



GE Silicones

Sealants, Adhesives & Encapsulants

**Material
Selector
Guide**



a l k o x y c u r e

o n e p a r t

sealant

a d d i t i o n c u r e

t w o p a r t

GE silicones are outstanding problem-solvers. The following pages offer a simple approach to selecting the type of GE material needed to fulfill "the silicones promise" to our customers.

Consider whether a one- or two-component material may be your best choice. Examine the material selection charts that highlight the typical properties of the various GE Silicones product families.

Please contact us with any questions about your current or potential application. You can reach us by visiting our web site at www.GESilicones.com, or by calling your local GE Silicones distributor, a GE Silicones sales representative or our toll-free number at 800.255.8886.

We appreciate your interest in GE Silicones.

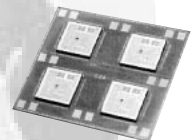
Increase Productivity & Performance in OEM Assembly and Electronics with GE Silicones

As a world leader in silicone technology, GE Silicones offers a complete line-up of industrial adhesives, sealants, gels and encapsulants (please see Gel Selector Guide CDS 5046).

Their primary uses are for *adhering*, bonding parts together; *sealing* out moisture, environmental contaminants and UV; *insulating* against mechanical stress, vibration and the effects of thermal cycling; providing *electrical* protection; and for *formed-in-place gasketing* (FIPG).

With so many uses, GE silicones are at work world wide in virtually every industry, offering unparalleled reliability and long-term performance. Silicone, manufactured from silicon, was the first synthetic *inorganic* material ever made. Silicones, or silicon-based compounds, are remarkable materials, offering a wide range of physical properties and an almost limitless range of applications. Their high- and low-temperature stability, strength, ultraviolet resistance, and aggressive adhesion to a wide variety of substrates make silicone materials exceptionally versatile and dependable.

As a global supplier of these unique silicone materials, GE offers the material expertise and application knowledge to meet your specific performance criteria — wherever you are.



Application and Market Overview

GE Silicones

Adhesives & Sealants

Versatile Technology

Silicone adhesive sealants from GE are one-part materials that require no mixing, utilize either atmospheric moisture or heat to cure, and offer primerless adhesion to many substrates.

Custom Applications

GE produces a full range of one-part materials, each with distinct customer benefits. Many one-part silicone adhesive sealants are highly suitable for assembly applications near sensitive electrical or electronic components. Addition or heat-accelerated silicones offer very fast cure, have virtually no shrinkage and no corrosive by-products.

Dispensing Systems Productivity

One-part products can be precisely dispensed with automated or manual equipment as:

- Formed-in-place gaskets
- Sealants
- Structural adhesives
- Protective coatings



Major industry segments that utilize GE one-part silicone adhesives and sealants:

- Appliances
- Automotive
- Commercial aircraft
- Communications
- Mass transit
- Industrial maintenance & repair
- RVs

GE Silicones

Encapsulants

Electronic Specialties

Widely used in electronics, silicone encapsulants from GE are primarily two-part materials, and all use atmospheric moisture or heat to initiate cure. These products are designed to be compatible with most electronic devices and offer superior mechanical and environmental protection.

Custom Technologies

GE two-part silicones have no corrosive cure by-products. They are available in a wide range of cure speeds and viscosities. Products are available that offer enhancements for extra thermal cycling protection, optical clarity and strength.

GE Silicones two-part adhesives and encapsulants offer innovative solutions to the challenges of protecting high performance electronic components, wherever they are used.



Major application segments:

- Appliances
- Automobiles
- Computers & business equipment
- Commercial aircraft
- Telecommunications
- Mass transit

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General Purpose
Extreme Low
Temperature
Thermally Conductive

One-Part

RTV Silicone

Adhesive

Sealants

General Purpose & Specialty Grades

† These sealants are not for use in delicate electrical and electronic applications in which corrosion of copper, brass or other sensitive metals is undesirable.

† † When allowed to cure in enclosed conditions, these sealants may discolor sensitive metals in direct contact. Should not be used in contact with polycarbonate.

* This rating is based on a standard, small-scale laboratory test and, as such, is not reliable for determining, evaluating, predicting, or describing the flammability or burning characteristics of the product under actual fire conditions. Rating can be dependent on thickness. UL File No. E36952. www.UL.com/plastics

** Testing for the referenced MIL Specs is performed in accordance with current GE Silicones quality test methods; laboratory conditions and procedures, frequency, and sampling, which are not necessarily identical with the methods, conditions, procedures, frequency and sampling stated or referenced in the listed specification. **Call 800.255.8886 for additional information on MIL Specs.** Any certification will be limited to listed properties and will not imply or state conformity to any other aspect of the referenced specification, including but not limited to marking, packaging, bar coding, testing or sampling. Contact GE Silicones for a comparison review.

*** Cure times tend to be the maximum. By altering the bead size, temperature, and the equipment used, these cure times may be significantly reduced.

Packaging Key

3TG	2.8 fl. oz. plastic tube
12T	10.3 fl. oz. aluminum tube
100G	100 gram squeeze tube
150G	150 gram tube
200G	200 gram tube
333M	333 ml. cartridge
06S	5.4 fl. oz. cartridge
12C	10.1 fl. oz. cartridge
5GP	5 gallon pail (40 lbs.)
55F	55 gallon fiber drum
55G	55 gallon drum (450 lbs.)
01K	1 quart can (2.2 lbs.)
02K	2 quart can (4.4 lbs.)
18K	5 gallon pail (39.6 lbs.)
20K	5 gallon pail (44 lbs.)
180K	55 gallon drum (400 lbs.)
200K	55 gallon drum (440 lbs.)
450G	450 gram tube

Not all packaging is available for all grades. Please check with your GE Silicones customer service representative.

	General Purpose Economical		Specialty Silicones Neutral, Non-Corrosive • High Temp. • Low Volatiles • Highest Strength • Plastics						
	IS802† White paste sealant IS803† Black paste sealant IS808† Translucent paste sealant IS800.09† Aluminum paste sealant	IS806† Red, high temperature paste sealant	RTV106† Red, high temperature paste adhesive sealant	RTV116† Red, high temperature flowable adhesive sealant	RTV133 Black, flame retardant adhesive sealant	RTV142 White, low volatile paste adhesive sealant	RTV157† Gray, high strength paste adhesive sealant	RTV159† Red, high strength, high temperature paste adhesive sealant	RTV5812†† White, fast cure paste adhesive sealant RTV5813†† Black, fast cure paste adhesive sealant RTV5818†† Translucent, fast cure paste adhesive sealant
Features, Benefits	Acetoxy cure. Cost effective sealing, bonding. UL HB recognition*, NSF status, USDA, FDA compliance.	Acetoxy cure. For high heat applications. UL HB recognition*, NSF status, USDA, FDA compliance.	Acetoxy cure. High strength. Use to encapsulate and seal heating elements. FDA compliance. Meets MIL-A-46106**. NSF & USDA status.	Acetoxy cure. Use in high temperature applications up to 260°C (500°F). Meets MIL-A-47040**.	Alkoxy cure. UL V-1 and V-0 recognition*. Use as a sealant on firewalls, flame retardant coating; switching devices, motors and high voltage transformers.	Alkoxy cure. Non-corrosive. Use for electronic gasketing applications. Meets 5856053 Navy Sea Systems specification.	Acetoxy cure. Use for high strength adhesive gasketing, maintenance and electrical insulation.	Acetoxy cure. Use in sealing applications requiring extremely high bond strength. FDA compliance, NSF status.	Modified alkoxy‡ (neutral) cure. Primerless adhesion. Use in assembly applications requiring high productivity. UL HB recognition*.
Viscosity (cps; flowable products) Applications Rate (g/min; paste products)	410 g/min	440 g/min	400 g/min	25,000 cps	650 g/min	975 g/min	155 g/min	175 g/min	360 g/min
Useful Temperature Range °C (°F)	-60 to 205 (-75 to 400)	-60 to 260 (-75 to 500)	-60 to 260 (-75 to 500)	-60 to 260 (-75 to 500)	-60 to 205 (-75 to 400)	-60 to 204 (-75 to 400)	-60 to 204 (-75 to 400)	-60 to 260 (-75 to 500)	-60 to 205 (-75 to 400)
Specific Gravity	1.04	1.05	1.07	1.09	1.23	1.09	1.09	1.09	1.04
Hardness, Shore A Durometer	23	22	30	28	46	34	28	20	21
Tensile Strength, MPa (psi)	2.06 (300)	1.67 (250)	2.55 (375)	2.45 (350)	4.51 (650)	3.78 (550)	6.21 (975)	7.07 (1025)	1.86 (275)
Elongation (%)	450	425	400	350	250	400	825	350	500
Tack Free Time (min)	30	30	20	30	1 hr	4 hrs	45	45	15
Dielectric Strength kV/mm (V/mil)	20 (500)	19.5 (500)	19.7 (500)	19.7 (500)	20 (500)	19.7 (500)	20.7 (525)	15.7 (400)	16.8 (426)
Dielectric Constant	2.9 @ 60 Hz	2.9 @ 60 Hz	2.8 @ 60 Hz	2.6 @ 60 Hz	2.8 @ 100 Hz	2.8 @ 60 Hz	2.9 @ 60 Hz	2.8 @ 60 Hz	2.8 @ 100 Hz
Packaging (see Packaging Key)	3TG, 12C, 5GP, 55G	12C, 5GP, 55G	3TG, 12T, 06S, 12C, 5GP, 55G	12T, 5GP, 55G	12C, 5GP, 55G	06S	3TG, 06S, 5GP, 55G	3TG, 06S, 5GP, 55G	12C, 5GP, 55G
	General Purpose Economical (cont.)		Specialty Silicones (cont.)		Thermally Conductive Neutral, Non-Corrosive				
	RTV122†† White paste sealant RTV123†† Black paste sealant RTV128†† Translucent paste sealant	RTV6702†† White paste sealant RTV6703†† Black paste sealant RTV 6708 Translucent paste sealant	FRV1106† Red, fluorosilicone paste adhesive sealant	RTV1473† Black, heavy-bodied paste adhesive sealant	TSE3280-G Dark gray, high viscosity, thermally conductive (0.88 W/m²K) adhesive sealant	TSE3281-G Dark gray, medium viscosity, thermally conductive (1.68 W/m²K) adhesive sealant	TSE3940 Gray, thermally conductive, (0.41 W/m²K) paste adhesive sealant. UL94 V-0* recognition (File E56745). Meets MIL-A-46146B corrosion only.	TSE3941 White, thermally-conductive, (0.83 W/m²K) paste adhesive sealant. UL94 V-1* recognition (File E56745). Meets MIL-A-46146B corrosion only.	
Features, Benefits	Modified alkoxy‡ neutral cure. Bonds metals, plastics and glass. UL HB recognition*.	Modified alkoxy‡ neutral cure. UL HB recognition*.	Acetoxy cure. Fuel resistant. Use in contact with fuel, solvents and chemicals.	Acetoxy cure. Oil-resistant. Use for formed-in-place gasketing.	Neutral cure. Non-corrosive sealant with excellent primerless adhesion. Use to dissipate heat in electronic devices.	Neutral cure. Non-corrosive sealant with excellent primerless adhesion. Use to dissipate heat in electronic devices.	Neutral cure. UL recognized*, flame retardant, non-corrosive sealant. Offers fast cure, fast tack-free time and aggressive adhesion.	Neutral cure. UL recognized*, flame retardant, non-corrosive sealant. Offers fast cure, fast tack-free time and aggressive adhesion.	
Viscosity (cps; flowable products) Applications Rate (g/min; paste products)	500 g/min	175 g/min	88 g/min	380 g/min	60,000 cps	40,000 cps	—	—	
Useful Temperature Range °C (°F)	-60 to 205 (-75 to 400)	-60 to 205 (-75 to 400)	-60 to 205 (-75 to 400)	-60 to 204 (-75 to 400)	Cure Time 100°C (212°F) 2 hrs 125°C (256°F) 90 min 150°C (302°F) 30 min	Cure Time 100°C (212°F) 2 hrs 125°C (256°F) 90 min 150°C (302°F) 30 min	-55 to 200 (-67 to 392)	-55 to 200 (-67 to 392)	
Specific Gravity	1.04	1.04	1.58	1.06	2.10	2.70	1.49	1.65	
Hardness, Shore A Durometer	30	18	42	30	62	83	40	60	
Tensile Strength, MPa (psi)	1.72 (250)	1.57 (225)	3.33 (500)	3.14 (450)	3.23 (469)	4.51 (654)	3.0 (426)	3.0 (426)	
Elongation (%)	350	450	230	500	110	40	200	100	
Tack Free Time (min)	20	25	20	25	—	—	5	5	
Dielectric Strength kV/mm (V/mil)	19.7 (500)	16 (410)	13.7 (351)	—	19.7 (500)	26 (660)	21 (530)	22 (560)	
Dielectric Constant	2.8 @ 60 Hz	2.9 @ 100 Hz	6.3 @ 1,000 Hz	—	4.5@1 kHz	5.4 @ 60 Hz	4.5 @ 60 Hz	4 @ 60 Hz	
Packaging (see Packaging Key)	12C, 5GP, 55G	3TG, 12C, 5GP, 55G	06S	12C, 5GP, 55G	02K, 200G	01K	150G, 450G	150G, 20K, 333M	

One-Part
RTV Silicone
Adhesive
Sealants

High Performance
& Electronics
Grade

† These sealants are not for use in delicate electrical and electronic applications in which corrosion of copper, brass or other sensitive metals is undesirable.

†† When allowed to cure in enclosed conditions, these sealants may discolor sensitive metals in direct contact.

‡ Material softening may occur between 93 to 200°C (200 to 400°F).

* This rating is based on a standard, small-scale laboratory test and, as such, is not reliable for determining, evaluating, predicting, or describing the flammability or burning characteristics of the product under actual fire conditions. Rating can be dependent on thickness. UL File No. E36592. www.UL.com/plastics

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*** Cure times tend to be the maximum. By altering the bead size, temperature, and the equipment used, these cure times may be significantly reduced.

Packaging Key

3TG	2.8 fl. oz. plastic tube
12T	10.3 fl. oz. aluminum tube
100G	100 gram squeeze tube
150G	150 gram tube
333M	333 ml. cartridge
06S	5.4 fl. oz. cartridge
12C	10.1 fl. oz. cartridge
5GP	5 gallon pail (40 lbs.)
55F	55 gallon fiber drum
55G	55 gallon drum (450 lbs.)
01K	1 quart can (2.2 lbs.)
1.5K	1 quart can (3.3 lbs.)
18K	5 gallon pail (39.6 lbs.)
20K	5 gallon pail (44 lbs.)
25K	5 gallon pail (55 lbs.)
180K	55 gallon drum (400 lbs.)
200K	55 gallon drum (440 lbs.)
450G	450 gram tube

	High Performance Assembly		Electronics		Room Temperature Cure, Non-Corrosive					
	RTV5222 White, low modulus paste sealant RTV5223 Black, low modulus paste sealant RTV5229 Gray, low modulus paste sealant	RTV5242 White, fast cure paste sealant RTV5243 Black, fast cure paste sealant RTV5249 Gray, fast cure paste sealant	RTV160 White, pourable, non-corrosive adhesive sealant	RTV162 White, MIL Spec paste adhesive sealant	RTV167 Light gray, high strength paste adhesive sealant	TSE392-C Translucent, paste adhesive sealant TSE392-W White, paste adhesive sealant	TSE397-B Black, semi-flowable adhesive sealant TSE397-C Translucent, semi-flowable adhesive sealant TSE397-W White, semi-flowable adhesive sealant	TSE399-B Black, flowable paste adhesive sealant TSE399-C Translucent, flowable paste adhesive sealant TSE399-W White, flowable paste adhesive sealant		
Features, Benefits	Alkoxy neutral cure. Totally non-corrosive. Primerless adhesion, long tooling time. UL HB recognition*.	Alkoxy neutral cure. Totally non-corrosive, hydrolytically stable, primerless adhesion. UL HB recognition*.	Alkoxy neutral cure. Non-corrosive. Use as a thin-section PCB coating. UL HB recognition*.	Alkoxy neutral cure. Non-corrosive. Bond capacitors, resistors & integrated circuits to PCBs; seal exposed wires, faying surfaces, connectors. Meets MIL-A-46146B**, UL HB recognition*.	Alkoxy neutral cure. Highest strength electronics adhesive sealant. Use for mechanical or electrical bonding and insulating applications. Meets MIL-A-46146B**. UL HB recognition*.	Alkoxy neutral cure. Use for electronic sealing and coating. These products offer fast tack-free time and aggressive adhesion. Meets MIL-A-46146B corrosion test only.	Alkoxy neutral cure. Use for electronic sealing and coating. These products offer fast tack-free time and aggressive adhesion. Meets MIL-A-46146B corrosion test only.	Alkoxy neutral cure. Use for electronic sealing and coating. These products offer fast tack-free time and aggressive adhesion. Meets MIL-A-46146B corrosion test only.		
Viscosity (cps; flowable products) Applications Rate (g/min; paste products)	185 g/min	300 g/min	38,000 cps	350 g/min	180 g/min	—	50,000 cps	2,500 cps		
Useful Temperature Range °C (°F)	-60 to 205‡ (-75 to 400F)	-60 to 205 (-75 to 400)	-60 to 205 (-75 to 400)	-60 to 205 (-75 to 400)	-60 to 205 (-75 to 400)	-55 to 200 (-67 to 392)	-55 to 200 (-67 to 392)	-55 to 200 (-67 to 392)		
Specific Gravity	1.4	1.5	1.04	1.09	1.12	1.04	1.04	1.04		
Hardness, Shore A Durometer	26	40	25	35	37	30	20	30		
Tensile Strength, MPa (psi)	2.60 (370)	2.50 (320)	1.86 (275)	3.73 (550)	5.49 (800)	1.6 (228)	1.1 (156)	1.3 (185)		
Elongation (%)	750	425	230	400	600	400	300	140		
Tack Free Time (min)	3 hrs	45	4 hrs	4 hrs	4 hrs	10	10	10		
Dielectric Strength kV/mm (V/mil)	16.5 (420)	20 (500)	20 (500)	18 (450)	19.7 (500)	22 (560)	22 (560)	20 (500)		
Dielectric Constant	3.9 @ 60 Hz	2.8 @ 60 Hz	2.8 @ 60 Hz	2.8 @ 60 Hz	2.8 @ 60 Hz	2.9 @ 60 Hz	2.9 @ 60 Hz	2.9 @ 60 Hz		
Packaging (see Packaging Key)	12C, 5GP, 55G	12C, 5GP, 55F	12C, 5GP, 55G	3TG, 12C, 5GP, 55G	3TG, 12C, 5GP	100G, 333M, 18K	100G, 333M, 01K, 18K	333M, 100G, 18K		
	High Performance Assembly (cont.)		Electronics Thermal Cure, Non-Corrosive							
	RTV102† White paste sealant RTV103† Black paste sealant RTV108† Translucent paste sealant RTV109† Aluminum paste sealant	RTV112† White flowable sealant RTV118† Translucent flowable sealant	TSE322 Light blue flowable adhesive sealant TSE322B Black, flowable adhesive sealant TSE322S Light Blue, flowable adhesive sealant (70,000 cps)	TSE325 White, flowable adhesive sealant	TSE326 Red, flowable, high temperature adhesive sealant, UL HB Recognition (File E56745)	TSE3212 White, high viscosity, adhesive sealant	TSE3221 Clear, flowable adhesive sealant	TSE3251 White, flowable adhesive sealant TSE3251-C Translucent, flowable adhesive sealant	TSE3261-G Gray, high-temperature, low-volatile flowable adhesive sealant	RTV6424 White, self-leveling, paste adhesive sealant
Features, Benefits	Acetoxycure. High strength. FDA compliance. Meets MIL-A-46106**, MIL-S-47162**, MIL-S-14112**, NSF status, USDA. UL recognition.	Acetoxycure, FDA compliance. Meets MIL-A-46106**, UL recognition*, NSF status, USDA.	Neutral cure. Non-corrosive heat-curing adhesive for electronics sealing; bonding and coating. Use as a thermal barrier for automotive parts; as a fabric seam seal.	Neutral cure. Non-corrosive sealant for potting, coating and sealing applications requiring visual clarity.	Neutral cure. Non-corrosive adhesive sealant for high heat assembly, gasketing and coating applications.	Neutral cure. Non-corrosive adhesive sealant for high heat assembly, gasketing and coating applications. For ceramic board to metal case for hybrid ICs.	Neutral cure. Non-corrosive sealant for potting, coating and sealing applications requiring visual clarity.	Neutral cure. Non-corrosive sealant for potting, coating and sealing applications.	Neutral cure. Sealing and bonding for high-temperature applications.	Neutral, heat curing adhesive for sealing and bonding. Use as a thermal barrier for automotive parts.
Viscosity (cps; flowable products) Applications Rate (g/min; paste products)	400 g/min	20,000 cps	110,000 cps	4,000 cps	28,000 cps	280,000 cps	55,000 cps	8,500 cps	80,000 cps	150 g/min
Useful Temperature Range °C (°F)	-60 to 205 (-75 to 400)	-60 to 205 (-75 to 400)	Cure Time 100°C (212°F) 3 hrs 125°C (256°F) 45 min 150°C (302°F) 30 min	Cure Time 100°C (212°F) 5 hrs 120°C (248°F) 90 min 150°C (302°F) 1 hr	Cure Time 100°C (212°F) 2 hrs 125°C (256°F) 90 min 150°C (302°F) 1 hr	Cure Time 100°C (212°F) 4 hrs 120°C (248°F) 2 hrs 150°C (302°F) 1 hr	Cure Time 100°C (212°F) 3 hrs 125°C (256°F) 90 min 150°C (302°F) 1 hr	Cure Time 100°C (212°F) 4 hrs 120°C (248°F) 2 hrs 150°C (302°F) 1 hr	Cure Time 120°C (248°F) 2 hrs 150°C (302°F) 10 min	Cure Time 125°C (256°F) 45 min 150°C (302°F) 30 min
Specific Gravity	1.05	1.05	1.28	1.02	1.45	1.26	1.03	1.02	1.48	1.17
Hardness, Shore A Durometer	30	25	45	12	43	52	28	16	54	30
Tensile Strength, MPa (psi)	2.75 (400)	2.20 (325)	2.93 (425)	0.7 (102)	3.43 (498)	3.7 (537)	2.35 (341)	0.7 (102)	4.9 (710)	4.65 (675)
Elongation (%)	450	325	200	200	170	240	290	200	160	550
Tack Free Time (min)	20	20	NA	NA	NA	NA	NA	NA	NA	NA
Dielectric Strength kV/mm (V/mil)	19.7 (500)	15.7 (400)	19.7 (500)	21 (534)	22 (558)	20 (500)	21 (534)	20 (500)	22 (558)	19.7 (500)
Dielectric Constant	2.8 @ 60 Hz	2.8 @ 60 Hz	3.1 @ 60 Hz	2.9 @ 60 Hz	3.3 @ 60 Hz	3.2 @ 60 Hz	2.8 @ 60 Hz	2.8 @ 60 Hz	3.3 @ 60 Hz	2.9 @ 60 Hz
Packaging (see Packaging Key)	3TG, 12C, 12T, 5GP, 55G	3TG, 12T, 5GP, 55G	01K, 20K	18K	01K, 20K, 200K	333M, 20K	01K, 18K, 180K	01K, 18K	1.5K, 25K	06S, 5GP, 55G

Two-Part
RTV Silicone
Potting &
Encapsulating
Compounds
Condensation
Cure

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With the exception of RTV12 and SEA210, the materials on this page do not adhere to substrates without primer. If adhesion is required, use one of the following primers.

Primer	Use For	Use With
SS4004P SS4044P	General Purpose	1C, 2C
SS4179	Plastics & General Purpose	1C
SS4155	General Purpose	1C, 1A, 2A, 2C
SS4120	Where Clarity Is Needed	1A, 2A
C – Condensation Cure A – Addition Cure		

	General Purpose								Extreme High Temperature					Extreme Low Temperature		
	RTV11 White	RTV12 Clear	RTV21 Pink	RTV41 White	D1-SEA210 Gray or Black	RTV8111 White	RTV8112 White	RTV8262 Red	RTV31 Red	RTV60 Red	RTV88 Red	RTV560 Red	RTV566 Red	RTV511 White	RTV567 Translucent	RTV577 White
	• Medical molds/ instruments • High voltage power supply potting • General purpose electrical potting	• General purpose potting requiring clear, RT cure • Offers primerless adhesion	• Aerospace thermal insulation • Thick-section potting • Pour-in-place gasketing	• Release coating on metal panels and other substrates	• Fast room temperature cure, paste • Primerless asdhesion	• Meets requirements of MIL-S-23586E/ MIL-PRF-23586F Type I, Class 1, Grade B1	• Meets requirements of MIL-S-23586E/ MIL-PRF-23586F Type I, Class 2, Grade A	• Meets requirements of MIL-S-23586E/ MIL-PRF-23586F Type II, Class 2, Grade A	• Potting surge protec-tors on tele-phone poles • Potting industrial filters • High temp. electrical potting appli-cations • Mechanical protection	• Aerospace applications such as potting, encapsulating, coating and cushioning	• Potting surge protectors • Aerospace applications such as sealing, bonding and gasketing on vertical or overhead surfaces	• Aerospace applications such as potting, sealing and bonding, where extreme high/ low temp. service is required	• Ideal for applications such as aerospace, requiring a low outgassing product	• Potting, encapsulating and coating electronic assemblies and compo-nents	• Applications requiring a low outgassing product	• Aerospace applications such as sealing and insulating • Vertical and overhead surfaces
Properties																
Catalyst	**	RTV12C	**	**	SEA210B (gray) or SEA213B (black)	RTV9891	RTV9858	RTV9858	**	**	**	**	RTV566B	**	RTV567B	**
Mix Ratio (base to curing agent by weight)	100 : 0.5	20 : 1	100 : 0.5	100 : 0.5	100 : 8	100 : 2	100 : 5	100 : 5	100 : 0.5	100 : 0.5	100 : 0.5	100 : 0.5	100 : 0.1	100 : 0.5	100 : 0.1	100 : 0.5
Viscosity, cps (@ 25°C/77°F)	11,000	1,500	26,000	39,000	120 g/min	9,900	11,000	47,000	25,000	47,000	880,000	30,000	42,700	16,000	3,900	700,000
Specific Gravity	1.19	1.00	1.32	1.31	—	1.18	1.19	1.47	1.42	1.48	1.47	1.42	1.49	1.21	1.00	1.35
Hardness, Shore A Durometer	41	18	45	47	37	45	42	52	54	57	58	55	61	42	20	48
Tensile Strength, MPa (psi)	2.06 (300)	—	2.16 (310)	2.16 (310)	2.03 (295)	2.45 (350)	2.06 (300)	4.02 (580)	5.98 (870)	6.86 (990)	5.79 (830)	4.71 (690)	5.49 (800)	2.65 (380)	—	3.04 (440)
Elongation, %	160	200	180	180	255	160	160	150	170	120	120	120	120	170	—	150
Tear Resistance (Die B), kg/cm (lb/inch)	3.5 (20)	—	7.1 (40)	5.2 (29)	—	4.3 (24)	4.8 (27)	7.7 (43)	5 (29)	7 (40)	8 (42)	5.5 (31)	—	3.8 (21)	—	6.8 (38)
Linear Shrinkage, %	0.6	2	0.6	0.6	—	1.0	1.0	0.6	0.6	0.6	0.6	1.0	0.6	1.3	0.6	0.65
Useful Temperature Range (continuous), °C (°F)	-54 to +204 (-65 to +400)	-54 to +204 (-65 to +400)	-54 to +204 (-65 to +400)	-54 to +204 (-65 to +400)	-45 to +125 (-50 to +200)	-54 to +204 (-65 to +400)	-54 to +204 (-65 to +400)	-54 to +260 (-65 to +500)	-54 to +260 (-65 to +500)	-54 to +260 (-65 to +500)	-54 to +260 (-65 to +500)	-115 to +260 (-175 to +500)	-115 to +260 (-175 to +500)	-115 to +204 (-175 to +400)	-115 to +204 (-175 to +400)	-115 to +204 (-175 to+ 400)
Thermal Conductivity, W/m°K	0.29	0.17	0.31	0.31	—	0.29	0.29	0.31	0.31	0.31	0.31	0.31	0.31	0.26	0.29	0.31
Coefficient of Thermal Expansion (Linear CTE) cm/cm °C (in/in °F)	25 x 10 ⁻⁵ (14 x 10 ⁻⁵)	29 x 10 ⁻⁵ (16 x 10 ⁻⁵)	20 x 10 ⁻⁵ (11 x 10 ⁻⁵)	20 x 10 ⁻⁵ (11 x 10 ⁻⁵)	— —	25 x 10 ⁻⁵ (14 x 10 ⁻⁵)	25 x 10 ⁻⁵ (14 x 10 ⁻⁵)	20 x 10 ⁻⁵ (11 x 10 ⁻⁵)	20 x 10 ⁻⁵ (11 x 10 ⁻⁵)	20 x 10 ⁻⁵ (11 x 10 ⁻⁵)	20 x 10 ⁻⁵ (11 x 10 ⁻⁵)	20 x 10 ⁻⁵ (11 x 10 ⁻⁵)	20 x 10 ⁻⁵ (11 x 10 ⁻⁵)	22 x 10 ⁻⁵ (12 x 10 ⁻⁵)	25 x 10 ⁻⁵ (14 x 10 ⁻⁵)	20 x 10 ⁻⁵ (11 x 10 ⁻⁵)
Dielectric Strength (75 mils), kV/mm (V/mil)	20.3 (515)	15.7 (400)	16.5 (420)	20.3 (515)	18.8 (478)	19.7 (500)	18.7 (475)	18.5 (470)	17 (430)	17.7 (450)	17.4 (440)	21.2 (540)	21.2 (540)	20.5 (520)	20.3 (515)	18.5 (470)
Dielectric Constant (1 kHz)	3.3	3.0	3.8	3.7	3.6	3.3	4.02	3.9	4.4	4.0	4.3	3.9	3.9	3.6	3.3	3.98
Dissipation Factor (1 kHz)	0.006	0.001	0.02	0.007	0.0045	0.0055	0.007	0.017	0.03	0.02	0.03	0.02	0.02	0.005	0.006	0.02
Volume Resistivity, ohm-cm	1.1 x 10 ¹⁵	1.0 x 10 ¹³	2.6 x 10 ¹⁴	1.6 x 10 ¹⁴	3.4 x 10 ¹⁴	1.0 x 10 ¹⁵	2.7 x 10 ¹⁵	4.4 x 10 ¹⁴	1.6 x 10 ¹⁴	4.4 x 10 ¹⁴	2.8 x 10 ¹⁴	2 x 10 ¹⁴	2 x 10 ¹⁴	2 x 10 ¹⁴	1.1 x 10 ¹⁵	5.6 x 10 ¹⁴
Specifications	FDA — —	— — —	— — —	FDA — —	— — —	MIL-S-23586E, MIL-PRF-23586F* Type I, Class 1 Grade B1	MIL-S-23586E, MIL-PRF-23586F* Type I, Class 2 Grade A	MIL-S-23586E, MIL-PRF-23586F* Type II, Class 2 Grade A	— — —	— — —	— — —	— — —	Low Volatile — —	— — —	Low Volatile — —	— — —
Packaging	1, 12, 50, 500 lb. kits	1, 42, 420 lb. kits	1, 12, 50, 500 lb. kits	12, 50, 500 lb. kits	10, 50, 500 lbs.	1, 12, 55G lb. kits	1, 12, 55G lb. kits	1, 12, 55G lb. kits	1, 12, 50, 500 lb. kits	1, 12, 50, 500 lb. kits	1, 12, 13, 50, 55, 500 lb. kits	12 lb. kit	1 lb. kit	1, 12, 50, 500 lb. kits	1 lb. kit	1, 12 lb. kits
Processing																
Work (Pot) Life (25°C/77°F)	1.5 hours	1.6 hours	1 hour	1 hour	35 minutes	30 minutes	2 hours	2 hours	2 hours	2 hours	45 minutes	2.25 hours	1.5 hours	1.5 hours	9 hours	2 hours
Cure Time (@ 50% RH)																
25°C (77°F)	24 hours	24 hours	24 hours	24 hours	24 hours	24 hours	24 hours	24 hours	24 hours	24 hours	24 hours	24 hours	24 hours	24 hours	7 days	24 hours

**Two-Part Condensation Cure Catalyst Options:	
DBT	(Standard unless otherwise specified) (slow to moderate cure) liquid – mix ratio = 200:1 standard catalyst, long work-life
STO	(fast cure, short work life) liquid – mix ratio = 200:1 best choice for reversion resistance
RTV9811	(moderate to fast cure) paste – mix ratio = 10:1 best choice for deep section cures (>1")
RTV9910	(slow cure) paste – mix ratio = 10:1 DBT for meter/mix equipment
RTV9950	(moderate cure) paste – mix ratio = 10:1 DBT for meter/mix equipment

Two-Part
RTV Silicone
Potting &
Encapsulating
Compounds

Addition Cure

* Penetration (mm).
** This rating is based on a standard, small-scale laboratory test and, as such, is not reliable for determining, evaluating, predicting, or describing the flammability or burning characteristics of the product under actual fire conditions. Rating can be dependent on thickness. UL File No. E36592. www.UL.com/plastics

The materials on this page require a primer to obtain a chemical bond to various substrates.
The gels will provide a PSA bond, which has proven adequate for most uses.

For A Chemical Bond		
use	SS4155	Blue
or	SS4120	Clear

	General Purpose						Extreme Low Temp.	Thermally Conductive	
	RTV615 Clear	RTV627 Dark Gray	RTV630 Blue	RTV6108	RTV6428 Dark Gray	TSE3033 Clear	RTV656 Clear	TSE3331 Dark Gray	TSE3380 Gray
Properties									
Mix Ratio (base to curing agent by weight)	10 : 1	1 : 1	10 : 1	1 : 1	1 : 1	1 : 1	10 : 1	1 : 1	1 : 1
Viscosity, cps (@ 25°C/77°F)	4,000	1,270	150,000	500,000	1,300	1,000 rate 150 g/min)	4,000	3,500	40,000
Specific Gravity	1.02	1.37	1.28	1.08	1.37	1.01	1.02	1.51	2.7
Refractive Index	1.406	—	—	—	—	1.406	1.406	—	—
Hardness, Shore A Durometer	44	62	60	40	62	30	44	60	73
Tensile Strength, MPa (psi)	6.37 (920)	3.24 (475)	5.69 (820)	5.17 (750)	3.24 (475)	0.98 (142)	6.37 (920)	3.24 (475)	2.94 (427)
Elongation, %	160	60	250	450	60	130	160	50	100
Tear Resistance (Die B), kg/cm (lb/inch)	—	3.4 (19)	20 (110)	210	3.4 (19)	—	—	3.4 (19)	—
Useful Temperature Range (continuous), °C (°F)	-60 to +204 (-75 to +400)	-60 to +204 (-75 to +400)	-60 to +204 (-75 to +400)	-60 to +204 (-75 to +400)	-60 to +204 (-75 to +400)	-60 to +204 (-75 to +400)	-115 to +204 (-175 to +400)	-60 to +204 (-75 to +400)	-60 to +204 (-75 to +400)
Thermal Conductivity, W/m²K	0.19	0.31	0.25	0.19	0.31	0.17	0.19	0.63	1.08
Coefficient of Thermal Expansion (Linear CTE), cm/cm °C (in/in °F)	27 x 10 ⁻⁵ (15.3 x 10 ⁻⁵)	21 x 10 ⁻⁵ (11.4 x 10 ⁻⁵)	21 x 10 ⁻⁵ (11.4 x 10 ⁻⁵)	27 x 10 ⁻⁵ (15.3 x 10 ⁻⁵)	21 x 10 ⁻⁵ (11.4 x 10 ⁻⁵)	23 x 10 ⁻⁵ (12.5 x 10 ⁻⁵)	27 x 10 ⁻⁵ (15.3 x 10 ⁻⁵)	17 x 10 ⁻⁵ (9.2 x 10 ⁻⁵)	(7.6 x 10 ⁻⁵) 14 x 10 ⁻⁵
Dielectric Strength (75 mils), kV/mm (V/mil)	19.7 (500)	20.1 (510)	17.7 (450)	19.7 (500)	21 (530)	21 (530)	19.7 (500)	20 (500)	15 (381)
Dielectric Constant (1 kHz)	2.89	2.97	3.2	2.85	3.0	2.8	2.89	3.3	5.9
Dissipation Factor (1 kHz)	0.0004	0.006	0.006	0.0003	0.0061	0.001	0.0004	0.003	0.003
Volume Resistivity, ohm-cm	1.8 x 10 ¹⁵	5.7 x 10 ¹⁴	4.5 x 10 ¹⁵	2.9 x 10 ¹⁴	5.7 x 10 ¹⁴	2 x 10 ¹⁵	3.2 x 10 ¹⁵	2 x 10 ¹⁴	1.4 x 10 ¹⁵
Specifications	FDA	UL94 V-1 and V-0**	—	—	UL94 V-1 and V-0**	—	FDA	UL94 V-0** (1 mm)	—
Packaging	1, 10, 44, 440 lb. kits	2, 1M, 22, 100 lb. kits	1, 10, 44, 495 lb. kits	1, 80 lb. kits	2, 1M, 100 lb. kits	2, 4, 80 lb. kits	1, 10, 44, 440 lb. kits	1, 2, 100 lb. kits	
Processing									
Work (Pot) Life (25°C/77°F)	4 hours	2 hours	4 hours	48+ hours	4 minutes	6 hours	4 hours	8 hours	
Cure Time (@ 50% RH)									
25°C (77°F)	7 days	2 days	7 days	—	30 minutes	—	7 days	—	—
65°C (149°F)	4 hours	4 hours	4 hours	—	15 minutes	—	4 hours	—	—
100°C (212°F)	1 hour	1 hour	1 hour	1 hour	10 minutes	1 hour	1 hour	10 minutes	2 hours
125°C (256°F)	45 minutes	45 minutes	45 minutes	45 minutes	5 minutes	45 minutes	45 minutes	5 minutes	1.5 hours
150°C (302°F)	15 minutes	15 minutes	15 minutes	15 minutes	2 minutes	30 minutes	15 minutes	5 minutes	1 hour

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