

KE 3497 RTV Silicone

One-component, MIL-A-46146 certified, Flowable, Non-corrosive coating

PRODUCT DESCRIPTION

- One-component product
- Self-leveling
- Patented crosslinking system
- Non-corrosive
- Low odor
- Translucent or white
- UL 94HB rated

Shin-Etsu KE 3497 RTV silicone is a high strength silicone developed for coating/sealant applications in the aerospace and electronics industries. Utilizing a patented crosslinking system, KE 3497 offers a fast curing alternative to other electronic grade silicone coatings. In addition, rigorous processing of the base polymer for KE 3497 ensures minimal volatilization of low molecular weight silicone

constituents after cure and subsequent exposure to high temperatures.

KE 3497 meets the requirements of MIL-A-46146A Type 2 or MIL-A-46146 B Grade 1, Class 2. Its low viscosity makes KE 3497 an ideal conformal coating where flow coating is the preferred application method.

KE 3497 coating is available either translucent or white and will cure to a tough, flexible silicone elastomer upon exposure to atmospheric moisture at room temperature. KE 3497 should exhibit excellent adhesion to many substrates, including glass, wood, ceramics, clean metals, other silicone elastomers and plastics like ABS and PVC.

APPLICATIONS

- Circuit board coating
- Cushion coat for sensitive electronics
- Strain relief for high profile components
- Blob top on circuit boards
- Connector backfill
- Bond and seal electrical/electronic equipment and appliances

KE 3497 RTV Silicone

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 3497 RTV silicone 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 may be necessary to decrease the viscosity of Shin-Etsu KE 3497 RTV silicone 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 3497 RTV silicone may be applied directly from collapsible squeeze tubes when coating localized areas on circuit boards or components.

Curing

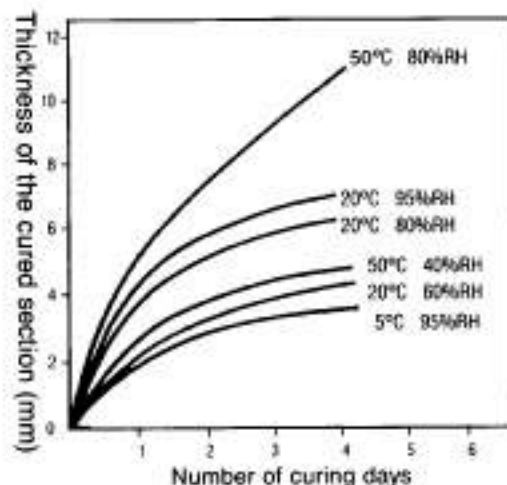
One component RTV rubbers cure once in contact with atmospheric moisture. Cure time therefore varies according to rubber thickness, cure temperature, and relative humidity.

KE 3497 RTV utilizes 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 3497 RTV will become tack free in 15 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 3497



Relationship between curing speed and temperature/humidity

Electronics Use

KE 3497 RTV is ideal for electronics applications because of its non-corrosive crosslinking system and because of its low volatility at high temperatures. Acetone is liberated during the cure of this product and as such will not harm sensitive components or lead paths. A typical silicone polymer contains unreacted polymer precursors (Dn) that, if left in the compounded RTV formulation, will volatilize at high temperatures even when the elastomer is fully cured. KE 3497 RTV undergoes additional processing during its manufacture to minimize all low molecular weight silicone that might normally be present.

UL Status

KE 3497T is recognized by UL to have a flammability rating of 94HB and an electrical/mechanical rating at 150°C. The UL file number is E48923(S).

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 3497 RTV silicone offers 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 dry nitrogen and reseal tightly.

TYPICAL PROPERTIES KE 3497 RTV SILICONE

Uncured Properties	
Color	Translucent
Viscosity, (cps)	35,000
Specific gravity	1.07
Tack free time, (min.)	15-20
Cured Properties⁽¹⁾	
Hardness, Shore-A	30
Tensile Strength, kg/cm ² (lb/in ²)	430
Elongation, (%)	300
Shear Strength, AL-AL (lb/in ²) ⁽²⁾	115
Electrical Properties	
Dielectric Strength, (v/mil)	500
Dielectric Constant, @ 60 Hz	2.5
Dissipation Factor, @ 60 Hz	.001
Volume Resistivity, (ohm-cm)	1 x 10 ¹⁵
Low Volatile Silicone (Dn), %	< 0.1

(1) Cure time 7 days/77°F (25°C)/50% RH

(2) at 100% cohesive failure

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.

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:

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