



GE Silicones

Small Appliance

Materials &
Applications



The Undisputed Leader In Silicones

Since the ground-breaking invention of silicones 50 years ago, GE has led the world in developing new silicone products and applications.

With a complete line of industrial adhesives, sealants, gels, and encapsulants, GE Silicones has helped customers solve problems and open markets in countless industries—including small appliances.

GE offers application development assistance, including prototyping and analytical services for specific customer applications. Product feasibility studies, process analyses, and testing capabilities at GE Silicones' laboratories can help customers enhance both quality and manufacturing processes.



From Silicon To Solutions

Manufactured from silicon, silicones were the first synthetic inorganic materials ever made. For over half a century, they have provided versatile, environmentally friendly solutions for manufacturers worldwide. Their primary uses fall into these broad categories:

- Adhesion • Sealing • Insulation
- Formed-in-place gasketing (FIPG)

Within those categories is a wealth of applications that take advantage of silicones' remarkable physical properties: high- and low-temperature stability, strength, moisture resistance, electrical insulation, and long-term adhesion to a broad range of substrates.

Small Appliance Solutions At Work

In performance and durability alike, every small appliance can benefit from these silicone series. Specifically, GE silicones:

- Seal joints to increase structural integrity and prevent leaks
- Bond mating surfaces to protect against moisture, steam buildup, and normal wear and tear
- Glaze glass and polycarbonate windows
- Fill voids around power cord outlets
- Replace mechanical fasteners with a durable, flexible fastening material
- Install formed-in-place gaskets to seal seams between mating surfaces, especially when accommodating continuous joint movement

Premier Products For Small Appliances

Five GE Silicones sealant series are the key materials that fulfill the specific requirements of small appliance manufacturers:

- **The RTV5200 series** features fast, neutral-cure sealing, room-temperature curing, exceptional primerless adhesion, superb corrosion resistance, and hydrolytic stability. Manufacturers can use either RTV5220 (low modulus) or RTV5240 (fast cure), depending on key processing parameters.
- **The RTV100 series** is GE Silicones' premier line of high-strength acetoxy-cure sealants with FDA and UL recognition. It includes both paste and flowable grades.
- **Series TSE326** (flowable) and **TSK3280G/TSE3281G** (medium viscosity)—a family of non-corrosive, one-component silicone adhesives—offers extremely fast cure with the addition of heat.
- **The RTV5810 series**, one of GE Silicones' many modified alkoxy materials, provides very fast cure, good plastics adhesion, UL recognition, and non-corrosion when used with basic industrial metals.





Adding Value Across Applications



Automatic Coffee Makers

With properties like primerless adhesion and high temperature resistance, adhesive sealants from GE Silicones promote smooth operation, long service life, and ease of application.

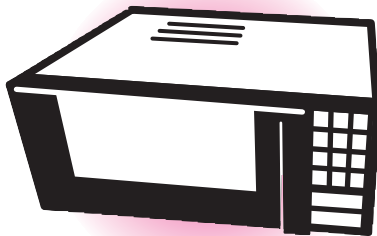
- RTV106 high-temperature sealant bonds heating element in base plate assembly.
- RTV5243 fast-cure adhesive replaces metal band in handle.
- TSE3280 thermally conductive adhesive for warmer plate.



Steam Irons

Thermal cycling resistance and moisture protection make for longer life, while easy automated dispensing boosts manufacturing productivity.

- TSE326 steam chamber seal. • RTV5812 water tank sealant.
- RTV116 cal rod seal (UL recognized).



Microwave Ovens

Offering superb moisture and chemical resistance, adhesive sealants from GE bond dissimilar surfaces and seal seams that have contact with moisture.

- RTV100 window assembly seal replaces mechanical fastening.
- RTV5220 replaces die-cut gasket with fast-cure, low-modulus door seal.
- RTV5240, a fast-cure door handle adhesive, takes the place of mechanical fastening.

Vacuum & Carpet Cleaners

Because they face many environmental contaminants, these appliances require GE adhesive sealants to protect electrical and moisture-handling components.

- RTV5810 provides fast cure and excellent plastic adhesion for handle.
- RTV5240 fast-cure gap fill provides moisture resistance for cord assembly.
- As formed-in-place gasket for vacuum bag, RTV100 replaces die-cut gaskets.
- RTV6700 neutral-cure methoxy sealant offers non-corrosion and long tooling time for many cleaner applications.



Mixers & Blenders

GE silicones provide long-term protection from the destructive effects of thermal cycling, moisture, and other environmental factors.

- High-strength RTV5220 handle adhesive replaces mechanical fastening.
- RTV5800 base plate adhesive stands up to a wide temperature range.
- Electrically conductive RTV5240 formed-in-place gasket replaces die-cut gasket for motor housing.



Toaster Ovens

With high strength, resistance to thermal cycling, and high temperature resistance, GE adhesive sealants provide superior sealing and bonding in toaster oven applications.

- RTV5240, as fast-cure handle and hinge assembly adhesive, replaces mechanical fastening.
- RTV5220 window frame adhesive offers primerless adhesion to glass, metals, and plastics.





Product Profile Comparison

Neutral Cure

Property	Test Method	GE Silicones RTV5220	RTV5240	RTV5810	RTV6700	Dow Corning DC737	DC738	Shin-Etsu KE347	KE1830	Rhone Poulenc 450NC
Application rate, g/min	—	185	300	360	175	390	350	5000 psi	160,000 psi	—
Tack-free, minutes	ASTM C-719	180	45	15	25	25	150	20	480	240
Hardness, Shore A	ASTM C-661	26	40	21	18	30	25	30	40	20
Tensile, MPa (psi)	ASTM D-412	2.6 (370)	2.2 (320)	1.8 (275)	1.57 (225)	1.8 (275)	1.2 (200)	1.8 (275)	3.7 (600)	0.8 (165)
Elongation, %	ASTM D-412	750	425	500	450	450	400	300	350	500

GE Advantage: Higher application rates, lower modulus, higher tensile, faster tack-free time, lower durometer

Acetoxy Cure

Property	Test Method	GE Silicones RTV100	RTV112	Dow Corning DC732	DC736	Shin-Etsu KE42	Rhone Poulenc CAF300	CAF410
Application rate, g/min	—	400	200	320	335	—	—	—
Tack-free, minutes	ASTM C-719	20	20	20	20	10	—	—
Hardness, Shore A	ASTM C-661	30	25	30	32	30	20	25
Tensile, MPa (psi)	ASTM D-412	2.75 (400)	2.2 (325)	1.6 (250)	2.5 (350)	2.75 (400)	1.6 (250)	2.1 (245)
Elongation, %	ASTM D-412	450	325	500	500	500	350	400

GE Advantage: Higher application rate, lower modulus, higher tensile

Heat Resistant/Thermally Conductive

Property	Test Method	GE Silicones TSE326	TSE3280G	RTV106	Dow Corning 03-6605	DC736	Shin-Etsu KE3418	Loctite 598
Application rate, g/min	—	450	—	400	—	335	—	225
Viscosity, cps	—	25,000	60,000	—	50,000	—	—	—
Cure conditions	—	150°C/1 hr. 200°C/0.5 hr.	100°C/2 hr. 150°C/1 hr.	30 min. TFT	150°C/2 hr.	—	10 min. TFT	20 min. TFT
Thermal conductivity, W/mK	—	0.41	0.88	—	0.0025*	—	—	—
Temperature range, C	—	250	250	260	200	—	250	200
Hardness, Shore A	ASTM C-661	43	61	30	65	32	40	33
Tensile, MPa (psi)	ASTM D-412	3.5 (525)	3.4 (511)	3.3 (500)	4.3 (700)	2.5 (350)	2.6 (360)	1.8 (275)
Elongation, %	ASTM D-412	170	110	400	100	500	300	300

GE Advantage: Higher temperature stability, lower modulus, higher tensile, lower durometer

* (Cal/cm²/Csec)



Small Appliance Product/Application Selector Guide

	RTV5200	RTV100 Flowable Paste	TSE326	TSE3280G TSE3281G	RTV5810	RTV6700
Key Performance Properties	<ul style="list-style-type: none"> • Fast cure • Low modulus • Primerless adhesion • Non-corrosive 	<ul style="list-style-type: none"> • High strength • Primerless adhesion • FDA compliant • UL recognition 	<ul style="list-style-type: none"> • High temperature • Non-corrosive • Flowable 	<ul style="list-style-type: none"> • Thermally conductive • Fast cure • Non-corrosive • Paste 	<ul style="list-style-type: none"> • Plastics adhesion • Fast cure • Non-corrosive • Paste 	<ul style="list-style-type: none"> • Primerless adhesion • Non-corrosive • Paste
Applications						
Coffee makers	•	•	•	•	•	
Steam irons	•	•	•		•	
Mixers & blenders	•	•		•	•	
Microwave ovens		•			•	
Vacuum cleaners	•	•			•	•
Carpet cleaners	•	•			•	•
Toaster ovens	•		•		•	

Frequently Asked Questions For The Small Appliance Market

What characteristics differentiate silicones from competing organic materials, such as polyurethanes, epoxies, and butyl rubber?

Silicones, in general, outperform non-silicone adhesives and sealants in such broad categories as flammability, weatherability, and UV stability. Their extended temperature range is substantially wider than that of organics, which means silicones maintain their adhesion and elastomeric properties in extreme cold or heat (-65°F to 400°F). If they are ever involved in a fire, they are non-flammable and non-toxic.

Are GE Silicones products cost effective?

Pound for pound, the cost of GE silicone is typically higher than that of competitive materials. However, when viewed from a “total systems cost” perspective, use of GE silicones may be more economical. Why? The extraordinary performance of GE silicone materials helps minimize field failures and inferior results. You may be able to use less of a GE silicone product than competing materials. And ease of application translates into productivity gains on the shop floor.

How are GE Silicones products applied?

GE silicone materials are easily and efficiently applied with conventional caulking guns, or by bulk and/or automated methods. GE Silicones Application Development Centers, along with the company’s regional Field Application Engineers, assist customers

with comprehensive information and recommendations on how best to utilize GE silicone products in any application.

What about agency recognition?

Various GE Silicones materials are compliant with FDA, USDA, NSF, and UL requirements, not to mention such work-related regulations as OSHA and VOC standards. Consult specific data sheets for more information, or call GE Silicones at 800.255.8886.

Do I need a different GE Silicones product for each application?

Possibly, but not likely. GE Silicones products are exceptionally versatile. They adhere to a wide variety of substrates (plastic, glass, metals, etc.), endure difficult environments (heat, dust, vibration, to name a few), and are available in a range of colors for optimum flexibility. However, always consult the application guide chart first; then call GE Silicones for a recommendation or confirmation of your choice.

What makes GE Silicones products such a great choice for small appliances?

Their performance reliability, application ease, and long-term durability result in end products that look better, stay drier, are easier and faster to assemble, last longer, and carry a better finish than products constructed with competitive materials.



To Find Out More...

Customer Service

800.332.3390

- Order entry/status
- Pricing/availability
- Samples • MSDS

Company & Product Info

- Internet address:
www.ge.com/silicones
- LJ Fulfillment Services
518.436.1085

Customer Assistance

800.255.8886

- Technical assistance/inquiries
- Application review
- Product recommendations
- Sales support

Customer Specifications

800.525.7149

- Specification inquiries
- Specification reviews

Customer Literature

- Product data sheets:
FAST FAX 800.818.7FAX
24-hour, 7-day-a-week access
Technical data sheets
- All other literature:
LJ Fulfillment Services
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- stocking orders for literature
- product line selector guides
- Industry brochures & catalogs



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LIMITED WARRANTY

GE Silicones warrants that its products will conform to GE Silicones' internal specifications at the time of application or use, provided that the product is stored in accordance with GE Silicones' recommendations and used or applied before the earliest of (1) any "Use Before Date" indicated on the product package, (2) one year from date of shipment by GE Silicones, or (3) expiration of such other period or recommended storage time stated in GE Silicones' product literature for such product. If notified in writing of a claim within six months of a product's use or application, GE Silicones will, at its option, replace, or refund the purchase price of, any GE Silicones product which does not satisfy the foregoing warranty.

THE FOREGOING SHALL CONSTITUTE THE SOLE AND EXCLUSIVE REMEDY FOR DEFECTS IN, OR FAILURE OF, ANY PRODUCT, AND THE SOLE AND EXCLUSIVE LIABILITY OF GENERAL ELECTRIC COMPANY THEREFOR. THE WARRANTY STATED ABOVE IS IN LIEU OF ALL OTHER WARRANTIES, WRITTEN OR ORAL, STATUTORY, EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

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NOTE: For many products, GE Silicones may be able to offer a more extensive, application specific warranty. For further information, contact your GE Silicones field representative.



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