]	-
	0.18	0.18	0.18	0.18	0.17	0.18	0.17	-
	$7.0x10^7$	$2.0x10^7$	$2.0x10^7$	$2.0x10^7$	$2.0x10^7$	$2.0x10^7$	$2.0x10^7$	-
	23	20	20	21	20	21	21	20
	3.0	2.8	2.8	2.9	2.8	2.9	2.8	2.4
	0.004	0.002	0.001	0.001	0.001	0.001	0.001	0.01
	UL94 V-1							
		○		○	○			
			○				○	○
	●					●		
			●					
								●
	●	●	●	●	●	●	●	
				●				
								●
				●				
								●
								●

Typical property data values should not be used as specifications

Product Details - 2 Part Room Temperature Cure Grades

Properties			RTV223		RTV577		RTV88		RTV60		RTV8262		RTV566		RTV41	
Components			RTV210 (A)	RTV223 (B)	RTV577	DBT	RTV88	DBT	RTV60	DBT	RTV8262	RTV9858	RTV566 (A)	RTV566 (B)	RTV41	DBT
Flowability			Non-Flowable		Non-Flowable		Semi-Flowable		Flowable		Flowable		Flowable		Flowable	
Features and Benefits			Fast RT cure, high strength adhesive offering flexible mix ratios and tack free times		Low temperature resistant paste sealant with excellent release capabilities		Temperature resistant, semi-flowable sealant. Excellent release capabilities		Temperature resistant flowable sealant with excellent release capabilities		High temperature, flowable sealant. MIL-S-23586E compliance. Excellent release capabilities		Low volatile, low out gassing sealant with Low and High temperature performance capability		Sealant with FDA compliance. Excellent release properties	
Application	Adhesive / Sealant		●		●		●									
	Coating								●		●					
	Encapsulant / Potting								●		●		●		●	
Mixing Ratio ((A):(B) by weight)			12:1		100:0.5		100:0.5		100:0.5		100:5		100:0.1		100:0.5	
Color (mixed)			Gray		White		Red		Red		Red		Red		White	
Viscosity (mixed) (23°C)		Pa·s (P)	-		700 (7000) [2]		880 (8800) [2]		47 (470) [2]		47 (470) [2]		43 (430) [2]		39 (390) [2]	
Pot Life (23°C)		h	-		2		0.75		2		2		1.5		1	
Tack Free Time		min	6		-		-		-		-		-		-	
Cure Condition		C/h	25/8		25/24		25/24		25/24		25/24		25/24		25/24	
Specific Gravity (23°C)			1.35		1.35		1.47		1.48		1.47		1.49		1.31	
Hardness			36		48		58		57		52		61		47	
Tensile Strength		MPa (psi)	1.6 (235)		3.0 (440)		5.8 (840)		6.9 (995)		4.0 (585)		5.5 (795)		3.6 (520)	
Elongation		%	213		150		120		120		150		120		190	
Adhesive Strength		MPa (psi)	0.73 (105)		-		-		-		-		3.2 (465)[3]		-	
Thermal Conductivity		W/m·k	-		0.31		0.31		0.31		0.31		0.31		0.31	
Volume Resistivity		MΩ·m	-		$5.6x10^6$		$2.8x10^6$		$4.4x10^6$		$4.4x10^6$		$2.0x10^6$		$1.6x10^6$	
Dielectric Strength		kV/mm	-		18.5		17.4		17.7		18.5		21.2		20.3	
Dielectric Constant		60Hz	-		3.98 (1kHz)		4.3 (1kHz)		4.0 (1kHz)		3.9 (1kHz)		3.9 (1kHz)		3.7 (1kHz)	
Dissipation Factor		60Hz	-		0.02 (1kHz)		0.03 (1kHz)		0.02 (1kHz)		0.017 (1kHz)		0.02 (1kHz)		0.007 (1kHz)	
Flame Retardancy																
Low Volatility													●			
Temperature Resistance					●		●		●		●		●			
FDA															●	
MIL-Spec[4]											MIL-S-23586E[5]					
Packaging	10g bottle															
	30g bottle															
	100g bottle															
	1kg can															
	1 pint (473 ml) can			●												
	1 gal. (3.8 ltr) pail		●	●												
	5 gal. (18.9 ltr) pail		●													
	55 gal. (208.2 ltr) drum		●													
	1 lb. (454g) Kit				●		●		●		●		●			
	12 lb. (5.4kg) Kit				●		●		●		●				●	
	13 lb. (5.9kg) Kit						●									
	50 lb. (22.7kg) Kit						●		●						●	
	55 gal. (208.2 ltr) Kit										●					
	500 lb. (227kg) Kit						●		●						●	

[1]JIS K 6249 [2]ASTM D2196 [3]AL-AL Lap Shear Adhesion [4]Testing is performed in accordance with current GE - Advanced Materials quality test methods, laboratory conditions, procedures, frequency and sampling. [5]MIL-S-23586E Type II Class 2 Grade A, [6]MIL-S-23586E Type I Class 2 Grade A, [7]MIL-S-23586E Type I Class 1 Grade B1

	RTV560		RTV31		RTV511		RTV11		RTV8112	RTV9858	RTV8111	RTV9891	TSE350	CE61	TSE352	CE61	RTV567 (A)	RTV567 (B)
	RTV560	DBT	RTV31	DBT	RTV511	DBT	RTV11	DBT	RTV8112	RTV9858	RTV8111	RTV9891	TSE350	CE61	TSE352	CE61	RTV567 (A)	RTV567 (B)
	Flowable		Flowable		Flowable		Flowable		Flowable		Flowable		Flowable		Flowable		Flowable	
	Flowable sealant with Low and High temperature performance capability. Excellent release capabilities		Temperature resistant flowable sealant with excellent release capabilities		Low temperature resistant flowable sealant with excellent release capabilities		Sealant with Excellent release properties. FDA compliance		Flowable sealant with MIL-S-23586E compliance		Flowable sealant with MIL-S-23586E compliance		Flowable potting / encapsulant with excellent release properties		Flowable potting / encapsulant with excellent release properties		Low volatile, low temperature resistant sealant. Excellent release properties	
	●				●		●		●		●						●	
	●		●		●		●		●		●		●		●		●	
	100:0.5		100:0.5		100:0.5		100:0.5		100:5		100:2		100:0.5		100:0.5		100:0.1	
	Red		Red		White		White		White		White		Light Gray		Light Gray		Translucent	
	30 (300) [2]		25 (250) [2]		16 (160) [2]		11 (110) [2]		11 (110) [2]		9.9 (99) [2]		10 (100) [1]		9.0 (90) [1]		3.9 (39) [2]	
	2.25		2		1.5		1.5		2		0.5		1		1		9	
	-		-		-		-		-		-		-		-		-	
	25/24		25/24		25/24		25/24		25/24		25/24		23/72		23/72		25/7 (days)	
	1.42		1.42		1.21		1.19		1.19		1.18		1.18		1.19		1.00	
	55		54		42		41		42		45		47		43		20	
	4.7 (685)		5.9 (870)		2.7 (385)		2.1 (300)		2.1 (300)		2.45 (355)		2.5 (365)		2.0 (290)		-	
	120		170		170		160		160		160		170		180		-	
	-		-		-		-		-		-		-		-		-	
	0.31		0.31		0.26		0.29		0.29		0.29		-		-		0.29	
	$2.0x10^6$		$1.6x10^6$		$2.0x10^6$		$1.1x10^7$		$2.7x10^7$		$1.0x10^7$		$1.0x10^6$		$1.0x10^6$		$1.1x10^7$	
	21.2		17		20.5		20.3		18.7		19.7		22		22		20.3	
	3.9 (1kHz)		4.4 (1kHz)		3.6 (1kHz)		3.3 (1kHz)		4.02 (1kHz)		3.3 (1kHz)		3.1		3.1		3.3 (1kHz)	
	0.02 (1kHz)		0.03 (1kHz)		0.005 (1kHz)		0.006 (1kHz)		0.007 (1kHz)		0.0055 (1kHz)		0.025		0.025		0.006 (1kHz)	
																	●	
	●		●		●												●	
							●											
									MIL-S-23586E[6]		MIL-S-23586E[7]							
														●		●		
														●		●		
													●		●			
			●		●		●		●		●						●	
	●		●		●		●		●		●							
			●		●		●											
									●		●							
			●		●		●											

Typical property data values should not be used as specifications

Product Details - 2 Part Room Temperature Cure Grades

Properties			TSE3663		TSE3664		RTV12	
Components			TSE3663 (A)	TSE3663 (B)	TSE3664 (A)	TSE3664 (B)	RTV12 (A)	RTV12 (C)
Flowability			Flowable		Flowable		Flowable	
Features and Benefits			Flowable encapsulant / adhesive		Flowable encapsulant / adhesive with fast tack free times. UL recognition		Low viscosity deep section curing rubber with clear color for visual checks of components	
Application	Adhesive / Sealant							
	Coating							
	Encapsulant / Potting		●		●		●	
Mixing Ratio		((A):(B) by weight)	100:2		100:7.5		20:1	
Color		(mixed)	Off-White		Gray		Clear	
Viscosity		(mixed) (23°C) Pa·s (P)	4.0 (40)[1]		3.0 (30)[1]		1.5 (15)[2]	
Pot Life		(23°C) h	0.5		0.1		1.6	
Cure Condition		C/h	23/72		23/72		23/24	
Specific Gravity		(23°C)	1.19		1.41		1.00	
Hardness			42		65		18	
Tensile Strength		MPa (psi)	1.4 (205)		4.0 (580)		-	
Elongation		%	110		80		200	
Adhesive Strength		MPa (psi)	0.9 (130)[3]		1.0 (145)[3]		-	
Thermal Conductivity		W/m·k	0.27		0.42		0.17	
Volume Resistivity		MΩ·m	$1.0x10^7$		$1.0x10^7$		$1.0x10^5$	
Dielectric Strength		kV/mm	20		20		15.7	
Dielectric Constant		60Hz	3.1		3.1		3.0 (1kHz)	
Dissipation Factor		60Hz	0.025		0.01		0.001 (1kHz)	
Flame Retardancy					UL94 V-0			
Low Volatility								
Temperature Resistance								
Thermally Conductive								
FDA								
Packaging	30g bottle			●				
	80g bottle					●		
	500g bottle			●				
	1kg can		●		●			
	1.6kg can					●		
	18kg pail		●					
	20kg pail				●			
	1 lb. (454g) Kit						●	
	42 lb. (19kg) Kit						●	
	420 lb. (190kg) Kit						●	

Typical property data values should not be used as specifications

[1]JIS K 6249 [2]ASTM D2196 [3]AL-AL Lap Shear Adhesion

Product Details - 2 Part Heat Cure Grades

Properties			RTV658		TSE3360		LVG342		XE14-A0425		TSE3320		TSE3337	
Components			RTV658 (A)	RTV658 (B)	TSE3360 (A)	TSE3360 (B)	LVG342 (A)	LVG342 (B)	XE14-A0425 (A)	XE14-A0425 (B)	TSE3320 (A)	TSE3320 (B)	TSE3337 (A)	TSE3337 (B)
Flowability			Non-Flowable		Non-Flowable		Non-Flowable		Semi-Flowable		Semi-Flowable		Flowable	
Features and Benefits			Fast cure paste adhesive with low volatility. Extended pot life.		General purpose paste adhesive with extended pot life.		Low volatile, paste adhesive with excellent compression set and CSR properties		High temperature resistant paste adhesive with thermal conductive performance.		Flowable paste adhesive with thermal conductive performance.		High-strength potting and encapsulation material.	
Application	Adhesive / Sealant		●		●		●		●		●			
	Coating													
	Encapsulant / Potting												●	
Mixing Ratio		((A):(B) by weight)	100:10		100:100		100:10		100:100		100:100		100:100	
Color		(mixed)	White		White		White		Reddish Brown		White		Black	
Viscosity		(mixed) (23°C) Pa·s (P)	-		640 (6400) [1]		-		440 (4400) [1]		65 (650) [1]		40 (400) [1]	
Application Rate		g/min	200		-		150		-		-		-	
Pot Life		(23°C) h	48		24		-		1		4		4	
Cure Condition		C/h	150/0.25		150/1		150/0.25		150/1		100/1		120/1	
Specific Gravity		(23°C)	1.17		1.12		-		2.11		1.54		1.16	
Hardness			40		42		40		66		70		55	
Tensile Strength		MPa (psi)	4.5 (650)		5.4 (785)		4.5 (650)		4.9 (710)		5.9 (855)		6.4 (930)	
Elongation		%	275		380		275		120		100		270	
Adhesive Strength		MPa (psi)	1.03 (150)[2]		3.1 (450)[2]		3.1 (450)[3]		2.6 (375)[2]		2.0 (290)[2]		3.9 (565)[2]	
Thermal Conductivity		W/m·k	-		0.23		-		0.63		0.63		0.29	
Volume Resistivity		MΩ·m	$1.0x10^6$		$1.0x10^7$		$1.0x10^6$		$2.0x10^6$		$1.0x10^7$		$2.0x10^6$	
Dielectric Strength		kV/mm	19.6		21		19.7		26		23		25	
Dielectric Constant		60Hz	-		3.0		-		3.4		3.3		3.4	
Dissipation Factor		60Hz	-		0.001		-		0.017		0.007		0.01	
Flame Retardancy														
Low Volatility			●				●							
Temperature Resistance									●					
Thermally Conductive									●		●			
FDA														
Packaging	1kg can				●	●			●	●			●	●
	1.8kg can							●						
	18kg pail						●							
	20kg pail				●	●								
	5 gal. (18.9 ltr) pail		●	●										
	25kg pail										●	●		

[1]JIS K 6249 [2]AL-AL Lap Shear Adhesion
[3]Steel Lap Shear Adhesion

Typical property data values should not be used as specifications

Product Details - 2 Part Heat Cure Grades

Properties			TSE3380		TSE3423		RTV615		TSE3032		TSE3431		TSE3431-H		TSE3330	
Components			TSE3380 (A)	TSE3380 (B)	TSE3423 (A)	TSE3423 (B)	RTV615 (A)	RTV615 (B)	TSE3032 (A)	TSE3032 (B)	TSE3431 (A)	TSE3431 (B)	TSE3431-H (A)	TSE3431-H (B)	TSE3330 (A)	TSE3330 (B)
Flowability			Flowable		Flowable		Flowable		Flowable		Flowable		Flowable		Flowable	
Features and Benefits			Thermally conductive paste adhesive.		Thermally conductive encapsulant / potting material with UL recognition, low temperature cure, and excellent release properties.		Low viscosity encapsulant / potting material with capability to cure at RT. FDA recognition.		Transparent encapsulant / potting material with excellent release properties.		Encapsulant / potting material with UL recognition, thermal conductivity, and excellent release properties.		Encapsulant / potting material with UL recognition, thermal conductivity, and excellent release properties.		Encapsulant / potting material with thermal conductivity.	
Application	Adhesive / Sealant		●													
	Coating														●	
	Encapsulant / Potting				●		●		●		●		●		●	
Mixing Ratio ((A):(B) by weight)			100:100		100:100		100:10		100:10		100:10		100:10		100:100	
Color (mixed)			Gray		Gray		Clear		Transparent		Black		Black		Reddish Brown	
Viscosity (mixed) (23°C)		Pa·s (P)	40 (400) [1]		6.2 (62) [1]		4.0 (40) [2]		4.0 (40) [1]		4.0 (40) [1]		4.0 (40) [1]		3.5 (35) [1]	
Pot Life (23°C)		h	8		1		4		4		1.5		1.5		8	
Cure Condition		C/h	150/0.5		60/1		150/0.25		100/1		100/1		100/1		120/1	
Specific Gravity (23°C)			2.70		2.17		1.02		1.02		1.50		1.52		1.57	
Hardness			70		65		44		35		70		70		65	
Tensile Strength		MPa (psi)	2.5 (365)		2.1 (305)		6.4 (925)		4.5 (655)		4.9 (710)		4.1 (595)		3.9 (565)	
Elongation		%	100		70		160		210		70		60		100	
Adhesive Strength		MPa (psi)	1.5 (220)[3]		-		-		-		-		-		1.5 (220)[3]	
Thermal Conductivity		W/m·k	1.68		1.0		0.19		0.17		0.63		0.63		0.63	
Volume Resistivity		MΩ·m	$2.1x10^6$		$2.5x10^6$		$1.8x10^7$		$2.0x10^7$		$5.0x10^6$		$5.0x10^6$		$2.0x10^6$	
Dielectric Strength		kV/mm	15		21		19.7		21		26		27		25	
Dielectric Constant		60Hz	5.7		4.7		2.89 (1kHz)		2.8		3.4		3.5		3.4	
Dissipation Factor		60Hz	0.002		0.02		0.0004 (1kHz)		0.001		0.014		0.014		0.017	
Flame Retardancy					UL94 V-1						UL94 V-0		UL94 V-0			
Low Volatility																
Temperature Resistance																
Thermally Conductive			●		●						●		●		●	
FDA							●									
Packaging	100g bottle									●		●		●		
	500g bottle									●						
	1kg can		●	●					●		●		●		●	●
	1.5kg can															
	2kg can													●		
	2.5kg can											●		●		
	5kg can															
	6kg can															
	15kg can								●							
	18kg pail															
	20kg pail				●	●							●			
	25kg pail										●		●			
	1 lb. (454g) Kit						●									
	2 lb. (907gr) kit															
	10 lb. (4.5kg) Kit						●									
	44 lb. (20kg) Kit						●									
	100 lb. (45kg) Kit															
	440 lb. (200kg) kit						●									

* TSE3331K unavailable in Europe and the Americas * TSE3331K EX unavailable in Asia Pacific

[1]JIS K 6249 [2]ASTM D2196 [3]AL-AL Lap Shear Adhesion [4]TSE3331K unavailable in Europe and the Americas [5]TSE3331K EX unavailable in Asia Pacific

	TSE3331		TSE3331K[4]		TSE3331K EX[5]		RTV6428		XE14-B7892		TSE3033		YE5822	
	TSE3331 (A)	TSE3331 (B)	TSE3331K (A)	TSE3331K (B)	TSE3331KEX (A)	TSE3331KEX (B)	RTV6428 (A)	RTV6428 (B)	XE14-B7892 (A)	XE14-B7892 (B)	TSE3033 (A)	TSE3033 (B)	YE5822 (A)	YE5822 (B)
	Flowable		Flowable		Flowable		Flowable		Flowable		Flowable		Flowable	
	Thermally conductive encapsulant / potting material with UL recognition.		Thermally conductive encapsulant / potting material with UL recognition.		Thermally conductive encapsulant / potting material with UL recognition.		Fast curing, low viscosity sealant. UL recognition. Hydrolytic stability		Encapsulant / potting material with UL recognition, low temperature cure, and excellent release properties.		Low viscosity transparent encapsulant / potting material.		Low viscosity transparent encapsulant / potting material. Excellent release properties	
	●		●		●						●			
	●		●		●		●		●		●		●	
	100:100		100:100		100:100		100:100		100:100		100:100		100:10	
	Gray		Dark Gray		Dark Gray		Dark Gray		Black		Transparent		Transparent	
	3.5 (35) [1]		2.6 (26) [1]		3.0 (30) [1]		1.3 (13) [2]		1.3 (13) [1]		1.0 (10) [1]		1.0 (10) [1]	
	8		8		8		4 min		2		6		4	
	120/1		120/1		120/1		65/0.25		60/1		150/0.5		100/1	
	1.51		1.43		1.43		1.37		1.39		1.01		0.97	
	60		45		50		62		60		30		27	
	2.9 (420)		3.1 (450)		3.0 (440)		3.24 (470)		3.5 (510)		1.0 (145)		-	
	70		120		100		60		100		130		-	
	1.3 (190)[3]		1.6 (230)[3]		1.6 (230)[3]		-		-		0.3 (44)[3]		-	
	0.63		0.53		0.53		0.31		0.44		0.17		0.17	
	$2.0x10^6$		$6.0x10^6$		$6.0x10^6$		$5.7x10^6$		$2.0x10^7$		$2.0x10^7$		$2.0x10^7$	
	26		22		22		21		27		21		21	
	3.4		3.1		3.1		3.0 (1kHz)		3.1		2.8		2.8	
	0.017		0.015		0.015		0.0061 (1kHz)		0.01		0.001		0.001	
	UL94 V-0		UL94 V-0		UL94 V-0		UL94 V-1		UL94 V-0					
	●		●		●									
														●
	●	●	●	●	●	●			●	●	●	●	●	
	●	●												
			●	●	●	●								
	●	●												
											●	●		
	●	●												
							●							
							●							

Typical property data values should not be used as specifications

Product Details - 1 Part Gels

Properties		TSE3051	TSE3051-FR	TSE3051-L	TSE3051ST	TSE3053
Flowability		Flowable	Flowable	Flowable	Flowable	Flowable
Features and Benefits		Low viscosity	Low viscosity, UL recognition	Low viscosity, low penetration	Low viscosity, high strength	Low viscosity, high penetration
Viscosity (23°C)	Pa·s (P)	0.7 (7) [1]	0.7 (7) [1]	0.7 (7) [1]	0.7 (7) [1]	0.7 (7) [1]
Cure Condition	C/h	125/2	120/1	125/2	100/2	125/2
Specific Gravity (23°C)		0.97	0.97	0.97	0.97	0.97
Penetration[3]		85	85	65	35	105
Thermal Conductivity	W/m·k	0.17	0.17	0.17	0.17	0.17
Volume Resistivity	MΩ·m	$1.0x10^7$	$5.0x10^7$	$1.0x10^7$	$1.0x10^7$	$1.0x10^7$
Dielectric Strength	kV/mm	18	18	18	18	18
Dielectric Constant	60Hz	2.8	2.8	2.8	2.8	2.8
Dissipation Factor	60Hz	0.001	0.001	0.001	0.001	0.001
Flame Retardancy			UL94 V-1			
Color	White	○				
	Clear	○	○	○		○
	Gray	●				
	Light Yellow				◐	
Packaging	1kg can	see adjacent matrix	●	●		●
	15kg can		●	●		●
	20kg can				●	

TSE3051	W	C	G
1kg bottle	○	○	●
4kg can		○	
15kg can		○	
20kg pail		○	●

W: White, C: Clear, G: Gray

Product Details - 2 Part Gels

Properties		TSE3081		TSE3080		TSE3062		TSE3065		TSE3070		RTV6126-D1		RTV6136-D1	
Components		TSE3081 (A)	TSE3081 (B)	TSE3080 (A)	TSE3080(B)	TSE3062 (A)	TSE3062 (B)	TSE3065 (A)	TSE3065 (B)	TSE3070 (A)	TSE3070 (B)	RTV6126 (A)	RTV6126 (B)	RTV6126 (A)	RTV6126 (B)
Flowability		Flowable		Flowable		Flowable		Flowable		Flowable		Flowable		Flowable	
Features and Benefits		Thermally conductive		Thermally conductive		Low temperature cure		Low volatile gel		High elongation gel		Extreme fast cure, low viscosity		Fast cure, low viscosity	
Mixing Ratio ((A):(B) by weight)		100:100		100:100		100:100		100:100		100:100		100:100		100:100	
Color (mixed)		Black		Black		Transparent		White		Transparent		Transparent		Transparent	
Viscosity (mixed) (23°C)	Pa·s (P)	20 (200)[1]		7.0 (70)[1]		1.0 (10)[1]		0.85 (8.5)[1]		0.8 (8)[1]		0.75 (7.5)[2]		0.75 (7.5)[2]	
Pot Life (23°C)	h	3		3		1		4		4		5 min		0.5	
Cure Condition	C/h	100/1		100/1		70/0.5		80/5		70/0.5		65/0.3		100/0.3	
Specific Gravity (23°C)		2.50		1.53		0.97		0.97		0.97		0.98		0.98	
Penetration[3]		10		25		55		70		65		65		60	
Thermal Conductivity	W/m·k	1.26		0.63		0.17		0.17		0.17		0.19		0.19	
Volume Resistivity	MΩ·m	$1.0x10^7$		$1.0x10^7$		$1.0x10^7$		$1.0x10^7$		$1.0x10^7$		$1.0x10^7$		$1.0x10^7$	
Dielectric Strength	kV/mm	22		22		18		18		18		20.5		20.5	
Dielectric Constant	60Hz	5.0		3.3		2.7		2.7		2.7		2.8 (1kHz)		2.8 (1kHz)	
Dissipation Factor	60Hz	0.003		0.03		0.001		0.001		0.001		0.001 (1kHz)		0.001 (1kHz)	
Low Volatility								●							
Temperature Resistance															
Thermally Conductive		●		●											
Packaging	1kg can	●	●	●	●	●	●	●	●	●	●				
	5kg can					●	●								
	18kg pail					●	●								
	20kg can	●	●	●	●										
	2 lb. (907g) Kit													●	
	18 lb. (8.2kg) Kit														
	80 lb. (36kg) Kit											●		●	
	800 lb. (360kg) Kit													●	

[1]JIS K 6249 [2]ASTM D2196 [3]1/4" cone

Typical property data values should not be used as specifications

	RTV6156		RTV6186	
	RTV6156 (A)	RTV6156 (B)	RTV6156 (A)	RTV6156 (B)
	Flowable		Flowable	
	Low temperature performance		High strength. Extended pot life	
	100:100		100:100	
	Transparent		Transparent	
	0.75 (7.5)^2		0.75 (7.5)^2	
	1		8	
	100/1		100/1	
	0.98		0.98	
	40		60	
	0.19		0.19	
	1.0x10^7		1.0x10^7	
	20.5		20.5	
	2.8 (1kHz)		2.8 (1kHz)	
	0.001 (1kHz)		0.001 (1kHz)	
	●			
	●		●	
	●		●	
			●	

Product Details - 1 Part JCR Grades

Properties		TSJ3155	TSJ3194	TSJ3190	TSJ3197	TSJ3195-W
Flowability		Semi-Flowable	Semi-Flowable	Flowable	Semi-Flowable	Semi-Flowable
Features and Benefits		Thixotropic JCR rubber. Low post-cure hardness contributes to stress relief of critical components.	Low viscosity JCR rubber.	Low viscosity JCR rubber with good light transmittance and stress relief performance.	Thixotropic JCR gel. Soft, low-penetration property contributes to stress and vibration relief.	Low viscosity JCR gel. providing stress and vibration relief performance.
Property		Rubber	Rubber	Rubber	Gel	Gel
Viscosity (23°C)	Pa·s (P)	6 (60)[1]	4.5 (45)[1]	1.1 (11) [1]	110 (100)[1]	4 (40)[1]
Color		White	Black	Transparent	Translucent	White
Cure Condition	C/h	150/4	150/4	150/4	150/4	150/4
Specific Gravity (23°C)		1.02	1.03	0.97	1.00	1.00
Hardness		11	41	12	-	-
Penetration[2]		-	-	-	40	80
Thermal Conductivity	W/m·k	0.18	0.18	0.17	0.17	0.18
Volume Resistivity	MΩ·m	$1.0x10^7$	$1.0x10^7$	$1.0x10^7$	$5.0x10^7$	$1.0x10^7$
Dielectric Strength	kV/mm	20	20	20	21	15
Dielectric Constant	60Hz	2.8	2.8	2.8	2.7	2.8
Dissipation Factor	60Hz	0.0004	0.0004	0.001	0.001	0.0004
Na^+K^+		<2	<2	<2	<2	<2
Packaging	1kg can		●	●		●
	500g bottle	●				
	1kg bottle				●	

[1]JIS K 6249 [2]1/4" cone

Typical property data values should not be used as specifications

Product Details - 2 Part JCR Grades

Properties	XE14-B3445		XE14-B5778		TSJ3175	
Components	XE14-B3445 (A)	XE14-B3445 (B)	XE14-B5778 (A)	XE14-B5778 (B)	TSJ3175 (A)	TSJ3175 (B)
Flowability	Semi-Flowable		Semi-Flowable		Semi-Flowable	
Features and Benefits	Thixotropic JCR rubber.		Flow-controllable JCR rubber.		Thixotropic JCR gel. Soft gel property contributes to stress and vibration relief.	
Property	Rubber		Rubber		Gel	
Mixing Ratio ((A):(B) by weight)	100:100		100:100		100:100	
Color (mixed)	Translucent		Translucent		Black	
Viscosity (mixed) (23°C) Pa·s (P)	63 (630)[1]		14 (140)[1]		17 (170)[1]	
Pot Life (23°C) h	72		8		12	
Cure Condition C/h	150/1		80/2		125/2	
Specific Gravity (23°C)	1.10		1.02		1.01	
Hardness	70		16		-	
Penetration[2]	-		-		70	
Thermal Conductivity W/m·k	0.20		0.18		0.18	
Volume Resistivity MΩ·m	$1.0x10^7$		$5.0x10^5$		$1.0x10^7$	
Dielectric Strength kV/mm	20		24		15	
Dielectric Constant 60Hz	2.8		2.7		2.7	
Dissipation Factor 60Hz	0.0004		0.001		0.001	
Na^+K^+	<2		<2		<2	
Packaging: 500g bottle	●	●	●	●	●	●

Typical property data values should not be used as specifications

[1]JIS K 6249 [2]1/4" cone

Product Details - Grease

Properties		TSK5303	TSK5370	TSK550	TSK551	YG6111	YG6240	YG6260	
Features and Benefits		Thermally conductive compound for medium heat dissipation. Heat resistance.	Compound for electrical insulation and sealing with swell-resistant performance.	Compound for electrical contact insulation protection against moisture and contaminants.	Compound for electrical contact insulation protection against moisture and contaminants.	Thermally conductive compound for medium heat dissipation. Low oil separation.	Thermally conductive compound for medium heat dissipation. Low oil separation.	Thermally conductive compound for medium heat dissipation. Extremely low oil separation.	Thermally conductive compound for medium to high heat dissipation applications.
Color		White	White	White	Green	White	White	White	White
Specific Gravity		2.46	-	1.03	1.03	2.46	2.46	2.5	2.62
Penetration		330	270	220	220	310	290	300	340
Bleed (150°C, 24h)	%	2.8	1.5	1.5	1.0	0.4	0.0	0.5	0.1
Evaporation (150°C, 24h)	%	0.2	0.2	0.2	0.3	0.1	0.4	0.1	0.1
Thermal Conductivity	W/m·k	0.8	-	-	-	0.84	0.84	0.84	1.0
Volume Resistivity	MΩ·m	-	$1.0x10^6$	$2.0x10^7$	$2.0x10^7$	$2.0x10^6$	$2.0x10^6$	$2.0x10^7$	$3.0x10^6$
Dielectric Constant	60Hz	5.0	2.5	2.8	2.8	5.0	5.0	5.0	5.0
Dissipation Factor	60Hz	0.005	0.0001	0.0002	0.0002	0.006	0.006	0.005	0.006
Low Molecular Siloxane	(D_3-D_{10})	-	100	-	-	100	30	30	30
Arc Resistance		-	-	120<	120<	-	-	-	-
Low Volatility		●	●			●	●	●	●
Temperature Resistance		●							
Thermally Conductive		●				●	●	●	●
Low Bleed							●		
Packaging	100g tube		●						
	180g tube			●	●				
	200g tube					●	●	●	
	1kg can	●	●	●	●	●	●	●	
	2kg can								●
	4kg can			●	●				
	8kg can	●							
	15kg pail			●					
	20kg pail					●	●	●	

Typical property data values should not be used as specifications

Packaging Supplement

Grade	100g tube			130g tube		333ml cartridge				1kg can			4 kg can	18 kg pail				20 kg pail
	W	C	B	W	G	W	C	B	G	W	C	B	W	W	C	B	G	G
TSE370	○	○				○	○	●										
TSE382	○	○				○	○	●	●					○	○	●		
TSE387	○	○				○	○	●						○	○			
TSE388	○					○			●									
TSE389		○	●			○	○	●			○							
TSE392	○	○				○	○		●					○	○		●	
TSE3925	○	○				○	○								○			
TSE3944				○	●	○			●									●
TSE397	○	○	●			○	○	●			○	●		○	○	●		
TSE398	○	○				○	○			○								
TSE399	○	○	●			○	○	●		○	○	●	○	○	○	●		
TSE3991	○	○	●				○	●			○	●			○	●		
TSE3995	○	○	●			○	○	●							○	●		
TSE3996	○	○	●			○	○	●				●		○				
ECS0601			●			○		●										

W: White, C: Clear, B: Black, G: Gray

UL Status

source: Underwriters Laboratories Inc.

Type	Grade	Color	Thickness mm	RTI		Flame Class	HWI (PLC)	HAI (PLC)	HVTR (PLC)	D495 (PLC)	CTI (PLC)	File No.
				Elec.	Mech. STR							
1 Part Condenstaion Cure	ECS0601	Black Clear White	1.5	105	105	HB	-	-				E56745
	IS802	White	1.2 only	105	105	HB	4	0	0	5	0	E36952
	IS803	Black	1.2 only	105	105	HB	4	0	0	5	0	E36952
	IS806	Red	1.9 only	105	105	HB	-	-				E36952
	IS808	Translucent	1.2 only	105	105	HB	4	0	0	5	0	E36952
	IS800.09	Aluminum	1.5	105	105	HB	-	-				E36952
	RTV133	Black	0.71	105	105	V-1	3	0	0	3	0	E36952
	RTV133	Black	1.6	105	105	V-1	2	0				E36952
	RTV133	Black	3.4	105	105	V-0	1	0				E36952
	RTV160	White	0.75	105	105	HB	4	0	1	5	0	E36952
	RTV160	White	1.5	105	105	HB	3	0				E36952
	RTV160	White	2.5	105	105	HB	3	0				E36952
	RTV160	White	3.0	105	105	HB	-	-				E36952
	RTV167	Gray	0.83	105	105	HB	3	0	0	5	0	E36952
	RTV167	Gray	1.5	105	105	HB	2	0				E36952
	RTV167	Gray	2.6	105	105	HB	2	0				E36952
	TSE382	Clear White	0.75	105	105	HB	4	0	0	4	0	E56745
	TSE382	Clear White	1.5	105	105	HB	3	0				E56745
	TSE382	Clear White	1.9	150	140	HB	3	0				E56745
	TSE382	Clear White	3.0	150	140	HB	3	0				E56745
	TSE3840-G	Gray	0.75	105	105	V-0	-	-	0	2	0	E56745
	TSE3840-G	Gray	1.5	105	105	V-0	0	0				E56745
	TSE3840-G	Gray	3.0	105	105	V-0	0	0				E56745
	TSE3843-W	White	1.1	105	105	V-1	-	-	0	1	1	E56745
	TSE3843-W	White	1.5	105	105	V-1	0	0				E56745
	TSE3843-W	White	1.9	150	140	V-1	-	-				E56745
	TSE3843-W	White	2.5	150	140	V-1	-	-				E56745
	TSE3843-W	White	3.0	150	140	V-1	-	-				E56745
	TSE384-B	Black	1.2	105	105	V-0	0	0	0	3	1	E56745
	TSE384-B	Black	1.9	150	140	V-0	-	-				E56745
	TSE384-B	Black	3.0	150	140	V-0	-	-				E56745
	TSE3853-W	White	1.5	105	105	V-0	0	3	0	3	0	E56745
	TSE3853-W	White	3.0	105	105	V-0	0	3				E56745
	TSE3854D	Gray	0.75	105	105	V-0	0	0	0	3	0	E56745
	TSE3854D	Gray	1.5	105	105	V-0	0	0				E56745
	TSE3854D	Gray	3.0	105	105	V-0	0	0				E56745
	TSE3854D	White	1.5	105	105	V-0	0	3	0	3	0	E56745
	TSE3854D	White	3.0	105	105	V-0	0	3				E56745
	TSE389	Clear White Black	1.5	105	105	HB	-	-				E56745
	TSE389	Clear White Black	3.0	105	105	HB	-	-				E56745
	TSE392	Black Clear White Gray	1.5	105	105	HB	-	-				E56745
	TSE392	Black Clear White Gray	3.0	105	105	HB	-	-				E56745
	TSE3940	Gray	0.75	105	105	V-1	-	-	0	4	0	E56745
	TSE3940	Gray	1.5	105	105	V-0	2	0				E56745
	TSE3940	Gray	3.0	105	105	V-0	2	0				E56745
	TSE3941	White	0.75	105	105	V-1	-	-	0	3	0	E56745
	TSE3941	White	1.5	105	105	V-1	2	0				E56745
	TSE3941	White	3.0	105	105	V-0	1	0				E56745

RTI: Relative Temperature Index PLC: Performance Level Category HWI: Hot Wire Ignition HAI: High-Current Arc Ignition HVTR: High-Voltage Arc Tracking Rate D495: D495 High-Voltage Dry Arc Resistance CTI: Comparative Tracking Index

Type	Grade	Color	Thickness mm	RTI		Flame Class	HWI (PLC)	HAI (PLC)	HVTR (PLC)	D495 (PLC)	CTI (PLC)	File No.
				Elec.	Mech. STR							
1 Part Condenstaion Cure	TSE3944	Gray	0.75	105	105	V-0	-	-	0	3	0	E56745
	TSE3944	White	0.75	105	105	V-1	-	-	0	3	0	E56745
	TSE3944	Gray White	1.5	105	105	V-0	0	0				E56745
	TSE3944	Gray White	3.0	105	105	V-0	0	0				E56745
	TSE3945	Gray	3.3	105	105	V-0	2	0	0	1	0	E56745
	TSE3946	White	3.0	105	105	V-1	1	0	0	0	0	E56745
	TSE397	Clear White Black	1.5	105	105	HB	-	-				E56745
	TSE397	Clear White Black	3.0	105	105	HB	-	-				E56745
	TSE3976-B	Black	0.64	105	105	HB	-	-				E56745
	TSE3976-B	Black	1.5	105	105	HB	-	-				E56745
	TSE3976-B	Black	3.0	105	105	HB	-	-				E56745
	XE11-A5133S	White	3.0	105	105	V-1	-	-				E56745
1 Part Heat Cure	TSE3051-FR	Clear	2.7-3.3	105	105	V-1	-	-				E56745
	TSE322S	Clear	1.0	105	105	HB	-	-				E56745
	TSE322S	Clear	1.5	105	105	HB	-	-				E56745
	TSE322S	Clear	3.0	105	105	V-1	-	-				E56745
	TSE3253	Black	1.3	105	105	V-1	-	-				E56745
	TSE3253	Black	2.0	105	105	HB	-	-				E56745
	TSE326	Red	1.0	105	105	HB	-	-				E56745
	TSE326	Red	3.0	105	105	HB	-	-				E56745
	TSE3260	Red	1.0	190	190	HB	-	-				E56745
	TSE3260	Red	2.0	190	190	HB	-	-				E56745
	TSE3260	Red	2.6	190	190	HB	-	-				E56745
2 Part	RTV6428	Gray	3.0	105	105	V-1	-	-				E36952
	RTV6428	Gray	6.0	105	105	V-0	-	-				E36952
	TSE3331	Black	1.0	105	105	V-0	-	-	0	0	0	E56745
	TSE3331	Black	1.6	105	105	V-0	-	-				E56745
	TSE3331	Black	2.0	105	105	V-0	-	-				E56745
	TSE3331	Black	3.0	105	105	V-0	-	-				E56745
	TSE3331K	Black	2.5	105	105	V-0	-	-				E56745
	TSE3331K	Black	3.0	105	105	V-0	-	-				E56745
	TSE3331K*EX	Black	2.5	105	105	V-0	-	-				E56745
	TSE3331K*EX	Black	3.0	105	105	V-0	-	-				E56745
	TSE3423	Gray	3.0	105	105	V-1	-	-				E56745
	TSE3431	Gray	2.0	105	105	V-1	-	-				E56745
	TSE3431	Gray	4.0	105	105	V-1	-	-				E56745
	TSE3431-H	Gray	1.0	105	105	V-0	0	0	0	1	1	E56745
	TSE3431-H	Gray	1.5	105	105	V-0	-	-				E56745
	TSE3431-H	Gray	2.5	105	105	V-0	0	0				E56745
	TSE3431-H	Gray	3.0	105	105	V-0	-	-				E56745
	TSE3664	Gray	1.0	105	105	V-1	-	-				E56745
	TSE3664	Gray	2.0	105	105	V-0	-	-				E56745
	TSE3664	Gray	3.0	105	105	V-0	-	-				E56745
	XE14-B7892	Black	2.0	105	105	V-1	-	-				E56745
	XE14-B7892	Black	3.0	105	105	V-0	-	-				E56745

HWI

Resistance to ignition when exposed to high temperatures. Expressed as the mean number of seconds required to ignite a specimen when wrapped with an energized ni-chrome resistive wire that dissipates a specified level of energy.

Mean Ignition Time (sec)	PLC
≥ 120	0
60 - 119	1
30 - 59	2
15 - 29	3
7 - 14	4
<7	5

HAI

Ability to withstand electrical arcing. Expressed as the number of arc rupture exposures required to ignite a specimen when the arc occurs directly on the surface or a specified distance above the test specimen.

Mean No. of Arcs	PLC
≥ 120	0
60 - 119	1
30 - 59	2
15 - 29	3
<15	4

HVTR

Expressed as the rate (inches per minute) that a tracking path can be produced on the surface of the material under standardized test conditions.

HVTR Range (in mm/min)	PLC
0 - 10	0
10.1 - 25.4	1
25.5 - 80	2
80.1 - 150	3
>150	4

D495

Expressed as the number of seconds that a material resists the formation of a surface-conducting path when subjected to an intermittently occurring arc of high voltage, low current characteristics.

Arc Resistance (sec)	PLC
≥ 420	0
360 - 419	1
300 - 359	2
240 - 299	3
180 - 239	4
120 - 179	5
60 - 119	6
<60	7

CTI

Expressed as that voltage which causes tracking after 50 drops of 0.1% ammonium chloride solution have fallen on the material.

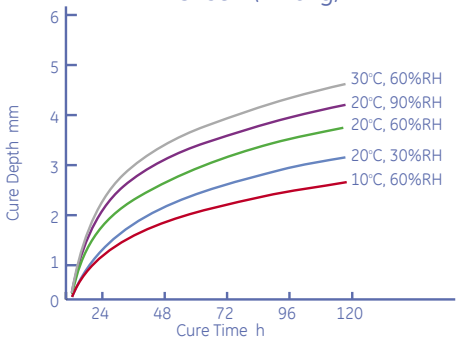
Tracking Index (volts)	PLC
≥600	0
400 -599	1
250 - 399	2
175 - 249	3
100 - 174	4
<100	5

Cure Properties

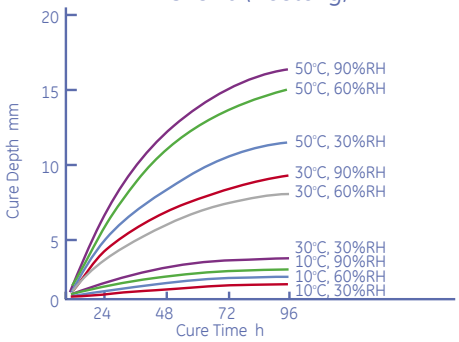
Condensation Cure Grades

Condensation cure grades cure with exposure to atmospheric moisture. The cure process begins from the outer surface and proceeds inward. Therefore, deep section curing (in excess of 6mm) is not recommended. Typically, tack-free is achieved in 5-60 minutes at 25°C, 50%RH, depending on the grade.

TSE392 (Alkoxy)

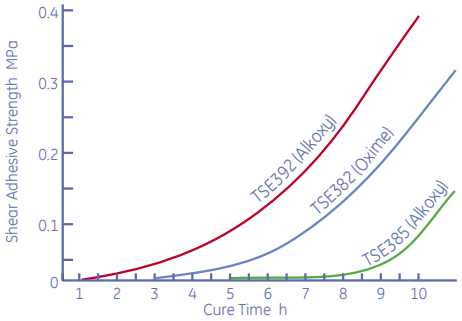


TSE370 (Acetoxy)



Cure Time Test Method: Liquid silicone inserted in a 10mm diameter glass tube, and measurements of the cure length taken at specific intervals.

Manifestation of Adhesion



Test Conditions:
- Aluminum substrate
- 20°C, 60%RH
- Primerless

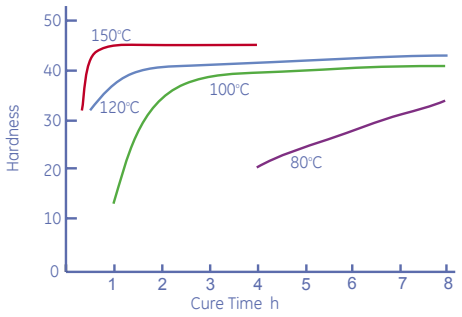
Test Speed:
- 10mm / min.

Adhesion is typicaly achieved after 5-15 hours. Full material properties including electronic performance, is achieved in up to 7 days.

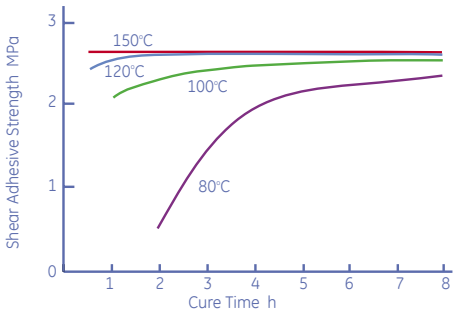
Heat Cure Grades

Heat cure grades consist of either 1 part or 2 part grades, and are characterized by a cure mechanism this is triggered by exposure to heat. Cure performance is affected by temperature and time, resulting in a variety of cure profiles based upon the combination of these variables. The following examples demonstrate the effect of temperature and time in hardness change and manifestation of adhesive strength.

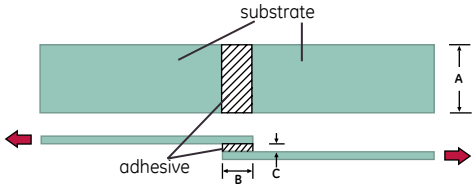
Hardness & Cure Time - TSE322



Adhesion & Cure Time - TSE322



Shear Adhesion Test Method



	JIS Method	ASTM Method
A:	25mm	1"
B:	10mm	0.5"
C:	1mm	-
Pull Rate:	10mm/min.	1"/min.

Typical Adhesion Performance

Condensation Cure Grades

	Substrate	Alkoxy (TSE392)				Acetoxy (TSE370)			Oxime (TSE382)			
		Primerless	ME121	ME123	XP80-A5363	Primerless	ME121	ME123	Primerless	ME121	ME123	XP80-A5363 / YP9341
Metals	Copper	●	●			●[1]	●[1]		▲[1]	●[1]		
	Steel	●	●			▲	●		●	●		
	Brass	●	●			▲[1]	▲[1]		▲[1]	●[1]		
	Stainless Steel	●	●			▲	●		▲	●		
	Aluminum	●	●			●	●		●	●		
	Galvanized Steel	●	●				●		●	●		
	Tin	●	●			●	●		●	●		
Plastic	Acrylic Resin	●		●		×		●	●	●		
	Phenol Resin	●		●		●		●	●	●		
	Epoxy Resin	●		●		●		●	●	●		
	Polycarbonate	●[2]		●[2]					●[2]	●[2]		
	Soft Polyvinyl Chloride	●		●		×		●	×	×	●	
	Rigid Polyvinyl Chloride	●		●		●		●	●	●	●	
	Polyester Film	●		●		▲		●	●	●	●	
	Unsaturated Polyester	●		●		●		●	●	●	●	
	Polyamide	●		●		●		●	●	●	●	
	Nylon 66	●		●					●		●	●[3]
	PBT	●		●					▲		●	
	PPS	●		●					▲		●	●[3]
	ABS	●		●		●		●	●	●	●	
	Polypropylene	×		×	●				×	×	×	●[4]
	Polyethylene	×		×	▲	×		×	×	×	×	
	Fluorocarbon Resin	×		×		×		×	×	×	×	
	Silicone Resin Laminate	●		●		●		●	●	●		
Rubber	Chloroprene Rubber	▲		●		▲		●	▲		●	
	Nitrile Rubber	▲		●		●		●	▲		●	
	Styrene Butadiene Rubber	▲		●					▲		●	
	Ethylene Propylene Rubber	▲		●					▲		●	
	Silicone	●		●		●		●	●		●	
Inorganic	Glass	●	●			●	●		●	●		
	Ceramic	●	●			●	●		●	●		

● Adheres completely, ▲ Adheres, but separates from surface when pulled, × Does not adhere

[1] May corrode under some usage conditions, [2] Stress cracking may occur under some usage conditions, [3] YP9341, [4] XP80-A5363

Heat Cure Grades

	TSE322	
	Substrate	Adhesion
Metals	Aluminum	●
	Copper	●
	Brass	●
	Stainless Steel	●
	Nickel Plate	●
Plastic	PPS	●
	PBT	●
	Epoxy Resin	●
	Polyester	●
Inorganic	Glass	●
	Ceramics	●

● Adheres completely

Frequently Asked Questions

What does RTV mean?

RTV stands for Room Temperature Vulcanization (cure). Despite the low-temperature connotations conveyed by this name, RTV silicones consist of *both* Room Temperture Cure *and* Heat Cure grades.

What is the cure mechanism of a condensation cure product?

Condensation cure silicone products cure when exposed to atmospheric moisture. Moisture in the air is generally required to cure (or vulcanize) condensation cure products. The cure process begins from the outer surface, and therefore time is required for complete cure. The cure time is affected by the reaction mechanism and viscosity of the material. Generally, at 25C and 50%RH, condensation cure RTV silicones cure through in 24 to 48 hours. Full physical properties may take up to 7 days to develop.

What is the depth (bead thickness) limitation for a condensation cure grade?

For 1-part, condensation cure products, the depth (bead thickness) limitation is approximately 6mm (1/4"). For 2-part, condensation cure products, the depth (bead thickness) limitation is approximately 25mm (1").

Can I accelerate the cure time of a 1-part product?

Condensation cure silicone cure rates depend on humidity, silicone thickness, and to a smaller degree heat. Increasing the relative humidity around the silicone or reducing the thickness of the material will reduce the time to cure the material. Increased heat (not over 50C) will somewhat reduce cure time but as mentioned will do so to a much smaller degree than humidity or thickness.

What is the cure mechanism of an addition cure product?

Addition cure silicone RTV products may be 1 or 2-part and cure when exposed to heat. Although some heat cure products can cure at room temperature, higher heat greatly accelerates the cure. 1-part heat cure products typically have an inhibitor in the formulation that stops the product from curing until an activation temperature, greater than room temperature, is achieved and the inhibitor is driven off and the cure reaction is allowed to proceed.

What does "tack free time" mean?

Tack free refers to the amount of time it takes for a condensation cure silicone product to form a cured outer layer (the cured outer layer is not tacky like uncured material).

What is "mix ratio"?

Mix ratio is a term used to state the amount of each material to be in a multi-component material. The mix ratios for 2-part products are described on the individual product data sheets and are given as a ratio by weight of each material.

What does "pot life" or "work life" mean?

The amount of time after a 2-part grade is mixed with its curing agent that it will remain useful or pliable.

How do I remove silicone?

Before it is cured: use a putty knife to remove any of the uncured paste. Wipe the area clean with isopropyl alcohol to remove any leftover residue. After it is cured: First mechanically remove as much of the silicone as you can with either a knife or a razor. A solvent (mineral spirits, toluene, xylene, acetone) can them be used to remove any oily residue or any remaining silicone, It may be necessary to soak the silicone in a solvent overnight to break it down.

Can I thin a silicone?

Silicone can be thinned using a solvent in which the silicone is miscible, generally an aromatic solvent such as toluene or xylene. As always, be sure to follow the producer's instructions when using solvent products and always use in a well-ventilated area. The shrinkage of the silicone and the cure time will increase with the addition of solvent. Alternative suggestions would include non-reactive fluids or an RTV with a lower viscosity.

What can I do to improve the adhesion of the silicone adhesive to my parts?

The first step to good adhesion is to have clean surfaces for the silicone to bond to. For difficult-to-bond-substrates, GE - Advanced Materials, Silicones offers a number of primers that can be used to improve and maximize adhesion.

How do I ensure that air is removed from 2-part grades?

If you are hand mixing, air may become added to the material during the mixing process. Vacuum de-airing is most effective in removing air prior to use. Automated mixing equipment that utilizes a static mixer can eliminate the need to de-air prior to dispensing.

On complex high-density electronics, air can sometimes be trapped under components during the potting process. Where this is a concern, potting under vacuum or vacuum de-airing after potting can remove the trapped air. An alternate approach may be to use a grade with a low viscosity and longer potlife and to cure at lower temperatures (if heat-cure grade), allowing entrapped air to escape prior to the cure of the material.

What is cure inhibition, and how do I prevent it?

Cure inhibition is a phenomenon that may be observed in addition-cure grades. These materials use a platinum catalyst to drive the curing reaction. Surfaces containing water, sulphur, nitrogen compounds, organic metal compounds, or phosphate compounds, may inhibit cure.

Cure inhibition is characterized by a gummy or sticky appearance of the silicone at the interface between the silicone and offending substrate. Inhibition can be prevented by application of a barrier coat, cleaning of the offending material prior to application of the silicone material, replacing the offending material with a suitable alternative, or selection of a condensation cure grade.

Other Electronic Solutions from GE - Advanced Materials, Silicones

12-page brochure provides detailed information on silicone materials used for thermal management applications in electronics and micro-electronics. Includes SilCool* grease & adhesives, and conventional grades for adhesion, encapsulation and potting.

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