

# ShinEtsu

## Shin-Etsu Silicone

# KE 347 & KE 348 RTV Silicones

## One-component, Non-corrosive, Adhesive/Sealants

### PRODUCT DESCRIPTION

- One-component products
- Patented crosslinking system
- Non-corrosive
- Low odor
- Five minute tack free time
- Flowable or thixotropic

Shin-Etsu KE 347 and KE 348 RTV silicones are excellent general purpose, non-corrosive adhesive/sealants developed for applications in consumer electronics, transportation, and aerospace. Utilizing a patented crosslinking system, KE 347 and KE 348 offer a fast curing alternative to other electronic grade silicones RTVs. In electronics applications, KE 347 is an excellent conformal coating while KE 348 is best suited as a blob top encapsulant.

KE 347 RTV is a medium viscosity flowable liquid ideal for flow coating applications.

Lower viscosity versions of KE 347 are also available. KE 348 RTV adhesive/sealant is a non-sag thixotropic paste that may be applied overhead or on sidewall joints and surfaces.

Both KE 347 and KE 348 adhesive/sealants are available in translucent or white and each cure to a tough, flexible silicone elastomer upon exposure to atmospheric moisture at room temperature. Both materials will exhibit excellent adhesion to many substrates, including glass, wood, ceramics, clean metals, other silicone elastomers, and plastics like ABS, polycarbonate, and PVC.

### APPLICATIONS

- Conformal coating for printed circuit assemblies and electronic components.
- Encapsulating small circuits and connectors.
- Provide shock isolation for sensitive components
- Protect, seal and insulate corrosion-sensitive electrical/electronic equipment and appliances.

# KE 347 & KE 348 RTV Silicones

## DIRECTIONS FOR USE

### Surface Preparations

Prior to potting all surfaces should be thoroughly cleaned with an environmentally suitable solvent to remove dirt, oil, and grease. The surface should be allowed to dry before applying a primer or the elastomer.

When solvents are used, proper safety precautions must be observed. All solvents should be considered toxic and should be used only in well ventilated areas. Exposure to high vapor concentration must be avoided. When flammable solvents are used, they should be stored, mixed, and applied in areas void of heat, sparks, open flames or other sources of ignition.

### Application

Shin-Etsu KE 347 and KE 348 RTV silicones may be applied by brushing, dipping, spraying or flow coating. When applying as conformal coating, slowly immerse the circuit board or assembly into a silicone-filled dip tank. It will be necessary to blanket the tank with dry nitrogen or some other inert gas to prevent skinning. Be careful to avoid air entrapment and the creation of air bubbles. Slowly withdraw the board or assembly and allow the excess silicone to drain back into the dip tank. Position the parts being dipped with sharp points down during curing for best point coverage.

To apply by spraying, it will be necessary to decrease the viscosity of Shin-Etsu KE 347 and KE 348 RTV silicones by cutting with a solvent. Any solvent of suitable volatility may be used provided it is moisture free.

*Warning: When using solvents, be certain there is adequate ventilation. Follow all precautions provided on solvent containers.*

Shin-Etsu KE 347 and KE 348 RTV silicones may be applied directly from collapsible squeeze tubes when coating localized areas on circuit boards or components.

### Curing

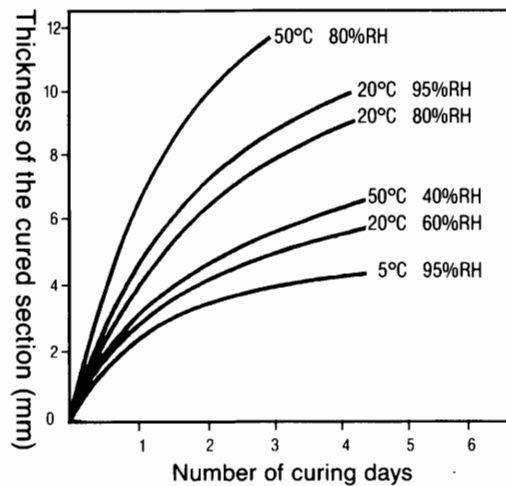
One component RTV rubbers cure once in contact with atmospheric moisture. Cure time therefore varies according to rubber thickness, cure temperature, and relative humidity.

KE 347 and KE 348 RTVs utilize an acetone crosslinker, a chemistry patented by Shin-Etsu Silicones. This crosslinking system results in faster tack-free times, a quicker ultimate cure, and better adhesion than other electronic grade silicone RTVs.

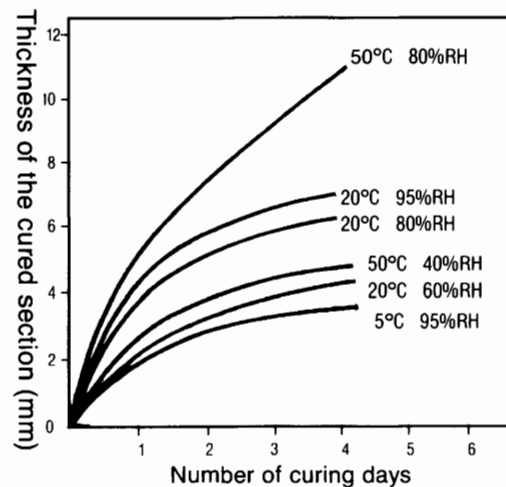
When left at 25°C and 50%RH, KE 347 and KE 348 RTVs will become tack free in 3-5 minutes. Optimum adhesion will develop over the next 24 to 72 hours. Cure starts from the surface and the thicker the rubber, the longer the cure time needed.

The relationship between the cure speed of the RTV and cure temperature and humidity is shown below.

### KE 347



### KE 348



Relationship between curing speed and temperature/humidity

## **Electronic Use**

KE 347 and KE 348 RTVs are ideal for electronics applications because of their non-corrosive crosslinking system. Acetone is liberated during the cure of these products and as such will not harm sensitive components or lead path.

## **Clean Up and Removal**

Before curing, use the same environmentally suitable solvent used to clean the substrate. After cure, selected chemical strippers which will remove the silicone rubber are available from other manufacturers. Specific product information may be obtained upon request.

## **Handling and Safety**

These products are manufactured and sold for industrial use only.

Uncured product contact irritates eyes. In case of contact with eyes, immediately flush eyes with water for 15 minutes. If irritation persists, get medical attention. Wearers of contact lenses should not handle lenses until all sealant has been cleaned from the fingertips; sealant will transfer to lenses and cause severe eye irritation. To clean from the skin, wipe very thoroughly with a dry cloth or paper towel before washing with soap and water.

Material Safety Data Sheets are available upon request from Shin-Etsu Silicones of America, Inc. Similar information for solvents and other chemicals used with our products may be obtained from your suppliers.

## **Storage**

When stored in the original unopened containers in a dry location at temperatures less than 80°F (27°C), KE 347 and KE 348 RTV silicones offer a shelf life of up to six months from date of shipment.

To prevent curing of the unused portion of an opened container, purge with Nitrogen and reseal tightly.

## **SPECIFICATIONS**

The information and data contained herein are believed to be accurate and reliable; however, it is the user's responsibility to determine suitability of use. Since Shin-Etsu Silicones cannot know all of the uses to which its products may be put or the conditions of use, it makes no warranties concerning the fitness or suitability of its products for a particular use or purpose.

You should thoroughly test any proposed use of our products and independently conclude satisfactory performance in your application. Likewise, if the manner in which our products are used requires governmental approval or clearance, you must obtain it.

Shin-Etsu Silicones warrants only that its products will meet its specifications. There is no warranty of merchantability of fitness for use, nor any other expressed or implied warranties. The user's exclusive remedy and Shin-Etsu Silicones' sole liability is limited to refund of the purchase price or replacement of any product shown to be otherwise than as warranted. Shin-Etsu Silicones will not be liable for incidental or consequential damages of any kind.

Suggestions of uses should not be taken as inducements to infringe any patents.

# KE 347 & KE 348 RTV Silicones

## TYPICAL PROPERTIES

These values are not intended for use in preparing specifications

		KE 347	KE 348
<b>Uncured Properties</b>	Color	White/Translucent	White/Translucent
	Viscosity, cps	50,000	Thixotropic
	Specific Gravity	1.05	1.05
<b>Cured Properties (7 days/20°C and 55% RH)</b>	Hardness, Shore-A	30	30
	Tensile Strength, (1b/in <sup>2</sup> )	285	355
	Elongation, %	300	410
	Shear Strength, Al-Al (1b/in <sup>2</sup> ) <sup>(1)</sup>	115	130
<b>Electrical Properties</b>	Dielectric Strength, volts/mil	500	500
	Dielectric Constant, 60 Hz	2.5	2.5
	Dissipation Factor, 60 Hz	.001	.001
	Volume Resistivity, ohm-cm	1 x 10 <sup>15</sup>	1 x 10 <sup>15</sup>

(1) at 100% cohesive failure

## AVAILABILITY

Shin-Etsu silicones are available from Shin-Etsu Silicones of America, Inc. or from its authorized silicone products distributors. For the name of your nearest distributor or for more information on these products contact:

# Shin-Etsu

Shin-Etsu Silicones of America, Inc.  
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