



# Silicone Solutions for Electronic Devices and Component Assemblies



GE imagination at work

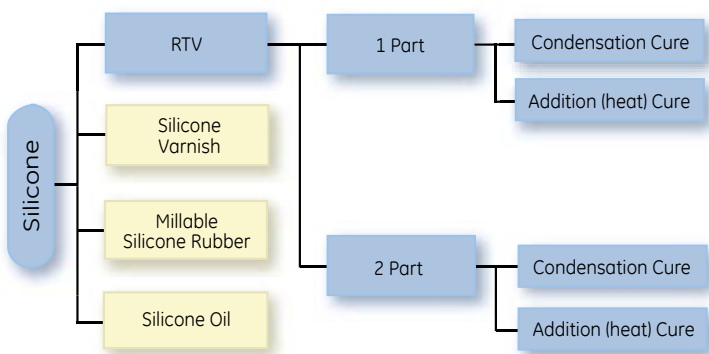
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## Silicone Product Profile

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 <sup>1</sup> | Excellent    | None         | None         |
| UV Stability                  | Excellent    | Poor         | Poor         |
| Ozone Stability               | Excellent    | Poor         | Poor         |
| Modulus                       | Low          | High         | High         |

<sup>1</sup> 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

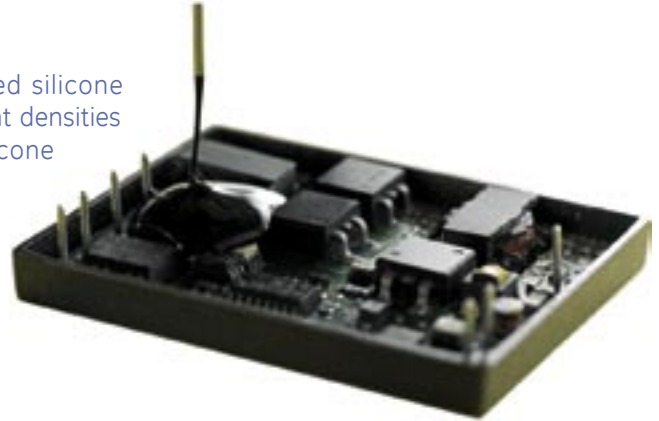
# Industries Served

## 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

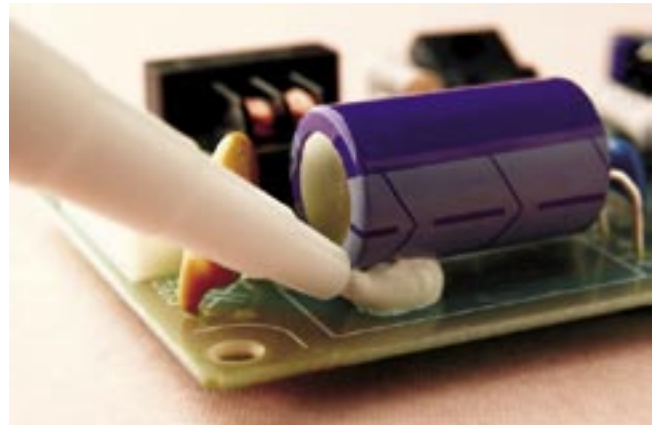


## Board Assembly

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

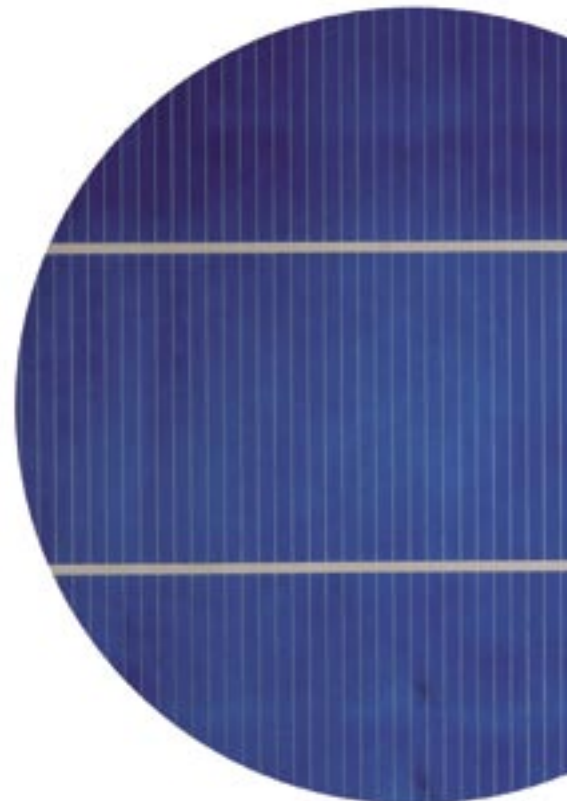


## Solar Energy

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 <sup>1</sup> | 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.   |

<sup>1</sup> 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 products.

● indicates 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 <sup>1</sup>    | Heat           | Rubber                                       | Low viscosity variant of TSE3331.  |
|                          | TSE3331K EX <sup>1</sup> | 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 products.

<sup>1</sup> 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<br>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 <sup>1</sup>    | Heat           | Rubber  | Low viscosity variant of TSE3331.   |
|                             | TSE3331K EX <sup>1</sup> | 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 material. Release capability.               |
|                             | TSE3431-H                | Heat           | Rubber  | UL recognized, thermally conductive potting material. Release capability.               |
|                             | XE14-B7892               | Heat           | Rubber  | UL recognized low-viscosity potting material. Low temperature 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.                       |   |

<sup>1</sup> 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. 23 |                |
| Flowable      |                  |                |                      |                       | ●                    |               |              | P. 24 |                |
| 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 products

in certain 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<br>TSE3946<br>XE11-B5320    | RTV1673LV<br>TSE3925<br>TSE3944<br>TSE3945<br>TSE3946<br>XE11-B5320 | TSE3854D<br>TSE392<br>TSE3940<br>TSE3941<br>TSE3944<br>TSE3945<br>TSE3946<br>RTV133 |   | XE16-508           |                                    | TSE385  |
|                  |                                     |   | IS800<br>IS806  | FRV1106<br>IS806<br>RTV106                |                    | IS800<br>IS806<br>RTV100<br>RTV106 | RTV157<br>TSE370  |
|                  |                                     |   |   | Addisil 8101                              |                    |                                    | XE13-B3208  |
|                  |                                     |   | TSE382<br>TSE3840-G<br>TSE384-B<br>TSE389   | TSE3826<br>TSE3878                        |                    |                                    |   |
| High Viscosity   |                                     | TSE3976-B   | TSE3853-W<br>TSE3976-B  | TSE3976-B                                 |                    |                                    | TSE3971   |
|                  | TSE3843-W                           |   | TSE3843-W   | TSE3877-B<br>RTV159                       |                    |                                    | IS5628E<br>TSE3212<br>TSE322  |
|                  |                                     |   |   |   |                    |                                    |   |
| Medium Viscosity | TSE3941M<br>XE11-A5133S             | TSE3975<br>XE11-A5133S  | XE11-A5133S<br>RTV160<br>RTV167<br>RTV110   |   |                    |                                    | TSE397<br>TSE3972<br>TSE398   |
|                  |                                     |   | RTV110  | RTV116                                    |                    | RTV110<br>RTV116                   |   |
|                  |                                     |   |   |   |                    |                                    | TSE387<br>TSE388  |
|                  | TSE3280-G<br>TSE3281-G<br>TSE3282-G |   | TSE322S<br>TSE3253<br>TSE3260   | TSE326<br>TSE3260<br>TSE3261-G<br>TSE326M |                    |                                    | TSE3221S<br>TSE3251H<br>TSE3251H-C  |
| Low Viscosity    |                                     | ECS0600<br>ECS0601<br>TSE3995<br>TSE3996                            |   |   |                    |                                    | TSE399<br>TSE3991   |
|                  |                                     |   | TSE3051FR   |   |                    |                                    | ECC4865<br>TSE3051<br>TSE3051-L<br>TSE3051ST<br>TSE3053<br>TSE325<br>TSE3250<br>TSE3251<br>TSE3251-C<br>TSE3252<br>TSE325-B |

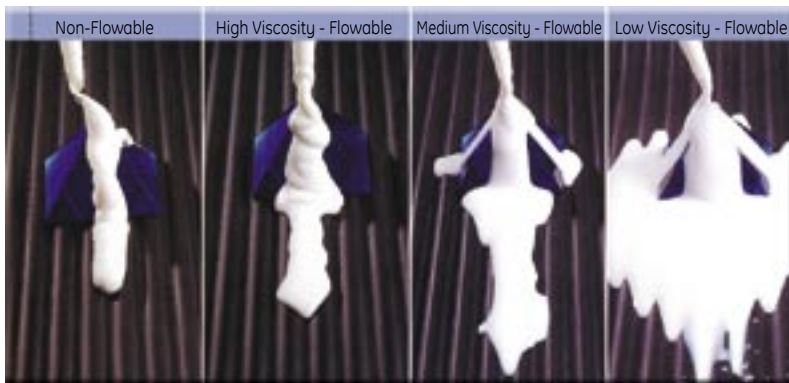
## Cure System Performance Guide

| 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<br>RTV658 |   |   |                | TSE3360  |
|                  |   |                  |   |   |                | RTV223   |
| High Viscosity   |   |                  |   | XE14-A0425<br>RTV577<br>RTV88                           |                |  |
|                  | TSE3081<br>TSE3380                        |                  |   |   |                | TSE3320<br>TSE3337   |
| Medium Viscosity |   | RTV566           |   | RTV31<br>RTV511<br>RTV560<br>RTV566<br>RTV60<br>RTV8262 | RTV11<br>RTV41 | RTV8112<br>TSE350  |
|                  |   |                  |   |   |                |  |
| Low Viscosity    | TSE3080<br>TSE3331<br>TSE3331K<br>TSE3423 | TSE3065          | RTV6428<br>TSE3331<br>TSE3331K<br>TSE3423<br>TSE3431<br>TSE3431-H<br>XE14-B7892 | RTV6156   | RTV615         | RTV6126-D1<br>RTV6136-D1<br>RTV6186<br>TSE3032<br>TSE3033<br>TSE3062<br>TSE3070<br>TSE3330<br>YE5822 |
|                  |   | RTV567           | RTV567<br>TSE3664   |   |                | RTV12<br>RTV8111<br>TSE352<br>TSE3663  |

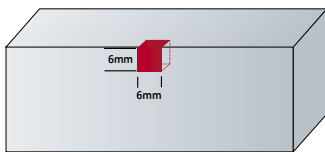


Viscosity and flowability of the silicone material are often key factors in the selection of a material for use in sealing, coating, and encapsulation / potting applications. A broad array of material performance and viscosity combinations are provided to help match the requirements of many applications.

## Application Geometry and Cure Chemistry Options

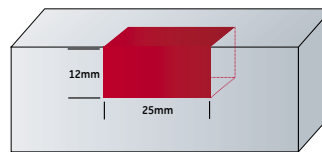
The shape and conditions of the part are important in selecting the suitable silicone grade for each application. The following are some general guidelines:

### Shallow Cavity / Small Mass



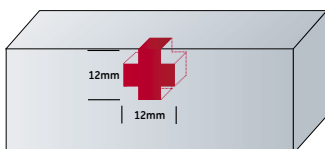
- Selection Options:
- 1 Part Condensation Cure
  - 1 Part Heat Cure
  - 2 Part Room Temp. Cure
  - 2 Part Heat Cure

### Deep Cavity / Large Mass



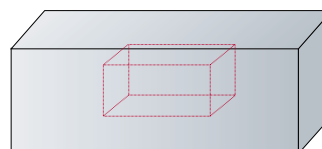
- Selection Options:
- 1 Part Heat Cure
  - 2 Part Room Temp. Cure
  - 2 Part Heat Cure

### 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

Product Details: 1 Part Condensation Cure

| 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) <sup>3</sup>   | -                             | 2.0 (290) <sup>2</sup>  | 2.2 (320) <sup>2</sup>                           | 1.3 (190) <sup>2</sup>                                     | 1.3 (190) <sup>2</sup>                                    |
| Thermal Conductivity  | W/m.k                    | 0.21   | -  | -                             | 0.17  | 0.34   | 0.18   | 0.18  |
| Volume Resistivity  | MΩ-m                     | 2.5x10 <sup>7</sup>  | 3.0x10 <sup>7</sup>  | 3.0x10 <sup>7</sup>           | 5.0x10 <sup>7</sup>   | 2.0x10 <sup>6</sup>                              | 2.0x10 <sup>7</sup>  | 2.0x10 <sup>7</sup>                                       |
| 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 <sub>3</sub> -D <sub>10</sub> ) 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 <sup>4</sup>   |                          |  | MIL-A-46146 <sup>6</sup>   |                               | MIL-A-46146B <sup>5</sup>   | MIL-A-46146B <sup>5</sup>                        | MIL-A-46146B <sup>5</sup>                                  | MIL-A-46146B <sup>5</sup>                                 |
| 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                                       |                          |  |  |                               |   | ●  | ●  |   |

<sup>1</sup>JIS K 6249    <sup>2</sup>AL-AL Lap Shear Adhesion    <sup>3</sup>PBT Lap Shear Adhesion    <sup>4</sup>Testing is performed in accordance with current GE - Advanced Materials quality test methods, laboratory conditions, procedures, frequency and sampling.    <sup>5</sup>MIL-A-46146B corrosion test    <sup>6</sup>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 |
|  | ●  | ●  | ●  | ●  | ●   | ●                                 | ●   | ●<br>●  | ●<br>●   |
|  | -  | -  | -  | -  | -   | -                                 | 400 (4000) <sup>1</sup>                                       | 100 (1000) <sup>1</sup>                       | 100 (1000) <sup>1</sup>  |
|  | -  | -  | -  | -  | -   | -                                 | -   | -   | -  |
|  | 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) <sup>2</sup>                                     | 1.4 (205) <sup>2</sup>   | 1.5 (220) <sup>2</sup>   | 1.6 (230) <sup>2</sup>   | 1.3 (190) <sup>2</sup>  | 1.3 (190) <sup>2</sup>            | 1.3 (190) <sup>2</sup>  | 1.1 (160) <sup>2</sup>                        | 1.3 (190) <sup>2</sup>   |
|  | 0.41   | 0.83   | 0.34   | 0.83   | 1.3   | -                                 | 0.34  | 0.18  | 0.18   |
|  | 6.0x10 <sup>6</sup>  | 4.0x10 <sup>6</sup>  | 1.0x10 <sup>7</sup>  | 4.0x10 <sup>6</sup>  | 2.0x10 <sup>7</sup>   | 1.5x10 <sup>-7</sup>              | 2.0x10 <sup>6</sup>   | 2.0x10 <sup>7</sup>                           | 1.0x10 <sup>7</sup>  |
|  | 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  |
|  |  |  | ●  | ●  | ●   |                                   |   |   | ●<br>●   |
|  |  | ●  |  | ●  | ●   |                                   |   |   |  |
|  |  |  |  |  |   | ●                                 |   |   |  |
|  | MIL-A-46146B <sup>5</sup>                                  | MIL-A-46146B <sup>5</sup>  | MIL-A-46146B <sup>5</sup>  | MIL-A-46146B <sup>5</sup>  |   |                                   | MIL-A-46146B <sup>5</sup>                                     | MIL-A-46146B <sup>5</sup>                     | MIL-A-46146B <sup>5</sup>  |
|  |  | ○  |  | ○  | ○   |                                   | ○   | ○   |  |
|  | ●  |  | ●  |  |   | ●                                 |   | ●   | ●  |
|  |  |  |  |  |   | ●                                 |   | ●   | ●  |
|  |  |  |  |  |   |                                   | ●   |   |  |
|  | ●  | ●  | ●  | ●  |   |                                   |   |   |  |
|  |  |  |  |  |   |                                   |   |   |  |
|  | ●  | ●  | ●  | ●  | ●   | ●                                 | ●   | ●   | ●<br>●   |
|  |  | ●  |  |  |   |                                   | ●   |   |  |
|  |  |  |  |  |   |                                   |   |   |  |
|  |  |  |  |  |   |                                   |   |   |  |

Typical property data values should not be used as specifications

# Product Details - 1 Part Condensation Cure Grades

Product Details: 1 Part Condensation Cure

| 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) <sup>1</sup>  | 50 (500) <sup>1</sup>  | 50 (500) <sup>1</sup>   | 50 (500) <sup>1</sup>                         | 50 (500) <sup>1</sup>                                    | 38 (380) <sup>2</sup>                 | 33 (330) <sup>1</sup>                                      |
| 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) <sup>2</sup>   | 1.0 (145) <sup>3</sup>   | 1.4 (205) <sup>3</sup>  | 1.0 (145) <sup>3</sup>                        | 1.0 (145) <sup>3</sup>                                   | -                                     | 1.2 (175) <sup>3</sup>                                     |
| Thermal Conductivity MPa (psi)                                 |                          | 0.83   | 0.36   | 0.83  | 0.18  | 0.18   | -                                     | 0.21   |
| Volume Resistivity W/m.k                                       |                          | 4.0x10 <sup>6</sup>  | 1.0x10 <sup>7</sup>  | 4.0x10 <sup>6</sup>   | 2.0x10 <sup>7</sup>                           | 2.0x10 <sup>7</sup>                                      | 4.0x10 <sup>6</sup>                   | 2.0x10 <sup>7</sup>  |
| Dielectric Strength MΩm  |                          | 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 <sub>3</sub> -D <sub>10</sub> ) 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 <sup>5</sup>  |                          | MIL-A-46146B <sup>5</sup>  | MIL-A-46146B <sup>6</sup>  | MIL-A-46146B <sup>6</sup>   | MIL-A-46146B <sup>6</sup>                     | MIL-A-46146B <sup>6</sup>                                |                                       | MIL-A-46146B <sup>6</sup>                                  |
| 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  |                          |  | ●  |   | ●   |  |                                       |  |

<sup>1</sup>JIS K 6249 <sup>2</sup>ASTM D2196 <sup>3</sup>AL-AL Lap Shear Adhesion <sup>4</sup>PBT Lap Shear Adhesion Materials quality test methods, laboratory conditions, procedures, frequency and sampling.

<sup>5</sup>Testing is performed in accordance with current GE - Advanced <sup>6</sup>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) <sup>1</sup>                         | 17 (170) <sup>1</sup>  | 2.5 (25) <sup>1</sup>                          | 1.5 (15) <sup>1</sup>  | 2.5 (25) <sup>1</sup>                                       | 5.8 (58) <sup>1</sup>  | 1.4 (14) <sup>1</sup>   | -  | -   |
|  | -   | -  | -  | -  | -   | -  | -   | -  | -   |
|  | 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) <sup>3</sup>                        | 0.3 (45) <sup>3</sup>  | 0.3 (45) <sup>3</sup>                          | 0.2 (30) <sup>3</sup>  | 0.5 (75) <sup>3</sup>                                       | -  | 0.3 (45) <sup>3</sup>   | 1.7 (245) <sup>3</sup>                         | 1.4 (205) <sup>3</sup>                    |
|  | 0.18  | 0.18   | 0.18   | 0.18   | 0.18  | -  | -   | 0.18   | 0.18                                      |
|  | 2.0×10 <sup>7</sup>                           | 2.0×10 <sup>7</sup>  | 2.0×10 <sup>7</sup>                            | 2.0×10 <sup>7</sup>  | 2.0×10 <sup>7</sup>   | 4.0×10 <sup>7</sup>  | 2.0×10 <sup>7</sup>   | 1.0×10 <sup>7</sup>                            | 1.0×10 <sup>7</sup>                       |
|  | 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 <sup>6</sup>                     | MIL-A-46146B <sup>6</sup>  | MIL-A-46146B <sup>6</sup>                      | MIL-A-46146B <sup>6</sup>                                    | MIL-A-46146B <sup>6</sup>                                   |  |   |  |   |
|  | ○   | ○  | ○  | ○  | ○   | ○  | ○   | ○  |   |
|  | ○   | ○  | ○  | ○  | ○   |  |   | ○  |   |
|  |   | ●  | ●  | ●  | ●   |  | ●   | ●  |   |
|  |   |  |  |  |   |  | ●   | ●  |   |
|  |   |  |  |  |   | ●  |   |  | ●   |
|  |   |  |  |  |   |  |   |  |   |
|  |   |  |  |  |   | ●  |   |  | ●   |
|  |   |  |  |  |   |  |   |  |   |
|  | ●   | ●  | ●  | ●  | ●   |  | ●   | ●  |   |

Typical property data values should not be used as specifications

# Product Details - 1 Part Condensation Cure Grades

Product Details: 1 Part Condensation Cure

| 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) <sup>1</sup>                                     | 300 (3000) <sup>1</sup>                                     | 60 (600) <sup>1</sup>                        | 10 (100) <sup>1</sup>                        |
| 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) <sup>2</sup>                         | 1.0 (145) <sup>2</sup>                    | 1.5 (220) <sup>2</sup>                          | 1.8 (260) <sup>2</sup>                                      | 2.0 (290) <sup>2</sup>                                      | 1.3 (190) <sup>2</sup>                       | 1.3 (190) <sup>2</sup>                       |
| Thermal Conductivity  | W/m·k                      | 0.59   | -   | 0.25  | 0.67  | 0.18  | 0.18   | 0.18   |
| Volume Resistivity  | MΩ·m                       | 1.0×10 <sup>7</sup>                            | 1.0×10 <sup>7</sup>                       | 1.0×10 <sup>7</sup>                             | 1.0×10 <sup>7</sup>   | 1.0×10 <sup>7</sup>   | 1.0×10 <sup>7</sup>                          | 1.0×10 <sup>7</sup>                          |
| 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 <sub>3</sub> -D <sub>10</sub> ) wt% |                            | -  | -   | -   | -   | -   | -  | -  |
| Flame Retardancy  |                            | UL94 V-0                                       |   | UL94 V-0  | UL94 V-1  |   |  |  |
| Low Volatility  |                            |  |   |   |   |   |  |  |
| Temperature Resistance  |                            |  | ●   |   |   | ●   |  |  |
| Thermally Conductive  |                            |  |   |   | ●   |   |  |  |
| FDA   |                            |  |   |   |   |   |  |  |
| Electro-Conductivity  |                            |  |   |   |   |   |  |  |
| MIL-Spec <sup>4</sup>   |                            |  |   |   |   |   |  |  |
| 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 liter) pail   |  |   |   |   |   |  |  |
|   | 55 gal. (208.2 liter) drum |  |   |   |   |   |  |  |
| See Page 32 for details                                       |                            |  |   |   |   | ●   | ●  |  |

<sup>1</sup>JIS K 6249 <sup>2</sup>AL-AL Lap Shear Adhesion <sup>3</sup>PBT Lap Shear Adhesion <sup>4</sup>Testing is performed in accordance with current GE - Advanced Materials quality test methods, laboratory conditions, procedures, frequency and sampling <sup>5</sup>MIL-A-46146 Group I Type I general purpose paste <sup>6</sup>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) <sup>1</sup>                               | -  | -                            | -   | -  | -   | -   | -  | -                        |
|  | -   | 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) <sup>2</sup>                              | -  | 1.3 (183) <sup>3</sup>       | -   | 1.4 (200) <sup>2</sup>   | 1.4 (200) <sup>2</sup>  | 1.0 (150) <sup>2</sup>                                | -  | 2.2 (320) <sup>2</sup>   |
|  | 0.18  | -  | -                            | -   | -  | -   | -   | -  | 0.18                     |
|  | 1.0x10 <sup>7</sup>                                 | -  | 7.5x10 <sup>6</sup>          | 1.1x10 <sup>7</sup>                             | 3.0x10 <sup>7</sup>  | 3.0x10 <sup>6</sup>   | -   | -  | 1.0x10 <sup>7</sup>      |
|  | 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 <sup>5</sup>   | MIL-A-46146 <sup>6</sup>  |   |  |                          |
|  | ○   |  |                              |   | 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) <sup>1</sup>  | 20 (200) <sup>1</sup>                               |
| 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) <sup>2</sup>   | 0.7 (100) <sup>2</sup>                              |
| Thermal Conductivity  | W/m-k                    | -   | -  | -   |
| Volume Resistivity  | MΩ-m                     | -   | 2.0x10 <sup>6</sup>  | 6.0x10 <sup>6</sup>                                 |
| Dielectric Strength   | kV/mm                    | -   | 16   | 16  |
| Dielectric Constant   | 60Hz                     | -   | 2.8  | 2.8   |
| Dissipation Factor  | 60Hz                     | -   | 0.001  | 0.001   |
| Low Molecular Siloxane (D <sub>3</sub> -D <sub>10</sub> ) wt% |                          | -   | -  | -   |
| Flame Retardancy  |                          |   |  |   |
| Low Volatility  |                          |   |  |   |
| Temperature Resistance  |                          |   | ●  |   |
| Thermally Conductive  |                          |   |  |   |
| FDA   |                          |   | ●  | ●   |
| Electro-Conductivity  |                          |   |  |   |
| MIL-Spec <sup>3</sup>   |                          |   |  | MIL-A-46146 <sup>4</sup>                            |
| 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

<sup>1</sup>ASTM D2196    <sup>2</sup>Al-Al Lap Shear Adhesion    <sup>3</sup>Testing is performed in accordance with current GE - Advanced Materials quality test methods, laboratory conditions, procedures, frequency and sampling.    <sup>4</sup>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) <sup>1</sup>  | -  | 280 (2800) <sup>1</sup>        | 110 (1100) <sup>1</sup>     | 80 (800) <sup>1</sup>                                  | 70 (700) <sup>1</sup>                       |                        |
| 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) <sup>2</sup>   | -                              | 2.6 (375) <sup>2</sup>      | 2.5 (365) <sup>2</sup>                                 | 1.8 (260) <sup>2</sup>                      | 2.5 (365) <sup>2</sup> |
| Thermal Conductivity    |                       | W/m·k                    | 0.20   | -                              | 0.29                        | 0.29   | 0.41  | 0.29                   |
| Volume Resistivity      |                       | MΩ·m                     | 1.0×10 <sup>7</sup>  | -                              | 2.0×10 <sup>7</sup>         | 2.0×10 <sup>7</sup>                                    | 2.0×10 <sup>7</sup>                         | 1.0×10 <sup>7</sup>    |
| 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             |                          |  |                                | ●                           |  |   |                        |

<sup>1</sup>JIS K 6249    <sup>2</sup>AL-AL Lap Shear Adhesion

Typical property data values should not be used as specifications

# Product Details - 1 Part Heat Cure Grades

Product Details: 1 Part Heat Cure

| Properties              |                          | TSE3280-G                              | TSE3281-G                              | TSE3221S                                      | TSE326   | TSE3260  | TSE3282-G                              | TSE326M <sup>4</sup>                          |                        |
|-------------------------|--------------------------|--|--|---|--|--|--|---|------------------------|
| 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 (23°C)        | Pa.s (P)                 | 60 (600) <sup>1</sup>                  | 60 (600) <sup>1</sup>                  | 58 (580) <sup>1</sup>                         | 28 (280) <sup>1</sup>  | 23 (230) <sup>1</sup>  | 20 (200) <sup>1</sup>                  | 16 (160) <sup>1</sup>                         |                        |
| 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) <sup>3</sup>                 | 2.5 (365) <sup>3</sup>                        | 2.5 (365) <sup>3</sup>                                       | 2.0 (290) <sup>3</sup>                                       | 0.5 (75) <sup>3</sup>                  | 2.5 (365) <sup>3</sup>                        | 1.5 (220) <sup>3</sup> |
| 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 <sup>6</sup>                    | 4.8×10 <sup>6</sup>                           | 6.0×10 <sup>7</sup>  | 2.0×10 <sup>7</sup>  | 1.0×10 <sup>7</sup>                    | 4.8×10 <sup>6</sup>                           | 2.0×10 <sup>7</sup>    |
| 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 |  |  |   |  |  |  |   |                        |

<sup>1</sup>JIS K 6249 <sup>2</sup>ASTM D2196 <sup>3</sup>AL-AL Lap Shear Adhesion <sup>4</sup>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) <sup>1</sup>                               | 8.5 (85) <sup>1</sup>     | 7.0 (70) <sup>1</sup>     | 4.0 (40) <sup>1</sup>               | 4.0 (40) <sup>1</sup>     | 3.5 (35) <sup>1</sup>               | 1.3 (13) <sup>1</sup>               | 0.25 (2.5) <sup>2</sup>   |
|  | 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) <sup>3</sup>                              | 0.4 (60) <sup>3</sup>     | 0.4 (60) <sup>3</sup>     | 0.4 (60) <sup>3</sup>               | 0.4 (60) <sup>3</sup>     | 0.4 (60) <sup>3</sup>               | 0.1 (15) <sup>3</sup>               | -   |
|  | 0.18  | 0.18                      | 0.18                      | 0.18                                | 0.17                      | 0.18                                | 0.17                                | -   |
|  | 7.0×10 <sup>7</sup>                                 | 2.0×10 <sup>7</sup>       | 2.0×10 <sup>7</sup>       | 2.0×10 <sup>7</sup>                 | 2.0×10 <sup>7</sup>       | 2.0×10 <sup>7</sup>                 | 2.0×10 <sup>7</sup>                 | -   |
|  | 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

Product Details: 2 Part Room Temp. Cure

| 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) <sup>2</sup>  |     | 880 (8800) <sup>2</sup>  |     | 47 (470) <sup>2</sup>   |         | 47 (470) <sup>2</sup>  |            | 43 (430) <sup>2</sup>                                     |     | 39 (390) <sup>2</sup> |  |
| 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) <sup>3</sup>                                    |     | -                     |  |
| Thermal Conductivity             |                          | W/m.k   |            | -   |     | 0.31   |     | 0.31   |     | 0.31  |         | 0.31   |            | 0.31  |     | 0.31                  |  |
| Volume Resistivity               |                          | MΩ.m  |            | -   |     | 5.6x10 <sup>6</sup>  |     | 2.8x10 <sup>6</sup>  |     | 4.4x10 <sup>6</sup>   |         | 4.4x10 <sup>6</sup>  |            | 2.0x10 <sup>6</sup>                                       |     | 1.6x10 <sup>6</sup>   |  |
| 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 <sup>4</sup>            |                          |   |            |   |     |  |     |  |     | MIL-S-23586E <sup>5</sup>   |         |  |            |   |     |                       |  |
| 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              |                          |   |            |   | ●   |  | ●   |  | ●   |   | ●       |  | ●          |   |     |                       |  |

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

<sup>7</sup>MIL-S-23586E Type I Class 1 Grade B1



# Product Details - 2 Part Room Temperature Cure Grades

Product Details: 2 Part Room Temp. Cure

| Properties                        |                       | TSE3663                         |             | TSE3664   |             | RTV12   |           |
|-----------------------------------|-----------------------|---------------------------------|-------------|---|-------------|---|-----------|
|                                   |                       | TSE3663 (A)                     | TSE3663 (B) | TSE3664 (A)   | TSE3664 (B) | RTV12 (A)   | RTV12 (C) |
| 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) <sup>1</sup>           |             | 3.0 (30) <sup>1</sup>   |             | 1.5 (15) <sup>2</sup>   |           |
| 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) <sup>3</sup>          |             | 1.0 (145) <sup>3</sup>  |             | -   |           |
| Thermal Conductivity W/m-k        |                       | 0.27                            |             | 0.42  |             | 0.17  |           |
| Volume Resistivity MΩ-m           |                       | 1.0x10 <sup>7</sup>             |             | 1.0x10 <sup>7</sup>   |             | 1.0x10 <sup>5</sup>   |           |
| 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

<sup>1</sup>JIS K 6249    <sup>2</sup>ASTM D2196    <sup>3</sup>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) <sup>1</sup>                                |             | -  |            | 440 (4400) <sup>1</sup>  |                | 65 (650) <sup>1</sup>  |             | 40 (400) <sup>1</sup>                             |             |
| 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) <sup>2</sup>  |            | 3.1 (450) <sup>2</sup>                                 |             | 3.1 (450) <sup>3</sup>   |            | 2.6 (375) <sup>2</sup>   |                | 2.0 (290) <sup>2</sup>                                       |             | 3.9 (565) <sup>2</sup>                            |             |
| Thermal Conductivity W/m.k        |                        | -  |            | 0.23   |             | -  |            | 0.63   |                | 0.63   |             | 0.29  |             |
| Volume Resistivity MΩ.m           |                        | 1.0x10 <sup>6</sup>  |            | 1.0x10 <sup>7</sup>                                    |             | 1.0x10 <sup>6</sup>  |            | 2.0x10 <sup>6</sup>  |                | 1.0x10 <sup>7</sup>  |             | 2.0x10 <sup>6</sup>                               |             |
| 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              |  |            |  |             |  |            |  |                | ● ●  |             |   |             |

<sup>1</sup>JIS K 6249      <sup>2</sup>AL-AL Lap Shear Adhesion

Typical property data values should not be used as specifications

<sup>3</sup>Steel Lap Shear Adhesion

# Product Details - 2 Part Heat Cure Grades

Product Details: 2 Part Heat Cure

| 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) <sup>1</sup>                |             | 6.2 (62) <sup>1</sup>  |             | 4.0 (40) <sup>2</sup>  |            | 4.0 (40) <sup>1</sup>   |             | 4.0 (40) <sup>1</sup>   |             | 4.0 (40) <sup>1</sup>   |               | 3.5 (35) <sup>1</sup>                                     |             |
| 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                |                       | 1.5 (220) <sup>3</sup>               |             | -  |             | -  |            | -   |             | -   |             | -   |               | 1.5 (220) <sup>3</sup>                                    |             |
| Thermal Conductivity             |                       | 1.68                                 |             | 1.0  |             | 0.19   |            | 0.17  |             | 0.63  |             | 0.63  |               | 0.63  |             |
| Volume Resistivity               |                       | 2.1x10 <sup>6</sup>                  |             | 2.5x10 <sup>6</sup>  |             | 1.8x10 <sup>7</sup>  |            | 2.0x10 <sup>7</sup>   |             | 5.0x10 <sup>6</sup>   |             | 5.0x10 <sup>6</sup>   |               | 2.0x10 <sup>6</sup>                                       |             |
| Dielectric Strength              |                       | 15                                   |             | 21   |             | 19.7   |            | 21  |             | 26  |             | 27  |               | 25  |             |
| Dielectric Constant              |                       | 5.7                                  |             | 4.7  |             | 2.89 (1kHz)  |            | 2.8   |             | 3.4   |             | 3.5   |               | 3.4   |             |
| Dissipation Factor               |                       | 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

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



| TSE3331  |             | TSE3331K <sup>4</sup>  |              | TSE3331K EX <sup>5</sup>   |                | 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) <sup>1</sup>  |             | 2.6 (26) <sup>1</sup>  |              | 3.0 (30) <sup>1</sup>  |                | 1.3 (13) <sup>2</sup>  |             | 1.3 (13) <sup>1</sup>   |                | 1.0 (10) <sup>1</sup>                                     |             | 1.0 (10) <sup>1</sup>  |            |
| 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) <sup>3</sup>   |             | 1.6 (230) <sup>3</sup>   |              | 1.6 (230) <sup>3</sup>   |                | -  |             | -   |                | 0.3 (44) <sup>3</sup>                                     |             | -  |            |
| 0.63   |             | 0.53   |              | 0.53   |                | 0.31   |             | 0.44  |                | 0.17  |             | 0.17   |            |
| 2.0x10 <sup>6</sup>  |             | 6.0x10 <sup>6</sup>  |              | 6.0x10 <sup>6</sup>  |                | 5.7x10 <sup>6</sup>  |             | 2.0x10 <sup>7</sup>   |                | 2.0x10 <sup>7</sup>                                       |             | 2.0x10 <sup>7</sup>  |            |
| 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) <sup>1</sup> | 0.7 (7) <sup>1</sup>          | 0.7 (7) <sup>1</sup>           | 0.7 (7) <sup>1</sup>         | 0.7 (7) <sup>1</sup>            |
| 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 <sup>3</sup> |              | 85                   | 85                            | 65                             | 35                           | 105                             |
| Thermal Conductivity     | W/m.k        | 0.17                 | 0.17                          | 0.17                           | 0.17                         | 0.17                            |
| Volume Resistivity       | MΩ-m         | 1.0×10 <sup>7</sup>  | 5.0×10 <sup>7</sup>           | 1.0×10 <sup>7</sup>            | 1.0×10 <sup>7</sup>          | 1.0×10 <sup>7</sup>             |
| 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) <sup>1</sup> |             | 7.0 (70) <sup>1</sup> |             | 1.0 (10) <sup>1</sup> |             | 0.85 (8.5) <sup>1</sup> |             | 0.8 (8) <sup>1</sup> |             | 0.75 (7.5) <sup>2</sup>          |             | 0.75 (7.5) <sup>2</sup>  |             |
| 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 <sup>3</sup>         |                    | 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               | 1.0×10 <sup>7</sup>   |             | 1.0×10 <sup>7</sup>   |             | 1.0×10 <sup>7</sup>   |             | 1.0×10 <sup>7</sup>     |             | 1.0×10 <sup>7</sup>  |             | 1.0×10 <sup>7</sup>              |             | 1.0×10 <sup>7</sup>      |             |
| 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              |                    |                       |             |                       |             |                       |             |                         |             |                      |             |                                  |             | ●                        |             |

<sup>1</sup>JIS K 6249 <sup>2</sup>ASTM D2196 <sup>3</sup>1/4" cone

Typical property data values should not be used as specifications



| RTV6156                     |             | RTV6186                          |             |
|-----------------------------|-------------|----------------------------------|-------------|
| RTV6156 (A)                 | RTV6156 (B) | RTV6186 (A)                      | RTV6186 (B) |
| Flowable                    |             | Flowable                         |             |
| Low temperature performance |             | High strength. Extended pot life |             |
| 100:100                     |             | 100:100                          |             |
| Transparent                 |             | Transparent                      |             |
| 0.75 (7.5) <sup>2</sup>     |             | 0.75 (7.5) <sup>2</sup>          |             |
| 1                           |             | 8                                |             |
| 100/1                       |             | 100/1                            |             |
| 0.98                        |             | 0.98                             |             |
| 40                          |             | 60                               |             |
| 0.19                        |             | 0.19                             |             |
| 1.0×10 <sup>7</sup>         |             | 1.0×10 <sup>7</sup>              |             |
| 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) <sup>1</sup>   | 4.5 (45) <sup>1</sup>     | 1.1 (11) <sup>1</sup>   | 110 (100) <sup>1</sup>  | 4 (40) <sup>1</sup>   |
| 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 <sup>2</sup>   | -   | -                         | -   | 40  | 80  |
| Thermal Conductivity W/m-k | 0.18  | 0.18                      | 0.17  | 0.17  | 0.18  |
| Volume Resistivity MΩ-m    | 1.0x10 <sup>7</sup>   | 1.0x10 <sup>7</sup>       | 1.0x10 <sup>7</sup>   | 5.0x10 <sup>7</sup>   | 1.0x10 <sup>7</sup>   |
| 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  |                           |   | ●   |   |

<sup>1</sup>JIS K 6249 <sup>2</sup>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) <sup>1</sup>   |                | 14 (140) <sup>1</sup>         |                | 17 (170) <sup>1</sup>  |             |
| 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 <sup>2</sup>          | -                       |                | -                             |                | 70   |             |
| Thermal Conductivity W/m-k        | 0.20                    |                | 0.18                          |                | 0.18   |             |
| Volume Resistivity MΩ-m           | 1.0x10 <sup>7</sup>     |                | 5.0x10 <sup>5</sup>           |                | 1.0x10 <sup>7</sup>  |             |
| 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

<sup>1</sup>JIS K 6249 <sup>2</sup>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 <sup>6</sup>  | 2.0x10 <sup>7</sup>  | 2.0x10 <sup>7</sup>  | 2.0x10 <sup>6</sup>  | 2.0x10 <sup>6</sup>  | 2.0x10 <sup>7</sup>  | 3.0x10 <sup>6</sup>   |
| 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 <sub>3</sub> -D <sub>10</sub> ) | -   | 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 Condensation Cure | <b>ECS0601</b>   | Black Clear White      | 1.5          | 105   | 105        | <b>HB</b>   | -         | -         |            |            |           | E56745   |
|                          | <b>IS802</b>     | White                  | 1.2 only     | 105   | 105        | <b>HB</b>   | 4         | 0         | 0          | 5          | 0         | E36952   |
|                          | <b>IS803</b>     | Black                  | 1.2 only     | 105   | 105        | <b>HB</b>   | 4         | 0         | 0          | 5          | 0         | E36952   |
|                          | <b>IS806</b>     | Red                    | 1.9 only     | 105   | 105        | <b>HB</b>   | -         | -         |            |            |           | E36952   |
|                          | <b>IS808</b>     | Translucent            | 1.2 only     | 105   | 105        | <b>HB</b>   | 4         | 0         | 0          | 5          | 0         | E36952   |
|                          | <b>IS800.09</b>  | Aluminum               | 1.5          | 105   | 105        | <b>HB</b>   | -         | -         |            |            |           | E36952   |
|                          | <b>RTV133</b>    | Black                  | 0.71         | 105   | 105        | <b>V-1</b>  | 3         | 0         | 0          | 3          | 0         | E36952   |
|                          | <b>RTV133</b>    | Black                  | 1.6          | 105   | 105        | <b>V-1</b>  | 2         | 0         |            |            |           | E36952   |
|                          | <b>RTV133</b>    | Black                  | 3.4          | 105   | 105        | <b>V-0</b>  | 1         | 0         |            |            |           | E36952   |
|                          | <b>RTV160</b>    | White                  | 0.75         | 105   | 105        | <b>HB</b>   | 4         | 0         | 1          | 5          | 0         | E36952   |
|                          | <b>RTV160</b>    | White                  | 1.5          | 105   | 105        | <b>HB</b>   | 3         | 0         |            |            |           | E36952   |
|                          | <b>RTV160</b>    | White                  | 2.5          | 105   | 105        | <b>HB</b>   | 3         | 0         |            |            |           | E36952   |
|                          | <b>RTV160</b>    | White                  | 3.0          | 105   | 105        | <b>HB</b>   | -         | -         |            |            |           | E36952   |
|                          | <b>RTV167</b>    | Gray                   | 0.83         | 105   | 105        | <b>HB</b>   | 3         | 0         | 0          | 5          | 0         | E36952   |
|                          | <b>RTV167</b>    | Gray                   | 1.5          | 105   | 105        | <b>HB</b>   | 2         | 0         |            |            |           | E36952   |
|                          | <b>RTV167</b>    | Gray                   | 2.6          | 105   | 105        | <b>HB</b>   | 2         | 0         |            |            |           | E36952   |
|                          | <b>TSE382</b>    | Clear White            | 0.75         | 105   | 105        | <b>HB</b>   | 4         | 0         | 0          | 4          | 0         | E56745   |
|                          | <b>TSE382</b>    | Clear White            | 1.5          | 105   | 105        | <b>HB</b>   | 3         | 0         |            |            |           | E56745   |
|                          | <b>TSE382</b>    | Clear White            | 1.9          | 150   | 140        | <b>HB</b>   | 3         | 0         |            |            |           | E56745   |
|                          | <b>TSE382</b>    | Clear White            | 3.0          | 150   | 140        | <b>HB</b>   | 3         | 0         |            |            |           | E56745   |
|                          | <b>TSE3840-G</b> | Gray                   | 0.75         | 105   | 105        | <b>V-0</b>  | -         | -         | 0          | 2          | 0         | E56745   |
|                          | <b>TSE3840-G</b> | Gray                   | 1.5          | 105   | 105        | <b>V-0</b>  | 0         | 0         |            |            |           | E56745   |
|                          | <b>TSE3840-G</b> | Gray                   | 3.0          | 105   | 105        | <b>V-0</b>  | 0         | 0         |            |            |           | E56745   |
|                          | <b>TSE3843-W</b> | White                  | 1.1          | 105   | 105        | <b>V-1</b>  | -         | -         | 0          | 1          | 1         | E56745   |
|                          | <b>TSE3843-W</b> | White                  | 1.5          | 105   | 105        | <b>V-1</b>  | 0         | 0         |            |            |           | E56745   |
|                          | <b>TSE3843-W</b> | White                  | 1.9          | 150   | 140        | <b>V-1</b>  | -         | -         |            |            |           | E56745   |
|                          | <b>TSE3843-W</b> | White                  | 2.5          | 150   | 140        | <b>V-1</b>  | -         | -         |            |            |           | E56745   |
|                          | <b>TSE3843-W</b> | White                  | 3.0          | 150   | 140        | <b>V-1</b>  | -         | -         |            |            |           | E56745   |
|                          | <b>TSE384-B</b>  | Black                  | 1.2          | 105   | 105        | <b>V-0</b>  | 0         | 0         | 0          | 3          | 1         | E56745   |
|                          | <b>TSE384-B</b>  | Black                  | 1.9          | 150   | 140        | <b>V-0</b>  | -         | -         |            |            |           | E56745   |
|                          | <b>TSE384-B</b>  | Black                  | 3.0          | 150   | 140        | <b>V-0</b>  | -         | -         |            |            |           | E56745   |
|                          | <b>TSE3853-W</b> | White                  | 1.5          | 105   | 105        | <b>V-0</b>  | 0         | 3         | 0          | 3          | 0         | E56745   |
|                          | <b>TSE3853-W</b> | White                  | 3.0          | 105   | 105        | <b>V-0</b>  | 0         | 3         |            |            |           | E56745   |
|                          | <b>TSE3854D</b>  | Gray                   | 0.75         | 105   | 105        | <b>V-0</b>  | 0         | 0         | 0          | 3          | 0         | E56745   |
|                          | <b>TSE3854D</b>  | Gray                   | 1.5          | 105   | 105        | <b>V-0</b>  | 0         | 0         |            |            |           | E56745   |
|                          | <b>TSE3854D</b>  | Gray                   | 3.0          | 105   | 105        | <b>V-0</b>  | 0         | 0         |            |            |           | E56745   |
|                          | <b>TSE3854D</b>  | White                  | 1.5          | 105   | 105        | <b>V-0</b>  | 0         | 3         | 0          | 3          | 0         | E56745   |
|                          | <b>TSE3854D</b>  | White                  | 3.0          | 105   | 105        | <b>V-0</b>  | 0         | 3         |            |            |           | E56745   |
|                          | <b>TSE389</b>    | Clear White Black      | 1.5          | 105   | 105        | <b>HB</b>   | -         | -         |            |            |           | E56745   |
|                          | <b>TSE389</b>    | Clear White Black      | 3.0          | 105   | 105        | <b>HB</b>   | -         | -         |            |            |           | E56745   |
|                          | <b>TSE392</b>    | Black Clear White Gray | 1.5          | 105   | 105        | <b>HB</b>   | -         | -         |            |            |           | E56745   |
|                          | <b>TSE392</b>    | Black Clear White Gray | 3.0          | 105   | 105        | <b>HB</b>   | -         | -         |            |            |           | E56745   |
|                          | <b>TSE3940</b>   | Gray                   | 0.75         | 105   | 105        | <b>V-1</b>  | -         | -         | 0          | 4          | 0         | E56745   |
|                          | <b>TSE3940</b>   | Gray                   | 1.5          | 105   | 105        | <b>V-0</b>  | 2         | 0         |            |            |           | E56745   |
|                          | <b>TSE3940</b>   | Gray                   | 3.0          | 105   | 105        | <b>V-0</b>  | 2         | 0         |            |            |           | E56745   |
| <b>TSE3941</b>           | White            | 0.75                   | 105          | 105   | <b>V-1</b> | -           | -         | 0         | 3          | 0          | E56745    |          |
| <b>TSE3941</b>           | White            | 1.5                    | 105          | 105   | <b>V-1</b> | 2           | 0         |           |            |            | E56745    |          |
| <b>TSE3941</b>           | White            | 3.0                    | 105          | 105   | <b>V-0</b> | 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<br>Condensation 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<br>Heat Cure | TSE3051-FR        | Clear        | 2.7-3.3 | 105       | 105         | V-1       | -         | -          |            |           |          |
| 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    |          |

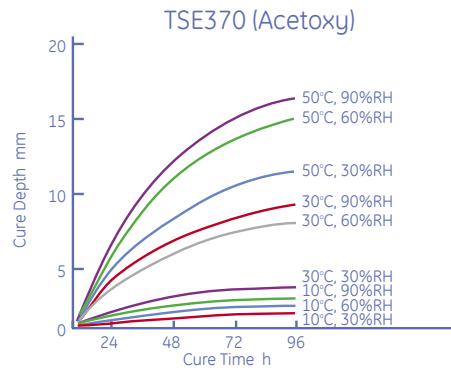
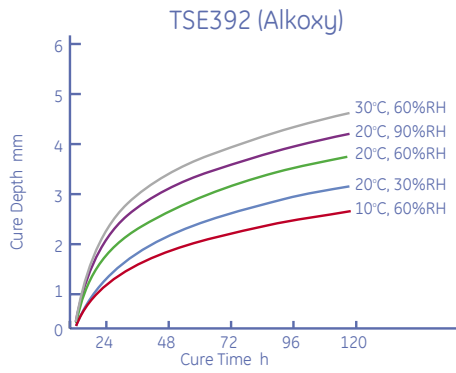
| HWI  |                          | HAI   |                  | HVTR  |                        | D495  |                      | CTI  |                        |
|--|--------------------------|---|------------------|---|------------------------|---|----------------------|--|------------------------|
| Resistance 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) | 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 | 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) | 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) | 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                      |   | PLC              |   | PLC                    |   | PLC                  |  | PLC                    |
|  | ≥ 120                    | 0   | ≥ 120            | 0 - 10  | 0                      | ≥ 420   | 0                    | ≥ 600  | 0                      |
|  | 60 - 119                 | 1   | 60 - 119         | 10.1 - 25.4   | 1                      | 360 - 419   | 1                    | 400 - 599  | 1                      |
|  | 30 - 59                  | 2   | 30 - 59          | 25.5 - 80   | 2                      | 300 - 359   | 2                    | 250 - 399  | 2                      |
|  | 15 - 29                  | 3   | 15 - 29          | 80.1 - 150  | 3                      | 240 - 299   | 3                    | 175 - 249  | 3                      |
|  | 7 - 14                   | 4   | < 15             | > 150   | 4                      | 180 - 239   | 4                    | 100 - 174  | 4                      |
|  | < 7                      | 5   |                  |   |                        | 120 - 179   | 5                    | < 100  | 5                      |
|  |                          |   |                  |   |                        | 60 - 119  | 6                    |  |                        |
|  |                          |   |                  |   |                        | < 60  | 7                    |  |                        |



# Cure Properties

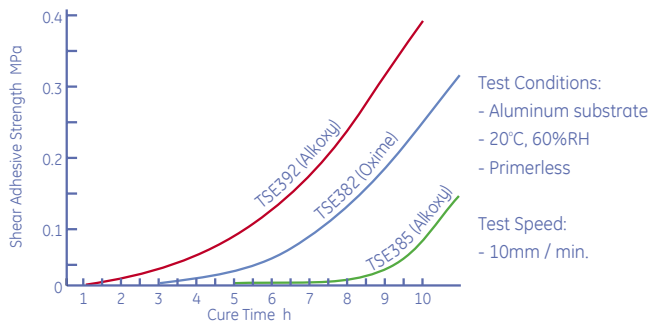
## Condensation Cure Grades

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.



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

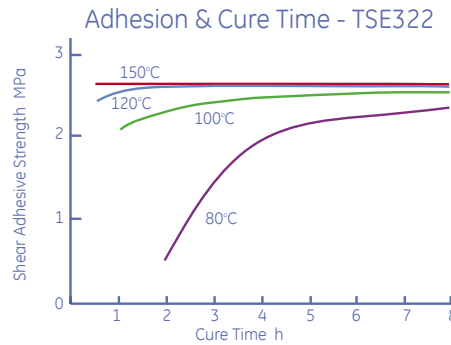
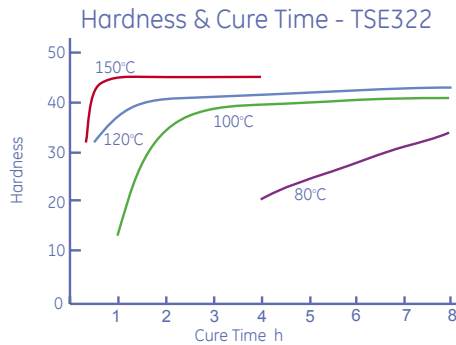
## Manifestation of Adhesion



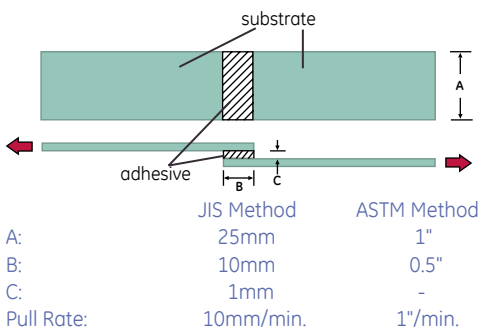
Adhesion is typically achieved after 5-15 hours. Full material properties including electronic performance, is achieved in up to 7 days.

## 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.



## Shear Adhesion Test Method



# 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                    | ●               | ●     |                |                  | ● <sup>1</sup> | ● <sup>1</sup> |                | ▲ <sup>1</sup> | ● <sup>1</sup> |       |                     |
|                         | Steel                     | ●               | ●     |                |                  | ▲              | ●              |                | ●              | ●              |       |                     |
|                         | Brass                     | ●               | ●     |                |                  | ▲ <sup>1</sup> | ▲ <sup>1</sup> |                | ▲ <sup>1</sup> | ● <sup>1</sup> |       |                     |
|                         | Stainless Steel           | ●               | ●     |                |                  | ▲              | ●              |                | ▲              | ●              |       |                     |
|                         | Aluminum                  | ●               | ●     |                |                  | ●              | ●              |                | ●              | ●              |       |                     |
|                         | Galvanized Steel          | ●               | ●     |                |                  |                | ●              |                | ●              | ●              |       |                     |
|                         | Tin                       | ●               | ●     |                |                  | ●              | ●              |                | ●              | ●              |       |                     |
| Plastic                 | Acrylic Resin             | ●               |       | ●              |                  | ×              |                | ●              | ●              | ●              |       |                     |
|                         | Phenol Resin              | ●               |       | ●              |                  | ●              |                | ●              | ●              | ●              |       |                     |
|                         | Epoxy Resin               | ●               |       | ●              |                  | ●              |                | ●              | ●              | ●              |       |                     |
|                         | Polycarbonate             | ● <sup>2</sup>  |       | ● <sup>2</sup> |                  |                |                |                | ● <sup>2</sup> | ● <sup>2</sup> |       |                     |
|                         | Soft Polyvinyl Chloride   | ●               |       | ●              |                  | ×              |                | ●              | ×              | ×              | ●     |                     |
|                         | Rigid Polyvinyl Chloride  | ●               |       | ●              |                  | ●              |                | ●              | ●              | ●              | ●     |                     |
|                         | Polyester Film            | ●               |       | ●              |                  | ▲              |                | ●              | ●              | ●              | ●     |                     |
|                         | Unsaturated Polyester     | ●               |       | ●              |                  | ●              |                | ●              | ●              | ●              | ●     |                     |
|                         | Polyamide                 | ●               |       | ●              |                  | ●              |                | ●              | ●              | ●              | ●     |                     |
|                         | Nylon 66                  | ●               |       | ●              |                  |                |                |                | ●              |                | ●     | ● <sup>3</sup>      |
|                         | PBT                       | ●               |       | ●              |                  |                |                |                | ▲              |                | ●     |                     |
|                         | PPS                       | ●               |       | ●              |                  |                |                |                | ▲              |                | ●     | ● <sup>3</sup>      |
|                         | ABS                       | ●               |       | ●              |                  | ●              |                | ●              | ●              | ●              | ●     |                     |
|                         | Polypropylene             | ×               |       | ×              | ●                |                |                |                | ×              | ×              | ×     | ● <sup>4</sup>      |
|                         | 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

<sup>1</sup> May corrode under some usage conditions, <sup>2</sup> Stress cracking may occur under some usage conditions, <sup>3</sup> YP9341, <sup>4</sup> XP80-A5363

## Heat Cure Grades

| TSE322    |                 |          |
|-----------|-----------------|----------|
| Substrate |                 | Adhesion |
| Metals    | Aluminum        | ●        |
|           | Copper          | ●        |
|           | Brass           | ●        |
|           | Stainless Steel | ●        |
|           | Nickel Plate    | ●        |
| Plastic   | PPS             | ●        |
|           | PBT             | ●        |
|           | Epoxy Resin     | ●        |
| Inorganic | Polyester       | ●        |
|           | 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 Temperature 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 then 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.



12-page brochure providing opto-electronic solutions for LED Packages and Assemblies. Includes InvisiSil\* LED encapsulants, Glob Top, Lens fabrication materials, Die Attach adhesives, and Dot Matrix assembly materials.

# Principal Locations

[www.ge.com/advancedmaterials](http://www.ge.com/advancedmaterials)

| Regional Information  | Phone  | Fax / E-mail   |
|---|--|--|
| <b>North America</b><br>World Headquarters<br>187 Danbury Road<br>Wilton, CT 06897, USA   | 800.295.2392   | 607.754.7517   |
| <b>Latin America</b><br>Rodovia Eng. Constância Cintra, Km 78,5<br>Itatiba, SP - 13255-700<br>Brazil  | +55.11.4534.9650   | +55.11.4534.9660   |
| <b>Europe, Middle East, Africa and India</b><br>GE Bayer Silicones GmbH & Co. KG<br>Leverkusen<br>Germany   | 00.800.4321.1000   | E-mail: <a href="mailto:ebusiness1.gebs@ge.com">ebusiness1.gebs@ge.com</a>   |
| <b>Pacific</b><br>GE Toshiba Silicones Co., Ltd.<br>6-2-31 Roppongi<br>Minato-Ku<br>Tokyo 106-8550 Japan  | +81.3.3479.5361  | +81.3.3479.5391  |
| <b>Customer Service Centers</b>   |  |  |
| <b>North America</b><br>South Charleston, WV 25303, USA<br>E-mail: <a href="mailto:cs-na.osi@ge.com">cs-na.osi@ge.com</a>   | <b>Specialty Fluids</b><br>800.523.5862  | 304.746.1654   |
|   | <b>UA, Silanes, Resins, and Specialites</b><br>800.334.4674                    | 304.746.1623   |
|   | <b>RTV Products - Elastomers</b><br>800.332.3390                               | 304.746.1623   |
|   | <b>Sealants and Adhesives<br/>and Construction</b><br>877.943.7325             | 304.746.1654   |
| <b>Canada</b><br>St-Eustache, Quebec  | Within U.S. & Canada<br>Outside U.S. & Canada<br>800.363.0496<br>+450.974.0899 | +450.974.0380  |
| <b>Latin America</b><br>Argentina and Chile<br>Brazil<br>Mexico and Central America<br>Venezuela, Ecuador, Peru, Colombia and Caribbean<br>E-mail: <a href="mailto:csla.gesosi@ge.com">csla.gesosi@ge.com</a> | +54.23.2055.2857<br>+55.11.4534.9650<br>+52.55.5257.6042<br>+58.21.2902.5167   | +54.23.2055.2811<br>+54.11.4534.9660<br>+52.55.5257.6094<br>+58.21.2902.5158   |
| <b>Europe, Middle East, Africa and India</b><br>GE Bayer Silicones GmbH & Co. KG<br>GE Specialty Materials (Suisse) Sàrl  | 00.800.4321.1000<br>00.800.4321.1000   | E-mail: <a href="mailto:ebusiness1.gebs@ge.com">ebusiness1.gebs@ge.com</a><br>E-mail: <a href="mailto:cs-eur.osi@ge.com">cs-eur.osi@ge.com</a> |
| <b>Pacific</b><br>Japan<br>China<br>Korea<br>Singapore  | +81.276.20.6182<br>+86.800.820.0202<br>+82.2.530.6400<br>+65.6220.7022         | E-mail: <a href="mailto:helpdesk@getos.co.jp">helpdesk@getos.co.jp</a>   |
| <b>Worldwide Hotline</b>  | <b>800.295.2392</b>  | <b>+607.754.7517</b>   |

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