Silicone Encapsulating & Potting Formulations

Used extensively for protecting sensitive electronic components from extreme environments. Withstand temperatures from -45°C to +300°C while protecting the components from vibration, moisture, and atmospheric contamination. These products consists of both tin and platinum curing systems in a variety of durometers and cure speeds.

Products

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See also other products that can be used for encapsulating/potting applications; US-VSD-3000, US-VSD-12180, US-VSD-15180, US-VSD-18180, US-VSD-18240, US-VSD-15183, US-SPG-18417		

US-POT-54 (Identical to US-POT-57 except color)

US-POT-54 is a fast curing silicone RTV adhesives developed for applications requiring fast deep section cures as well as excellent adhesion. This is a two part, 1:1 mix ratio silicones that when mixed and applied to the substrate allows handling within minutes. When cured, the elastomer resists weathering, ozone, moisture, UV and high temperatures. US-POT-54 works well in static mix dispensing equipment.

Product Features

- Self-leveling
- Fast deep section cure
- Neutral cure
- Convenient 1:1 mix ratio
- Temperature range -45°C to 260°C
- Excellent unprimed adhesion to most plastics, metal and glass

Product Applications

- Adhesive encapsulation
- Assembly line adhesive
- Form in place gaskets

Chemical cure system: Tin cured alkoxy condensation cure system which is not poisonable like platinum addition cured systems

Typical Properties
Uncured

Parameter	Part A	Part B	Mixed
Viscosity, cps	12,500	17,500	15,000
Specific Gravity	1.30	1.30	1.30

Color: Gray
Work Time at room temperature: 3 minutes
Tack free time, room temperature: 15 minutes

Cured – Room Temperature

Durometer, Shore A: 30 minutes: 15 24 hours: 35

After 24 hours:

Tensile Strength, PSI	350	Elongation, %	200
Peel Strength, PPI	40	Lap Shear Strength, PSI	100
Dielectric Strength kv/mm:	21	Dielectric Constant:	3.2
Dissipation Factor at 1kHz:	0.02	Volume resistivity	5×10^{15}

Mixing Instructions: Preferred method is through a static mixer at a 1:1 ratio by volume.

Depth of Cure vs Time: Very deep section cures are formed in 15 minutes, Ultimate cured properties in 24 hours.

Handling precautions: Fully compatible with all materials. Cannot be cure inhibited or contaminated like addition cure systems.

Solids: 98% solids, contains no solvents

Adhesion: This product offers primer-less adhesion to plastics, metals and typical substrates.

Service temperature: -45°C to +260°C continuous

Limitations: Do not use product in solvent or fuel immersion applications. Allow to fully cure before putting assembly into service.

Packaging: Available in 18 lb kits, 90 lb kits and 1000 lb kits.

Handling and safety: For maximum shelf life, keep containers sealed when not in use. Keep out of the reach of children. Uncured sealant irritates eyes and skin. Refer to MSDS.

Shelf-life: Sealed containers guaranteed for 6 months from the ship date when stored in a cool dry area below 70°F.

Applicable standards: Conforms to GM low volatility requirements.

US-POT-57 (Identical to US-POT-54 except color)

US-POT-57 is a fast curing silicone RTV adhesives developed for applications requiring fast deep section cures as well as excellent adhesion. This is a two part, 1:1 mix ratio silicones that when mixed and applied to the substrate allows handling within minutes. When cured, the elastomer resists weathering, ozone, moisture, UV and high temperatures. US-POT-57 works well in static mix dispensing equipment.

Product Features

- Self-leveling
- Fast deep section cure
- Neutral cure
- Convenient 1:1 mix ratio
- Temperature range -45°C to 260°C
- Excellent unprimed adhesion to most plastics, metal and glass

Product Applications

- Adhesive encapsulation
- Assembly line adhesive
- Form in place gaskets

Chemical cure system: Tin cured alkoxy condensation cure system which is not poisonable like platinum addition cured systems

Typical Properties
Uncured

Parameter	Part A	Part B	Mixed
Viscosity, cps	12,500	17,500	15,000
Specific Gravity	1.30	1.30	1.30

Color: Gray
Work Time at room temperature: 3 minutes
Tack free time, room temperature: 15 minutes

Cured – Room Temperature

Durometer, Shore A: 30 minutes: 15 24 hours: 35

After 24 hours:

Tensile Strength, PSI	350	Elongation, %	200
Peel Strength, PPI	40	Lap Shear Strength, PSI	100
Dielectric Strength kv/mm:	21	Dielectric Constant:	3.2
Dissipation Factor at 1kHz:	0.02	Volume resistivity	5×10^{15}

Mixing Instructions: Preferred method is through a static mixer at a 1:1 ratio by volume.

Depth of Cure vs Time: Very deep section cures are formed in 15 minutes, Ultimate cured properties in 24 hours.

Handling precautions: Fully compatible with all materials. Cannot be cure inhibited or contaminated like addition cure systems.

Solids: 98% solids, contains no solvents

Adhesion: This product offers primer-less adhesion to plastics, metals and typical substrates.

Service temperature: -45°C to +260°C continuous

Limitations: Do not use product in solvent or fuel immersion applications. Allow to fully cure before putting assembly into service.

Packaging: Available in 18 lb kits, 90 lb kits and 1000 lb kits.

Handling and safety: For maximum shelf life, keep containers sealed when not in use. Keep out of the reach of children. Uncured sealant irritates eyes and skin. Refer to MSDS.

Shelf-life: Sealed containers guaranteed for 6 months from the ship date when stored in a cool dry area below 70°F.

Applicable standards: Conforms to GM low volatility requirements.

US-POT-453

US-POT-453 is a 1-part, heat cure silicone developed for conformal coating applications and also encapsulating/potting. It offers unprimed adhesion to metals and many plastics. Heated cures result in a tough and durable silicone conformal coating.

Product Features

- Neutral Addition Cure
- Fast heat cure
- Low Viscosity
- Fluoresces under UV light to enable coating inspection
- Adhesion to metals and many plastics
- Convenient 1 part system

Product Applications

- Coating electronic assemblies
- Industrial coating and sealing
- Thin section potting & encapsulation

Chemical cure system: Platinum catalyzed, addition cure system.

Typical Properties
Uncured

Specific Gravity: 0.98	Color: Clear	Solids: 100 %
Shelf Life: 12 MONTHS	Viscosity: 125 cps.	Tack Free Time at 110°C: 15 minutes

Cured – 20 Minutes at 110°C

Durometer, Shore A: 10
Dielectric Strength kv/mm: 13
Dielectric Constant: 2.4
Dissipation Factor at 1kHz: 0.01
Thermal conductivity: 0.0005

Application Methods: Apply by: pouring, dipping, brushing, flow-coat, spin-on or spraying.

Curing: Can be accomplished with heat to very rapid cures. Typical utilization involves dispensing in open air and oven, IR, or hot air curing.

Handling precautions: Avoid contact with tin cured RTV's, sulphur compounds, azides, imides, latex rubber gloves, and amines as cure system can be deactivated

Solids: 100% solids, contains no solvents

Adhesion: This product offers primer-less adhesion to plastics, metals and typical substrates.

Service temperature: -65°C to +250°C continuous

Limitations: Do not use product in solvent or fuel immersion applications. Allow to fully cure before putting assembly into service.

Packaging: Available in 8 pound gallon cans, 40 lb. pails and 400 lb. drums. This product is also available in customer defined packaging upon request.

Handling and safety: For maximum shelf life, keep containers sealed when not in use. Keep out of the reach of children. Uncured sealant irritates eyes and skin. Refer to MSDS.

Shelf-life: Sealed containers guaranteed for 6 months from the ship date when stored in a cool dry area below 70°F.

Applicable standards: Conforms to GM low volatility requirements.

US-POT-24333

US-POT-24333 is a fast curing silicone pourable RTV adhesives developed for potting and encapsulating applications requiring fast deep section cures as well as excellent adhesion. This is a two part, variable mix ratio silicone that when mixed allows handling within 20 to 120 minutes. When cured, the elastomer resists weathering, ozone, moisture, UV and high temperatures. US-POT-24333 works well in manual or static mix dispensing equipment.

Product Features

- Self-leveling
- Fast deep section cure
- Neutral cure
- User defined variable 100:3-5 mix ratio
- Temperature range -40°C to 204°C
- Excellent unprimed adhesion to most plastics, metal and glass

Product Applications

- Adhesive encapsulation
- Assembly line adhesive
- Form in place gaskets
- Electronics potting
- Thermal insulation, vibration & moisture isolation

Chemical cure system: Tin cured alkoxy condensation cure system which is not poisonable like platinum addition cured systems

Typical Properties
Uncured

Parameter	Part A	Part B	Mixed
Color	Blue	White	Light Blue
Viscosity, cps	1,000	10,000	9,000
Specific Gravity	1.10	1.30	1.30
Consistency, mixed:	3% ratio	5% ratio	
Gel time, minutes	60	10	

Cured – Room Temperature

Durometer, Shore A: 40			
Tensile Strength, PSI	350	Elongation, %	200
Peel Strength, PPI	40	Lap Shear Strength, PSI	100
Dielectric Strength kv/mm:	19.5	Dielectric Constant:	3.8
Dissipation Factor at 1kHz:	0.006	Volume resistivity	1.8×10^{14}
Thermal Conductivity W/m°K	0.17		
Coefficient of Thermal Expansion cm/cm °C		20×10^{-5}	

Mixing Instructions: Preferred method is through a static mixer or manually at 100:3 to 5 ratio by weight.

Curing: Cure speed can be accelerated with increased humidity. Room temperature cure with ambient humidity results in a cured elastomer with very high adhesive properties.

Cure System: Oxime cure system.

Solids: 98% solids, contains no solvents

Adhesion: This product offers primer-less adhesion to plastics, metals and typical substrates.

Limitations: Do not use product in solvent or fuel immersion applications. Allow to fully cure before putting assembly into service.

Packaging: Available in 10 lb kits, 50 lb kits and 500 lb kits.

Handling and safety: For maximum shelf life, keep containers sealed when not in use. Keep out of the reach of children. Uncured sealant irritates eyes and skin. Refer to MSDS.

Shelf-life: Sealed containers guaranteed for 1 year from the ship date when stored in a cool dry area below 70°F.

Applicable standards: Conforms to GM low volatility requirements.

US-POT-24336

US-POT-24333 is a fast curing silicone pourable RTV adhesives developed for potting and encapsulating applications requiring fast deep section cures as well as excellent adhesion. This is a two part, variable mix ratio silicone that when mixed allows handling within 20 to 120 minutes. When cured, the elastomer resists weathering, ozone, moisture, UV and high temperatures. US-POT-24333 works well in manual or static mix dispensing equipment.

Product Features

- Self-leveling
- Fast deep section cure
- Neutral cure
- User defined variable 100:3-5 mix ratio
- Temperature range -40°C to 204°C
- Excellent unprimed adhesion to most plastics, metal and glass

Product Applications

- Adhesive encapsulation
- Assembly line adhesive
- Form in place gaskets
- Electronics potting
- Thermal insulation, vibration & moisture isolation

Chemical cure system: Tin cured alkoxy condensation cure system which is not poisonable like platinum addition cured systems

Typical Properties
Uncured

Parameter	Part A	Part B	Mixed
Color	Blue	White	Light Blue
Viscosity, cps	1,000	10,000	9,000
Specific Gravity	1.10	1.30	1.30
Consistency, mixed:	3% ratio	5% ratio	
Gel time, minutes	60	10	

Cured – Room Temperature

Durometer, Shore A: 40			
Tensile Strength, PSI	350	Elongation, %	200
Peel Strength, PPI	40	Lap Shear Strength, PSI	100
Dielectric Strength kv/mm:	19.5	Dielectric Constant:	3.8
Dissipation Factor at 1kHz:	0.006	Volume resistivity	1.8×10^{14}
Thermal Conductivity W/m°K	0.17		
Coefficient of Thermal Expansion cm/cm °C		20×10^{-5}	

Mixing Instructions: Preferred method is through a static mixer or manually at 100:3 to 5 ratio by weight.

Curing: Cure speed can be accelerated with increased humidity. Room temperature cure with ambient humidity results in a cured elastomer with very high adhesive properties.

Cure System: Oxime cure system.

Solids: 98% solids, contains no solvents

Adhesion: This product offers primer-less adhesion to plastics, metals and typical substrates.

Limitations: Do not use product in solvent or fuel immersion applications. Allow to fully cure before putting assembly into service.

Packaging: Available in 10 lb kits, 50 lb kits and 500 lb kits.

Handling and safety: For maximum shelf life, keep containers sealed when not in use. Keep out of the reach of children. Uncured sealant irritates eyes and skin. Refer to MSDS.

Shelf-life: Sealed containers guaranteed for 1 year from the ship date when stored in a cool dry area below 70°F.

Applicable standards: Conforms to GM low volatility requirements.

US-POT-24339

US-POT-24339 is a fast curing silicone pourable RTV adhesives developed for potting and encapsulating applications requiring fast deep section cures as well as excellent adhesion. This is a two part, variable mix ratio silicone that when mixed allows handling within 45 to 120 minutes. When cured, the elastomer resists weathering, ozone, moisture, UV and high temperatures. US-POT-24339 works well in manual or static mix dispensing equipment.

Product Features

- Self-leveling
- Fast deep section cure
- Neutral cure
- User defined variable 100:3-5 mix ratio
- Temperature range -45°C to 260°C
- Excellent unprimed adhesion to most plastics, metal and glass

Product Applications

- Adhesive encapsulation
- Assembly line adhesive
- Form in place gaskets
- Electronics potting
- Thermal insulation, vibration & moisture isolation

Chemical cure system: Tin cured alkoxy condensation cure system which is not poisonable like platinum addition cured systems

Typical Properties
Uncured

Parameter	Part A	Part B	Mixed
Color	Blue	White	Light Blue
Viscosity, cps	1,000	5,000	3,600
Specific Gravity	1.10	1.30	1.30
Consistency, mixed:	3% ratio	5% ratio	
Gel time, minutes	60	45	

Cured – Room Temperature

Durometer, Shore A: 50			
Tensile Strength, PSI	350	Elongation, %	200
Peel Strength, PPI	40	Lap Shear Strength, PSI	100
Dielectric Strength kv/mm:	19.5	Dielectric Constant:	3.8
Dissipation Factor at 1kHz:	0.006	Volume resistivity	1.8×10^{14}
Thermal Conductivity W/m°K	0.17		
Coefficient of Thermal Expansion cm/cm °C		20×10^{-5}	

Mixing Instructions: Preferred method is through a static mixer or manually at 100:3 to 5 ratio by weight.

Curing: Cure speed can be accelerated with increased humidity. Room temperature cure with ambient humidity results in a cured elastomer with very high adhesive properties.

Cure System: Oxime cure system.

Solids: 98% solids, contains no solvents

Adhesion: This product offers primer-less adhesion to plastics, metals and typical substrates.

Limitations: Do not use product in solvent or fuel immersion applications. Allow to fully cure before putting assembly into service.

Packaging: Available in 10 lb kits, 50 lb kits and 500 lb kits.

Handling and safety: For maximum shelf life, keep containers sealed when not in use. Keep out of the reach of children. Uncured sealant irritates eyes and skin. Refer to MSDS.

Shelf-life: Sealed containers guaranteed for 1 year from the ship date when stored in a cool dry area below 70°F.