

FAQ's

What does RTV mean?

RTV stands for Room Temperature Vulcanization. RTV silicones are products that cure (vulcanize) at room temperature although some need higher temperatures to cure. RTV silicones are thermoset products.

What does thermoset mean?

Thermoset relates to products that cannot be transformed to their original form once cured. Once RTV silicones have cured (or vulcanized), they can not be transformed back into a paste to be recast.

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 most exposed area of the product to air, to the least exposed area, thus time is required for complete cure. The cure time is affected by the reaction mechanism and viscosity of the material. Generally, at 25°C and 50%RH, condensation cure RTV silicones cure through in 24 to 48 hours. Full physical properties may take 7 to 14 days to develop (refer to product literature for specific cure rates).

What are the byproducts for condensation cure RTV's?

For one-part condensation cure RTV's, the byproducts are: acetic acid (acetoxo cure RTV's), alcohol (alkoxy cure RTV's) and methanol and/or ammonia (methoxy cure RTV's). For two-part condensation cure RTV's, the byproducts are alcohol and water. Because condensation cure RTV's release byproducts during the cure process, it is recommended to cure the RTV in an open system to permit the byproduct to escape. This will enable the full properties of the material to develop and will reduce or eliminate any stability issues due to reversion.

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

For one-part, condensation cure RTV's, the depth (bead thickness) limitation is 1/4 inch. For two-part, condensation cure RTV's, the depth (bead thickness) limitation is 1 inch unless RTV9811 or STO is used in place of DBT.

Can I accelerate the cure time of a one-part RTV silicone?

Condensation cure RTV silicone product 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 50°C) 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 products cure when exposed to heat. Although some heat cure products can cure at room temperature, higher heat greatly accelerates the cure. One-part heat cure products typically have an inhibitor in the formulation which prevents the product from curing until an activation temperature, greater than room temperature, is achieved. The inhibitor is subsequently driven off and the cure reaction is allowed to proceed. Heat cure products do not liberate by-products during cure.

What are the byproducts for addition cure RTV's?

Addition cure RTV's do not give off a byproduct.

What do "pot life" and "work life" mean?

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

What does "tack free time" mean?

Tack free time refers to the amount of time it takes for a condensation cure RTV silicone product to form a cured outer layer (the cured outer layer is not tacky like uncured material). Condensation cure products generally cure from the outside (or exposed surface(s)) inward because of the need for moisture in the air for the curing reaction. Tack free time is not applicable to addition cure RTV materials.

What does thixotropic mean?

Thixotropy is the property that allows a paste-like material to flow under pressure or agitation (i.e. allows a paste to be dispensed from a caulk gun). Basically, a thixotropic material thins (reduces in viscosity) when shear forces are applied to it and then thickens again when the shear forces are removed.

What does "flowable" (also called self-leveling) mean?

Flowable describes a material whose top surface when dispensed will self level. Typical RTV materials that are flowable will have the consistency of ketchup and some will even flow like honey.

What is mix ratio and where is the mix ratio found?

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

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.