

Imagine better reliability, durability, safety and energy efficiency

Commercial and home appliances

DOW



**Silicones put the
“work” in workhorse
appliances — by
optimizing long-term
performance.**



Why Dow

As humans, we ask a lot of our appliances. Please keep running — around the clock, every day, for years. Always turn on when we push those buttons. Don't leak, don't overheat, don't cost too much to run, don't fail us now.

In 1943, we developed our first silicone materials. Since then, we've continued to look for the next answer — the next way we can meet real-world challenges. It doesn't get more real than helping the world's workhorses keep working.

Why silicones

Silicones make existing materials work better — more efficiently, longer and more reliably. They fuel our imaginations and make new products possible. In a society that runs on performance and strives for sustainability, silicones are invaluable tools.

Silicones are naturally stable under a wide range of temperatures, moisture, and other environmental conditions — including those extra-tough conditions appliance electronics experience. Our silicones are unique materials with a useful temperature range from -115°C to 260°C. These materials are highly stress-relieving, with a modulus that commonly ranges from 0.01 to 10 MPa.

On top of that, our long history and in-depth knowledge of silicone chemistry allows us to create and adjust the desired material and performance properties — specifically answering your appliance manufacturing needs.

Product family	Features and benefits
Adhesives and sealants	<ul style="list-style-type: none">• Wide temperature range• Resistant to weather/environmental conditions• Good dielectric properties• Good bond strength and chemical stability• Low flammability
Hot-melt adhesives	<ul style="list-style-type: none">• Durable, primerless adhesion to most substrates• Fast "green strength" for improved productivity• Clear and black
Conformal coatings	<ul style="list-style-type: none">• Protects circuits and components from moisture, contaminants, dust and abrasion• Stress-relieving• Good dielectric properties
Thermally conductive materials	<ul style="list-style-type: none">• Improved thermal management with adhesives, compounds, elastomers and gels• Dissipates the heat of high-performance electronics
Foams	<ul style="list-style-type: none">• Formed-in-place foam gaskets• Seals out moisture, dust and air• Sound and vibration damping



DOWSIL™ and SILASTIC™ silicone adhesives and sealants

Our silicone adhesives and sealants are specially designed to provide good adhesion and bond strength to a variety of surfaces. They have a wide temperature range, and many of these materials can be used from -65°C to 232°C when fully cured.

They are virtually unaffected by weather or the environment — including moisture, ultraviolet (UV) radiation, ozone, dirt and

dust, and temperature extremes. With good chemical stability, they are ideal for use in applications exposed to harsh environments.

They have good dielectric properties over a wide range of thermal-cycling conditions. In fire conditions, DOWSIL™ silicone adhesives and sealants are reluctant to burn. In fact, some grades are exceptionally flame-retardant.

Adhesives and sealants – Appliance application examples

Glass stove top

- Sealing/bonding glass plate to frame
- Sealing frame to kitchen counter

Stovetop sealing requirements: heat resistance (up to 250°C) and hot water resistance; good adhesion; good tooling



Home refrigerator

- Sealing seams: plastic-to-plastic or plastic-to-metal
- Bonding silicone rubber gasket to cover

Refrigerator requirements: good adhesion and flexible bond at low temperatures; good adhesion to plastic, metal and silicone rubber



Washing machine

- Sealing and bonding
- Enhancing productivity with faster throughput

Washing machine cover requirements: good adhesion (developed quickly); high “green strength”; clarity



Home oven

- Bonding outer and inner windows to frame
- Sealing oven door

Oven and microwave requirements: high-temperature resistance; good adhesion to glass and painted metal



Commercial cooler

- Gap-filling and bonding with room-temperature-vulcanizing (RTV) sealant
- Seam sealing under the floorboard

Supermarket display/cooler requirements: flexible bond at low temperatures; water resistance; good adhesion to various metals, plastics and glass



Commercial kitchen equipment

- Gap-filling and bonding
- Adhesive sealing

Commercial kitchen equipment requirements: heat resistance; fluid resistance (hot water, detergents); good adhesion to various metals, plastics and glass



DOWSIL™ Hot-melt adhesives

Our family of hot-melt adhesives provides durable adhesion to most substrates — without the need for primers. These clear adhesives offer high-temperature stability and flowable, self-leveling behavior.

They can enhance productivity with fast “green strength,” helping parts move more quickly through the line.

Some members of this multipurpose adhesives family also meet FDA and NSF requirements for industrial, appliance and maintenance applications.



DOWSIL™ Conformal coatings

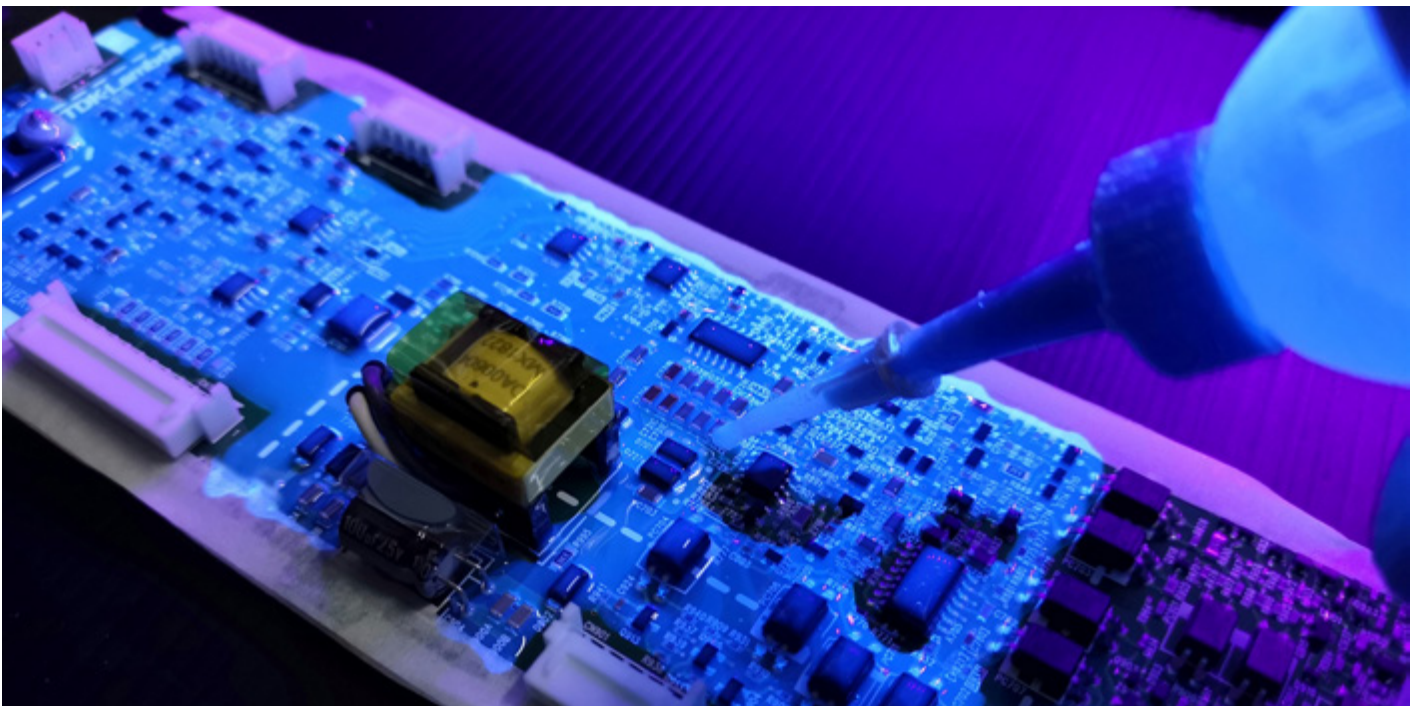
Conformal coatings are thin films and membranes that protect electronics from moisture, dirt and dust, solvents, abrasion and other environmental contaminants. These coatings help prevent short circuits and corrosion of conductors and solder joints.

Silicone conformal coatings improve reliability in humid and corrosive environments. They are stress-relieving and have good dielectric and flame-retardant properties. They can also help reduce conductor spacing on printed circuit boards (PCBs).

These coatings offer very high thermal stability and moisture resistance — better than epoxy, polyurethane and acrylic coatings. Silicones also deliver high adhesion and repairability.

When it comes to curing, our conformal coatings give you options:

- **Fast moisture cure (room temperature)** — tack-free and ready for production in less than 10 minutes (ideal for high-volume assembly)
- **Moisture cure with extended working time (room temperature)** — allows material to flow farther over large/complex boards (ideal for applications needing a thicker coating)
- **Heat cure** — full cure in less than five minutes





DOWSIL™ and SYLGARD™ Thermally conductive materials

High-functionality and high-performance appliances require higher power density, which leads to increasing temperatures. Improving thermal management is critical to maintaining long-term performance and reliability of the PCB module assembly in these applications.

Dissipate the heat and improve your design flexibility with thermally conductive adhesives, compounds, elastomers and gels from Dow.

Thermally conductive adhesives

- Bond/seal hybrid circuit substrates, semiconductor components, heat spreaders and more
- Strong bonds that dissipate heat
- From low-viscosity liquids to non-slump formulations
- Good unprimed adhesion to metals, ceramics and filled plastics
- No significant by-products during processing — can be used as structural adhesives (without mechanical fasteners) even in complete confinement
- Fill oddly shaped gaps and generate large contact areas to maximize heat transfer
- Heat cure or room-temperature moisture cure
- Cures to strong, flexible elastomer

Thermally conductive compounds

- No-cure materials that create thermal bridges to draw heat away from sensitive PCB module components
- Low thermal resistance and high thermal conductivity
- Maintains consistency at high temperatures to form positive seals with heat sinks — ensuring reliable device performance
- Able to achieve very thin bond line thickness

- Can be screen printed onto heat sinks
- Particularly suitable when heat sinks need to be removed and reattached later — or when a no-cure process is needed

Thermally conductive elastomers and gels

- A broad family of adaptable, thermal management materials for encapsulation and potting
- Available in a range of hardness and stress-relief levels
- Low viscosity before cure for easy processing
- Can fully embed tall components, delicate wires and solder joints
- Extremely low modulus after cure for superb stress-relief
- Ideal for managing high heat in complicated PCB architectures



DOWSIL™ and SILASTIC™ Silicone foams

Silicone formed-in-place foam gaskets (FIPFG) are ideal for housings for electronics and other applications where foam tape or preformed gaskets are used, including gaskets around dishwasher detergent dispensers.

These foams create an “environmental seal” against ambient air, splashed water, dust and moisture. They fill high-tolerance gaps and are available in flowable and reduced-flow formulations.

Silicone foams provide a low sealing force, low modulus, sound and vibration damping and enhanced serviceability.

The two-part RTV foams are dispensed onto the part to be sealed. The foam expands in its liquid stage and cures to a foamed solid elastomer within 10 minutes at room temperature. The cure can be faster with the addition of low heat. The resulting gasket is a low-modulus, integrated compression seal with fine cell structure.



Featured products

To start the conversation, we've included a list of key products — a preview of our complete lineup.

	Product	Cure profile	Features and benefits	Agency listing, Mil spec
Adhesives/Sealants	DOWSIL™ 3-6096 Adhesive	Rapid heat cure	One-part • Black • Designed to provide flexible yet structurally strong bonding of various substrates with dissimilar thermal expansion rates when a very fast cure is needed • Excellent adhesion to a wide range of substrates • Excellent heat resistance • Stable and flexible over wide temperature range	
	DOWSIL™ 7091 Adhesive Sealant	Room temperature when exposed to moisture in the air	One-part • Black, white, gray • Designed for applications which demand a strong but flexible bond • Excellent unprimed adhesion to a wide range of substrates • Used as a formed-in-place gasket • Stable and flexible over wide temperature range	
	DOWSIL™ 732 Multi-Purpose Sealant	Room temperature when exposed to moisture in the air	One-part • Clear, white, black, aluminum • Designed for general industrial sealing and bonding • Excellent dielectric properties • Good adhesion to many substrates • Cures to a tough, flexible rubber	MIL-A-46106 FDA 21 177.2600
	DOWSIL™ 733 Glass and Metal Sealant	Room temperature when exposed to moisture in the air	One-part • Clear, white, black, aluminum • Used for OEM bonding and sealing of appliances • Unprimed adhesion • Good resistance to weathering, vibration, moisture, ozone and extreme temperatures • Non-slumping paste • Cures to a tough, rubbery solid	FDA 21 177.2600 UL 94 HB
	DOWSIL™ 736 Heat Resistant Sealant	Condensation cure	One-part • Red • Designed for sealing and bonding applications exposed to temperatures as high as 315°C • Ideal for sealing and encapsulating heating elements in appliances, moving oven belts, industrial ovens, bag filters on smoke stacks and other critical bonding, sealing, potting, encapsulating and protective coatings where parts must perform at high temperatures	MIL-A-46106 FDA 21 177.2600
	DOWSIL™ 748 Non-Corrosive Sealant	Room temperature when exposed to moisture in the air	One-part • White • Nonslumping • Used in general-purpose bonding and sealing applications where low odor and noncorrosive properties are required • Cures to a tough, rubbery solid	FDA 21 177.2600 UL 94 HB
	DOWSIL™ EA-2626 Adhesive	Fast cure at room temperature	Two-part • White • Developed to provide durable adhesive/sealing for components which exhibit different thermal expansion rates and/or where fast-cure requirements make one-part RTV adhesives inappropriate • Fast cure in depth; not outside inward • Non self-leveling paste	
	DOWSIL™ HM-2600 Silicone Assembly Sealant	Neutral cure RTV	One-part • Clear • Hot-melt adhesive designed for use as an assembly sealant • Instant green strength delivers improved productivity in assembly applications • Low VOC • Primerless adhesion to common substrates • Can be used with standard hot-melt equipment	
	DOWSIL™ Q3-1566 Heat Resistant Adhesive/Sealant	Room temperature when exposed to moisture in the air	One-part • Black • Can be used in ovens, cookers and other heating equipment • Non-sag paste consistency • Good adhesion to many substrates	
	DOWSIL™ EA-3838 Fast Adhesive	Very fast cure at room temperature	Two-part • Black • Developed to provide a very fast cure and early adhesion development at room temperature for components which must perform in difficult environments • Primerless adhesion to a wide variety of substrates • Thixotropic • Suited for appliances manufacturing	
	SILASTIC™ Q3-3636 Adhesive	Fast cure at room temperature	Two-part • Black • Developed to provide durable adhesive/sealing of components which must perform in difficult environments • Adhesion to a wide variety of substrates • Thorough cure not outside inward • Thixotropic • Low fogging • Suited for appliances manufacturing, especially for oven and ceramic hob assembly, for bonding glass to metal, glass to painted metal or glass to plastic	

	Product	Cure profile	Features and benefits	Agency listing, Mil spec
Conformal coatings	DOWSIL™ CC-3122 Conformal Coating	Room temperature with optional heat acceleration	One-part • UV indicator for inspection • No added solvents • Low viscosity enhances flow and fill in narrow gaps and spaces	
	DOWSIL™ CC-8030 UV and Moisture Dual Cure Conformal Coating	UV and moisture dual cure	One-part • No added solvents, BTX solventless • Low viscosity, sprayable • Fast primary UV cure • Secondary moisture cure for shadowed areas • Non-oxygen inhibited formulation • Elastomeric formulation improves reliability against stress • Low modulus for delicate components • UV indicator allows for easy or automated inspection	UL 746E UL 94 pending IPC-CC-830 pending
	DOWSIL™ 1-2577 Low VOC Conformal Coating	Room temperature with optional mild heat acceleration	One-part • Translucent • Low VOCs • Medium viscosity • UV indicator for inspection • Cures to tough, elastoplastic resilient, abrasion resistant surface • Solvent-borne resin coating with much lower odor • Suitable for use as a protective coating for rigid and flexible circuit boards and for PCB system printed wiring board (PWB) applications	UL-94 V-0 UL 746E IPC-CC-830, Amend 1 Mil-I-46058C, Amend 7
	DOWSIL™ 1-2620 Low VOC Conformal Coating	Room temperature with optional mild heat acceleration	One-part • Transparent • Low viscosity • Low VOC version of DOWSIL™ 1-2620 Conformal Coating • Cures to tough, elastoplastic, resilient, abrasion resistant surface • UV indicator allows for automated inspection	UL 94 V-0 UL 746E IPC-CC-830, Amend 1 Mil-I-46058C, Amend 7
	DOWSIL™ 1-4105 Conformal Coating	Fast heat cure	One-part • Clear • Low viscosity • UV indicator allows for automated inspection • Suitable for use as a protective coating for rigid and flexible circuit boards • Cures to soft, low stress elastomer	UL 94 V-1
	DOWSIL™ 3-1944 RTV Coating	Room temperature with optional heat acceleration	One-part • Translucent • Moderate flow • Fast tack-free • Good flowability • Good flame resistance • Pin/solder joint coverage • UV indicator allows for automated inspection	UL 94 V-0 UL 746E IPC-CC-830B Mil I-46058C, Amend 7
	DOWSIL™ 3-1953 Conformal Coating	Fast moisture RTV with mild heat acceleration possible	One-part • Translucent • Soft, stress-relieving • Medium viscosity • UV indicator allows for automated inspection • Suitable for lighting, industrial and automotive industries requiring various reliability standards as a coating for rigid and flexible circuit boards, sensitive components and fine pitched designs	UL 94 V-0 UL 746E IPC-CC-830A, Amend 1 Mil I-46058C, Amend 7
	DOWSIL™ 3-1965 Conformal Coating	Room temperature with optional mild heat acceleration	One-part • Clear • Low viscosity • UV indicator for inspection • Cures to soft, low stress elastomer • Suitable for use with rigid and flexible circuit boards, printed wiring boards (PWB) and sensitive components, and fine pitch designs	UL 94 V-0 IPC-CC-830, Amend 1 Mil-I-46058C, Amend 7

	Product	Cure profile	Features and benefits	Agency listing, Mil spec
Thermally conductive materials	DOWSIL™ 1-4173 Thermally Conductive Adhesive	Heat cure	One-part • Gray • High tensile strength • Able to flow, fill or self-leveling after dispensing • Suitable for bonding integrated circuit substrates, adhering lids and housings, base plate attach and heat sink attach	UL 94 V-0
	DOWSIL™ 1-4174 Thermally Conductive Adhesive	Heat cure	One-part • Gray • High tensile strength and 7 mil glass beads • Able to flow, fill or self-leveling after dispensing • Suitable for bonding integrated circuit substrates, adhering lids and housings, base plate attach and heat sink attach	UL 94 V-0
	DOWSIL™ 340 Heat Sink Compound	Non-curing, non-flowing	One-part • White • Suitable for thermal coupling of electrical devices and PCB assemblies to heat sinks • Moderate thermal conductivity	Compliant with MIL-DTL-47113
	DOWSIL™ Q1-9226 Thermally Conductive Adhesive	Accelerated heat cure	Two-part • Gray • Semi-flowable • Typical applications include bonding organic and ceramic substrates to heat sinks for electronic control modules	
	DOWSIL™ SE 4486 RTV Adhesive	Moisture cure	One-part • White • Highly flowable • Fast tack-free • Controlled volatility • Designed to provide efficient thermal transfer for the cooling of electronic modules, including home appliance devices	
	DOWSIL™ TC-2035 Thermally Conductive Adhesive	Heat cure	Two-part • Reddish-brown • Low bond line thickness • Designed to provide long-term bonding and efficient thermal flow, especially where low bond line thickness is required to enhance thermal conductivity • Bonding organic and ceramic substrates (i.e. PCB, HDI, DBC) to heat sinks for transmission modules, power modules and conversion modules	
	DOWSIL™ TC-5026 Thermally Conductive Compound	Non curing	One-part • Gray • Flowable • Designed to provide efficient thermal transfer for the cooling of MPU in servers, desktops, notebooks and game consoles	
	DOWSIL™ TC-5080 Thermal Grease	Non curing	One-part • White • Suitable for use as a thermal interface material for lighting assemblies, telecom equipment, consumer electronics, power supplies and power components for transportation	
	DOWSIL™ TC-5622 Thermally Conductive Compound	Non curing	One-part • Gray • Grease-like silicone material • Heavily filled with heat-conductive metal oxides • Promotes high thermal conductivity, low bleed and high-temperature stability • Designed to provide efficient thermal transfer for the cooling of modules, including computer MPUs and power modules	
Foams	DOWSIL™ TC-5888 Thermally Conductive Compound	Non curing	One-part • Gray • Thixotropic • Designed to provide efficient thermal transfer for the cooling of modules, including computer MPUs and power modules • Easy application • Screen printable	
	SYLGARD™ Q3-3600 Thermally Conductive Encapsulant	Heat cure	Two-part • Gray • Low viscosity • Flame resistance • Good working time • Highly flowable • Self-leveling • Designed to provide efficient thermal transfer for the cooling of components in automotive and industrial applications	UL 94 V-1
	DOWSIL™ 3-8209 Silicone Foam	Room temperature	Two-part • Dark gray • Low to medium hardness • Designed to be dispensed and cured directly on parts to form an integrated compression gasket • Primarily developed as a dispensed 'foamed-in-place' gasket material for the automotive and industrial assembly and maintenance industries • Typical applications include automotive parts, housings for electric devices, exterior lighting and domestic appliance components	
	DOWSIL™ 3-8219 RF Silicone Foam	Room temperature	Two-part • Dark gray • Medium hardness • Designed to be dispensed and cured directly on parts to form an integrated compression gasket • Stable and flexible over a wide temperature range • Reduced flow aids application to inclined surfaces • Low compression set which is retained at high service temperatures	
	DOWSIL™ 3-8259 RF Silicone Foam	Room temperature	Two-part • Gray • Medium hardness • Designed to be dispensed and cured directly on parts to form an integrated compression gasket • Stable and flexible over a wide temperature range • Reduced flow aids application to inclined surfaces • Low compression set which is retained at high service temperatures	
	SILASTIC™ 8257 Silicone Foam	Fast room temperature	Two-part • Black • Low hardness (Shore 00) • Designed to be dispensed and cured directly on parts to form an integrated compression gasket • Typical applications include automotive parts, housings for electric devices, exterior lighting, domestic appliance components and tile-printing-rollers	
	DOWSIL™ 3-8235 RTV Foam	Room temperature	Two-part • White • Low to medium hardness (Shore 00) • Low density • Can be pigmented	FDA 21 177.2600 FDA 21 177.1210 UL 94 V-1



Discover more

We bring more than just an industry-leading portfolio of advanced silicone-based materials. As your dedicated innovation leader, we bring proven process and application expertise, a network of technical experts, a reliable global supply base, and world-class customer service.

To find out how we can support your applications, visit dow.com/electronics.



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