

KE 40 & KE 402 RTV Silicones

One-component, Non-flammable, Neutral curing Adhesive/Sealants

PRODUCT DESCRIPTION

- UL 94V-0 rating
- Low corrosion
- Low odor
- Excellent adhesion to many substrates
- Excellent heat and flame resistance
- Flowable or thixotropic

Shin-Etsu KE 40 and KE 402 silicones are UL-94V-0 rated, neutral curing, adhesive/sealants developed for applications in consumer electronics, transportation, and aerospace where outstanding flame resistance is required. KE 40 Gray meets the requirements of AMS 3374 as a firewall sealant.

KE 40 RTV adhesive/sealant is a non-sag, thixotropic material that may be applied overhead or on sidewall joints and surfaces. KE 402 RTV adhesive /sealant is self-leveling, medium viscosity material that is ideal for many potting, coating, and sealing applications.

KE 40 and KE 402 RTVs each cure to a tough, flexible silicone rubber elastomer upon exposure to atmospheric moisture at room temperature. These adhesive/sealants exhibit excellent adhesion to many substrates, including glass, wood, ceramics, clean metals, epoxy composites, other silicone elastomers and plastics like ABS, polycarbonate, and PVC.

APPLICATIONS

- Aircraft firewall sealant
- Consumer electronics bonding and sealing
- Bonding anode caps on CRTs
- Neck seal on CRTs
- Form-in-place-gasketing
- Potting high voltage transformers
- Connector back-fill

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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.

Priming

Both KE 40 and KE 402 will bond to many clean surfaces without the aid of a primer. It is easy, however, to improve the bonding of these materials by using a primer. Please consult the Shin-Etsu Silicones primer data sheet for the proper primer selection for your substrate.

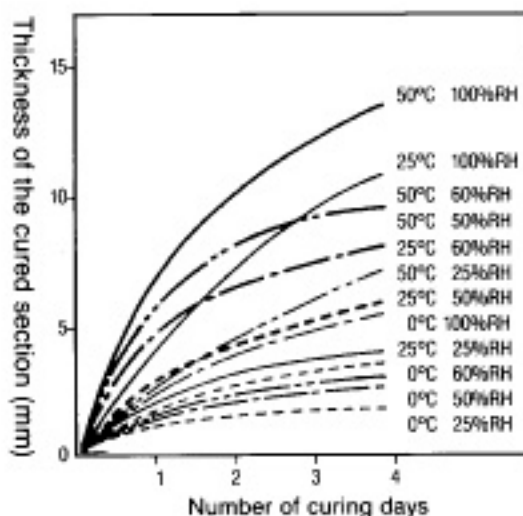
Curing

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

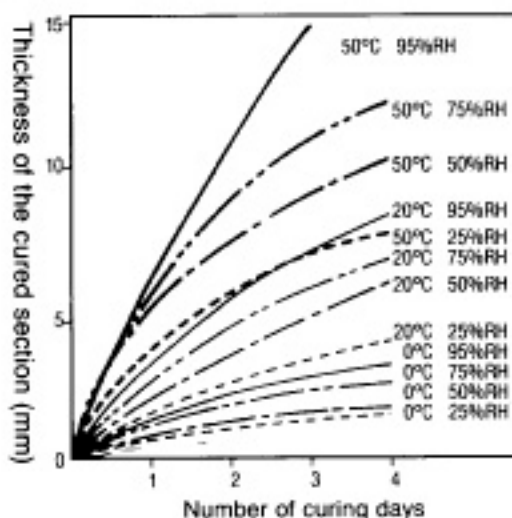
KE 40 and KE 402 RTVs utilize an oxime crosslinker, a chemistry that cures with little odor and little effect on most surfaces (These products may discolor copper). When left at 25°C and 50% RH, KE 40 and KE 402 RTVs will become tack free within 15 minutes. Optimum adhesion will develop over the next 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 402



KE 40



Relationship between curing speed and temperature/humidity

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.

Clean Up and Removal

Before cure, 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.

Flammability

Underwriters' Laboratories Inc. Standard 94 describes a vertical burning test to be performed under laboratory conditions. In this test thin rectangular specimens are placed in the flame from a laboratory burner, and the ability or inability of the substance to sustain a flame over a specified period of time upon removal of the source of the flame is determined.

The above tests, claims, representations and descriptions regarding the flammability of the products described are based on standard small scale laboratory tests and as such are not reliable for determining, evaluating, predicting or describing the flammability or burning characteristics of these products under actual fire conditions, whether these products are used alone or in combination with other products.

UL Status

KE 40 and KE 402 RTV silicones are flame class rated 94V-0 by Underwriters' Laboratories, Inc. at thickness down to 0.79 mm. A current yellow card is maintained under file No. E48923 and a copy is available upon request.

Storage

When stored in the original unopened containers in a dry location at temperatures less than 80°F (27°C), KE 40 and KE 402 RTV silicones offers a shelf life of up to six months from date of shipment.

To prevent curing of the unused portion of an opened container, 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.

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TYPICAL PROPERTIES

These values are not intended for use in preparing specifications

		KE 40	KE 402
Uncured Properties	Appearance	Thixotropic paste	Flowable liquid
	Specific Gravity, 25°C	1.58	1.60
	Tack Free Time, minutes	12	15
	Viscosity, cps at 25°C	—	30,000
	Color	White or Gray	White
Cured Properties (7 days/20°C and 55% RH)	Hardness, Shore-A	60	55
	Tensile Strength, psi	425	330
	Elongation, %	200	180
	Lap Shear, Al-Al, psi	215	115
Electrical Properties	Volume Resistivity, ohm-cm	1×10^{15}	1×10^{15}
	Dielectric Strength, KV/mm	25	23
	Dielectric Constant, 60 Hz	3.5	3.5
	Dissipation Factor, 60 Hz	0.01	0.01
Flame Class (UL-94)	0.79 mm	V-0	V-0
	1.57 mm	V-0	V-0
	3.17 mm	V-0	V-0

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

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