Information About *Dow Corning*® Brand Conformal Coatings

Silicones and Electronics

Long-term, reliable protection of sensitive circuits and components has become increasingly more important in many delicate and demanding electronic applications. Silicones function over a wide temperature and humidity range as durable dielectric insulation, as barriers against environmental contaminants, and as stress-relieving shock and vibration absorbers. In addition to sustaining their physical and electrical properties over a broad range of operating conditions, silicones are resistant to ozone and ultraviolet degradation and have good chemical stability. Most Dow Corning silicones contain significantly less solvent than organic coatings and are available in a wide variety of cure systems.

Conformal Coatings

Conformal coatings are materials applied in thin layers (typically a few mils or microns) onto printed circuits or other electronic substrates. They provide environmental and mechanical protection to significantly extend the life of the components and circuitry. Conformal coatings are traditionally applied by dipping, spraying, or simple flow coating, and increasingly by select coating, or robotic dispensing.

Conformal coatings protect electronic printed circuit boards from moisture and contaminants, preventing short circuits and corrosion of conductors and solder joints. They also minimize dendritic growth and the electromigration of metal between conductors. In addition, the use of conformal coatings protects circuits and components from abrasion and solvents. Stress relief is also provided, as is protection of the insulation resistance of the circuit board.

Dow Corning coatings are particularly useful for protecting circuitry in severe-service environments, while maintaining a low-stress environment for components and connections. These severe environments range from everyday temperature and humidity extremes seen in consumer electronics to the more harsh automotive under-hood environment, up to the extreme conditions demanded in military or industrial applications. Recently Dow Corning coatings have also been used in a variety of consumer appliances and devices to protect against unpredicted conditions imposed by the end user. The coatings are supplied in a variety of forms that can be cured at room temperature or accelerated by heat, adaptable to your processing needs. Most conformal coatings contain a UV indicator enabling blacklight visualization of the coating.

Dow Corning® Conformal Coatings are supplied in three product families:

- **Solventless RTV elastomeric conformal coatings** require atmospheric moisture to cure. This family of coatings is rapidly gaining popularity because it is more environmentally friendly than solvent-based materials. Further, its rapid cure rates can be dramatically accelerated by mild heat, plus it is reworkable and cost effective. These elastomers, when cured, offer the optimum stress relief for components and interconnections in a variety of service environments. Coatings manufactured for controlled volatility are offered for applications where low outgassing at package level or in confined environments is necessary.

- **Solventless heat cure conformal coatings** are designed for rapid processing at moderate temps (above 100°C). They require some heating to cure, offering long bath life at room temperature. Like the room-temperature-curing elastomers, these products offer optimum stress relief for components and interconnections in a variety of service environments.

- **RTV elastoplastic conformal coatings** have firm, dry surfaces for better handling and abrasion resistance after cure. They require atmospheric moisture to cure and their cure rates can be accelerated by mild heat. They are supplied in solvent, with low-VOC versions available.

Fast Formulation

Dow Corning manufactures a wide variety of coatings to meet the needs of most application and process situations, and we are continuously expanding the product offerings in each of these families to ensure that there are specific products to meet your needs. However, if you can't find an exact match for your needs, Dow Corning can modify any of our existing products to help meet your exact needs through our *Fast Formulation* process. Examples of *Fast Formulation* options include modification of a product's cure schedule,

modulus, viscosity, or color, or adding an inert intermediate such as UV indicator – all in a timely manner.

Total Support

Product Finder – Dow Corning features a unique interactive product finder on our website that can help you select the right materials for your applications. You can access the product finder at www.dowcorning.com/electronics by selecting "Technical Data" on any of our product family pages.

Production of Prototype Coated Boards or Process Design – We can produce coated boards or test patterns for early evaluation of a coating's protective abilities. Coatings will be applied simulating your own process of spraying, dipping, or flow coating. Based on our extensive industry experience, we can advise you on the best methods and conditions for your process.

Analytical, Environmental, and Physical Testing – We have expertise to share on a wide range of testing to monitor quality, on specialized testing for troubleshooting, or to simulate accelerated service conditions.

Equipment Recommendations – Through many years of providing materials for electronics protection, Dow Corning has developed strong alliances with key equipment suppliers worldwide. We have just launched the *External Equipment Provider Alliance* with nine leading companies, including PVA and Asymtek for conformal coatings. Save time and expense by taking advantage of these alliances to ensure the optimum integration of material and processing.

Consultation with Technical Experts – Have our experts visit your facility or join us at one of our global application centers to work together on your material and processing needs. We can provide seminars and training for your personnel to allow them to work more knowledgeably. With material, process, and equipment integration solutions from Dow Corning, you can manufacture more modules and assemblies in less time, at less cost, with fewer shutdowns and fewer customer rejects.

Tutorials – Conformal coating tutorials, including an overview and a processing tutorial, can be found on our website. The tutorials are accessible from the product family pages or the left-hand navigation bar under Technical Library.

Solventless RTV Elastomeric Conformal Coatings

Type
Solventless, one-part, non-corrosive, RTV moisture-curing, silicone elastomers; most are fast cure

Physical Form
Translucent liquids; available in different viscosities

Special Properties
Can be accelerated with mild heat to provide very fast cure times; transparent to translucent; resist humidity and other harsh environments; good dielectric properties; available in controlled volatility for very sensitive applications such as relays, certain electric motors, potentiometers, and optical devices

Primary Uses
Low-stress protective coatings for rigid and flexible PCBs; frequently used as a more environmentally friendly alternative to organic coatings

Solventless Heat Cure Conformal Coatings

Type
One-part solventless silicone elastomers

Physical Form
Translucent liquids; available in different viscosities; heat cure to low-stress elastomeric films

Special Properties
Fast thermal cure; transparent; resist humidity and other harsh environments; good dielectric properties; self-priming adhesion

Primary Uses
Protective coatings for rigid and flexible printed circuit boards; resist humidity and other harsh environments; frequently used as a more environmentally friendly alternative to organic coatings

RTV Elastoplastic Conformal Coatings

Type
One-part RTV silicone resins

Physical Form
Translucent liquids; available in traditional or OS solvent dilutions; cure to clear elastoplastic resin films

Special Properties
Can be accelerated with mild heat to provide faster cure times; abrasion resistant; resist humidity and other harsh environments; good dielectric properties

Primary Uses
Abrasion-resistant protective coatings for rigid and flexible PWBs, plus a variety of ceramic and hybrid circuits, components, connectors, and connections

Product/Application Information

POT LIFE AND CURE RATE

The pot life of *Dow Corning* RTV Conformal Coatings is dependent on the application method chosen. To extend pot life, minimize exposure to moisture by using dry air or dry nitrogen blanketing whenever possible.

The pot life of *Dow Corning* Heat Cure Conformal Coatings is also dependent on the conditions in which they are processed, but is typically greater than 2 months. Dip tanks or containers should be closed and sealed when not in use. To maximize pot life, tank temperatures should be maintained at less than 29°C (85°F).

REPAIRABILITY

In the manufacture of electronic devices, it is often desirable to salvage or reclaim damaged or defective units. *Dow Corning* Conformal Coatings offer excellent repairability because they can be removed from substrates and circuitry by scraping or cutting, or by using solvents or stripping agents. If only one circuit component is to be replaced, a soldering iron may be applied directly through the coating to remove the component.

After the circuit board has been repaired, the area should be cleaned by brushing or by using solvent, then dried and recoated with the original coating, as the coatings have very good adhesion to themselves. Heat cure coatings can be repaired with RTV coatings, but heat cure coatings may not work well when used to repair RTV coatings.

COMPATIBILITY

Certain materials, chemicals, curing agents, and plasticizers can inhibit the cure of *Dow Corning*® Q1-4010 Conformal Coating and *Dow Corning*® 1-4105 Conformal Coating. Most notable of these include:

- Organotin and other organometallic compounds
- Silicone rubber containing organotin catalyst
- Sulfur, polysulfides, polysulfones, or other sulfur-containing material
- Amines, urethanes, or amine-containing materials
- Phosphorus or phosphorus-containing materials
- Unsaturated hydrocarbon plasticizers
- Some solder flux residues

If a substrate or material is questionable with respect to potentially causing inhibition of cure, it is recommended that a small scale compatibility test be run to ascertain suitability in a given application. The presence of liquid or uncured product at the interface between the questionable substrate and the cured conformal coating indicates incompatibility and inhibition of cure.

Dow Corning Conformal Coatings have shown good compatibility with no- or low-lead solder residue.

ADHESION

Dow Corning Conformal Coatings are formulated to provide adhesion to most common electronic substrates and materials including adhesion to most low-solids (no clean) and no-lead solder flux residues. With heat-cure coatings, the adhesion is complete with the full cure time and temperature. With RTV cure coatings, adhesion typically lags behind cure and may take 72 hours to build in some coatings. On certain difficult, low-surface-energy surfaces, adhesion may be improved by priming or by special surface treatment such as chemical or plasma etching.

USEFUL TEMPERATURE RANGES

For most uses, silicone elastomers (including *Dow Corning*® 3-1753 Conformal Coating, *Dow Corning*® 3-1765 Conformal Coating, *Dow Corning*® 3-1744 Conformal Coating, *Dow Corning*® 3-1953 Conformal Coating, *Dow Corning*® 3-1965 Conformal Coating, *Dow Corning*® 3-1944 Conformal Coating, *Dow Corning*® 3140 RTV Coating, *Dow Corning*® Q1-4010 Conformal Coating, *Dow Corning*® 1-4105 Conformal Coating) should be operational over a temperature range of -45 to 200°C (-49 to 392°F) for long periods. However, at both the low- and high-temperature ends of the spectrum, behavior of the materials and performance in particular applications can become more complex and require additional considerations.

For low-temperature performance, thermal cycling to conditions such as -55°C (-67°F) may be possible, but performance should be verified for your parts or assemblies. Factors that may influence performance are configuration and stress sensitivity of components, cooling rates and hold times, and prior temperature history. RTV elastoplastic coatings maintain performance at -65°C (-85°F) and below.

At the high-temperature end, the durability of the cured silicone elastomer is time and temperature dependent. As expected, the higher the temperature, the shorter the time the material will remain useable.

STORAGE AND SHELF LIFE

Storage conditions and shelf life ("Use by" date) are indicated on the product label.

Special precautions must be taken to prevent moisture from contacting *Dow Corning* RTV Conformal Coatings. Containers should be kept tightly closed and head or air space minimized. Partially filled containers should be purged with dry air or other gases, such as nitrogen.

LIMITATIONS

These products are neither tested nor represented as suitable for medical or pharmaceutical uses.

continues on page 10

PRODUCT INFORMATION

Product	Description	Features
Solventless RTV Elastomeric Conformal Coatings		
Dow Corning® 3-1753 Conformal Coating[1]	1-part, transparent, medium-viscosity conformal coating; UL, IPC, and Mil Spec approved/recognized	Medium viscosity; room-temperature cure with optional heat acceleration; cures to soft, low-stress elastomer; UL 94V-1 recognized and Mil Spec approved; IPC-CC-830; UV indicator for inspection; no added solvents
Dow Corning® 3-1765 Conformal Coating[1]	1-part, transparent, low-viscosity conformal coating; UL, IPC, and Mil Spec approved/recognized	Low viscosity; room-temperature cure with optional heat acceleration; cures to soft, low-stress elastomer; UL 94V-1 recognized and Mil Spec approved; IPC-CC-830; UV indicator for inspection; no added solvents
Dow Corning® 3-1744 Conformal Coating[1]	1-part, translucent, flowable conformal coating; UL, IPC, and Mil Spec approved/recognized	Flowable; room-temperature cure with optional heat acceleration; cures to soft, low-stress elastomer; UL 94V-0 recognized and Mil Spec approved; IPC-CC-830; UV indicator for inspection; no added solvents
Dow Corning® 3-1953 Conformal Coating	1-part, transparent, medium-viscosity conformal coating; UL, IPC, and Mil Spec approved/recognized	Medium viscosity; room-temperature cure with optional heat acceleration; cures to soft, low-stress elastomer; UL 94V-0 recognized and Mil Spec approved; IPC-CC-830; UV indicator for inspection; no added solvents
Dow Corning® 3-1965 Conformal Coating	1-part, transparent, low-viscosity conformal coating; UL, IPC, and Mil Spec approved/recognized	Low viscosity; room-temperature cure with optional heat acceleration; cures to soft, low-stress elastomer; UL 94V-0 recognized and Mil Spec approved; IPC-CC-830; UV indicator for inspection; no added solvents
Dow Corning® 3-1944 Conformal Coating	1-part, translucent conformal coating or adhesive with added UV indicator; good flowability; fast tack-free time; good flame resistance; MIL-A-46058 approved/recognized	Flowable; room-temperature cure with optional heat acceleration; cures to soft, low-stress elastomer; UL 94V-0 recognized and Mil Spec approved; IPC-CC-830; UV indicator for inspection; no added solvents
Dow Corning® 3140 RTV Coating	1-part, translucent coating; good flowability; good flame resistance; UL, IPC, and Mil Spec approved/recognized	Good flowability; room-temperature cure; no added solvents; UV indicator for inspection; UL 94V-1 recognized, IPC-CC-830, and MIL-A-46146
Dow Corning® HC 1000	1-part, gray, fast tack-free conformal coating with controlled volatility; high viscosity and good flame resistance	Fast tack-free room-temperature cure; high viscosity; cures to soft, low-stress elastomer; pigmented to hinder component identification; UL 94 V-0 flammability rating; controlled silicone volatility; no added solvents
Dow Corning® HC 1100	1-part, gray, fast tack-free conformal coating with controlled volatility; medium viscosity	Fast tack-free room-temperature cure; medium viscosity; cures to soft, low-stress elastomer; pigmented to hinder component identification; controlled silicone volatility; no added solvents
Dow Corning® HC 2000	1-part, translucent; fast tack-free flowable conformal coating with controlled volatility	Fast tack-free room-temperature cure; flowable; cures to soft, low-stress elastomer; controlled silicone volatility; no added solvents
Dow Corning® HC 2100	1-part, translucent, fast tack-free high-viscosity conformal coating with controlled volatility	Fast tack-free room-temperature cure; high viscosity; cures to soft, low-stress elastomer; controlled silicone volatility
Dow Corning® SE 9157	1-part, translucent, fast tack-free medium-viscosity conformal coating	Fast tack-free room-temperature cure; medium viscosity; cures to soft, low-stress elastomer; no added solvents
Dow Corning® SE 9186 L	1-part, translucent or black, fast tack-free flowable conformal coating with controlled volatility	Fast tack-free room-temperature cure; flowable; cures to soft, low-stress elastomer; black version is pigmented to hinder component identification; controlled silicone volatility; no added solvents
Dow Corning® SE 9187 L	1-part, translucent or black, fast tack-free low-viscosity conformal coating with controlled volatility and good flame resistance	Fast tack-free room-temperature cure; low viscosity; cures to soft, low-stress elastomer; black version is pigmented to hinder component identification; UL 94 HB flammability rating; controlled silicone volatility; no added solvents
Dow Corning® SE 9189 L RTV	1-part, white or gray, fast tack-free flowable-viscosity conformal coating with controlled volatility and good flame resistance	Fast tack-free room-temperature cure; flowable; cures to soft, low-stress elastomer; pigmented to hinder component identification; UL 94 V-0 flammability rating; controlled silicone volatility; no added solvents

[1]Not available in Europe.

Product	Potential Uses	Application Methods	Cure
Solventless RTV Elastomeric Conformal Coatings			
Dow Corning® 3-1753 Conformal Coating[1]	Protective coating for rigid and flexible circuit boards. These fast-curing, one-part, self-priming coatings cure to flexible, transparent elastomers ideally suited for electronic printed wiring board (PWB) applications, particularly those employing sensitive components and fine pitch designs.	Applied by spray, brush, flow or some automated pattern coating. May be dip coated with special precautions.	Time to cure is dependent on several variables including the method of application, film thickness, temperature and humidity. Tack-free time in the data table gives an indication of typical times until surface is dry enough to handle. Cure time for full cure are indications of time needed to develop full physical properties such as durometer, tensile strength or adhesion. These times, including full cure time, can be significantly improved by introducing mild heat of 60°C or less.
Dow Corning® 3-1765 Conformal Coating[1]		Applied by spray, brush, flow or automated pattern coating requiring lower viscosity material. May be dip coated with special precautions.	
Dow Corning® 3-1744 Conformal Coating[1]	Designed to provide excellent pin/solder joint coverage and thin-section encapsulation. This fast-curing, one-part, self-priming coating cures to a flexible, translucent elastomer.	Applied by brush or flow coating or syringe dispensed for spot protection of pins or other devices.	
Dow Corning® 3-1953 Conformal Coating	Protective coating for rigid and flexible circuit boards. These fast curing, one-part, self- priming coatings cure to flexible, transparent elastomers ideally suited for electronic printed wiring board (PWB) applications, particularly those employing sensitive components and fine pitch designs.	Applied by spray, brush, flow or some automated pattern coating. May be dip coated with special precautions.	
Dow Corning® 3-1965 Conformal Coating		Applied by spray, brush, flow or automated pattern coating requiring lower viscosity material. May be dip coated with special precautions.	
Dow Corning® 3-1944 Conformal Coating	Designed to provide excellent pin/solder joint coverage and thin section encapsulation. This fast-curing, one-part, self-priming coating cures to a flexible, translucent elastomer.	Applied by brush or flow coating or syringe dispensed for spot protection of pins or other devices.	
Dow Corning® 3140 RTV Coating	Supplied at a higher viscosity, this material cures to a tough, durable elastomer for improved pin/solder joint coverage and thin-section encapsulation.		
Dow Corning® HC 1000	Protective coating for rigid and flexible circuit boards, connectors, electronic components, or sensors; fast tack-free cure, highly controlled volatility for use around relays, brush motors, and high-tolerance devices (HDD, DVD, CD).	Applied by syringe dispense, brush or flow coating.	
Dow Corning® HC 1100			
Dow Corning® HC 2000		Applied by spray, brush, flow or some automated pattern coating. May be dip coated with special precautions.	
Dow Corning® HC 2100			
Dow Corning® SE 9157	Protective coating for rigid and flexible circuit boards, connectors, electronic components, or sensors; fast tack-free cure.		
Dow Corning® SE 9186 L	Protective coating for rigid and flexible circuit boards, connectors, electronic components, or sensors; fast tack-free cure, highly controlled volatility for use around relays and high-tolerance devices (HDD, DVD, CD).	Applied by syringe dispense, brush or flow coating.	
Dow Corning® SE 9187 L		Applied by spray, brush, flow or some automated pattern coating. May be dip coated with special precaustions.	
Dow Corning® SE 9189 L RTV		Applied by syringe dispense, brush or flow coating.	

PRODUCT INFORMATION (Continued)

Product	Description	Features
Solventless Heat Cure Conformal Coatings		
Dow Corning® CC-4555 Long Bath Life Conformal Coating	1 part, transparent, low-viscosity conformal coating	Low viscosity, fast low-temperature heat cure with very long bath life; cures to low-stress elastomer
Dow Corning® Q1-4010 Conformal Coating	1-part, transparent, medium-viscosity conformal coating	Medium viscosity; fast, low-temperature heat cure; cures to soft, low-stress elastomer; no added solvents; UV indicator for inspection; UL V-1 flammability rating; Mil Spec 46058C tested
Dow Corning® 1-4105 Conformal Coating	1-part, transparent, low-viscosity conformal coating	Low viscosity; fast, low-temperature heat cure; cures to soft, low-stress elastomer; no added solvents; UV indicator for inspection; UL V-1 flammability rating
Sylgard® 1-4128 Conformal Coating Kit	2-part version of 1-4105 Conformal Coating	Low viscosity; fast, low-temperature heat cure; cures to soft, low-stress elastomer; no added solvents; UV indicator for inspection; mixing on-site extends shelf life
RTV Elastoplastic Conformal Coatings		
Dow Corning® 1-2577 RTV Coating	1-part, transparent, medium-viscosity conformal coating with firm, abrasion resistant surface after cure	Cures to tough, resilient, abrasion-resistant surface; solvent-borne resin coating; room-temperature cure with optional heat acceleration after solvent flash-off; UV indicator for inspection; UL V-0 flammability rating; Mil Spec 46058C and IPC-CC-830B tested
Dow Corning® 1-2577 Low VOC RTV Coating	1-part, transparent, medium-viscosity conformal coating with reduced VOC content and a firm, abrasion resistant surface after cure	Cures to tough, resilient, abrasion-resistant surface; solvent-borne resin coating with much lower odor; reduced VOC content as measured by certain U.S. state standards; more environmentally and worker friendly; room-temperature cure with optional heat acceleration after solvent flash-off; UV indicator for inspection; UL V-0 flammability rating; IPC-CC-830 tested; Mil Spec 46058C tested
Dow Corning® 1-2620 RTV Coating	1-part, transparent, low-viscosity conformal coating with firm, abrasion resistant surface after cure	Cures to tough, resilient, abrasion-resistant surface; solvent-borne resin coating; room-temperature cure with optional heat acceleration after solvent flash-off; UV indicator for inspection; UL V-0 flammability rating; Mil Spec 46058C tested
Dow Corning® 1-2620 Low VOC RTV Coating	1-part, transparent, low-viscosity conformal coating with reduced VOC content and a firm, abrasion resistant surface after cure	Cures to tough, resilient, abrasion-resistant surface; solvent-borne resin coating with much lower odor; reduced VOC content as measured by certain U.S. state standards; more environmentally and worker friendly; room-temperature cure with optional heat acceleration after solvent flash-off; UV indicator for inspection; UL V-0 flammability rating; IPC-CC-830 tested; Mil Spec 46058C tested

Product	Potential Uses	Application Methods	Cure
Solventless Heat Cure Conformal Coatings			
Dow Corning® CC-4555 Long Bath Life Conformal Coating	Protective coating for rigid and flexible circuit boards. These heat cure, one-part, self-priming coatings cure to flexible, transparent elastomers ideally suited for electronic printed wiring board (PWB) applications, particularly those employing sensitive components and fine pitch designs.	Applied by dip, spray, brush, flow or automated pattern coating. The stable bath life of these materials makes them ideal for dip coating applications.	Time to cure is dependent on film thickness, type of oven, and board population density. Heat cure time in the data table gives an indication of typical times after the coating is heated to the temperature indicated. Highly populated, large, heavy boards may take longer than the indicated times due to the large thermal mass taking extra time to warm.
Dow Corning® Q1-4010 Conformal Coating			
Dow Corning® 1-4105 Conformal Coating			
Sylgard® 1-4128 Conformal Coating Kit			
RTV Elastoplastic Conformal Coatings			
Dow Corning® 1-2577 RTV Coating	Protective coating for rigid and flexible circuit boards. These one-part, self-priming coatings cure to flexible, transparent elastoplastic coatings ideally suited for electronic printed wiring board (PWB) applications, particularly those requiring toughness and abrasion resistance.	Applied by spray, brush, flow, dip or automated pattern coating. For spraying operations, solvent dilution of up to 60% is recommended. For dip coating operations, material may be used as supplied or solvent diluted if a thinner film build is desired. Care should be taken to ensure the solvent is free from moisture and dip tanks should be covered when not in use. For dilution of low VOC coatings, *Dow Corning*® OS-20 Fluid is recommended.	The time required to reach a tack-free state can be reduced with heat. When using heat for this purpose, allow adequate time for the solvent to evaporate prior to exposing to elevated temperatures in an air circulating oven. A typical cure schedule for 3 mil (75 micron) coatings is 10 minutes at room temperature, followed by 10 minutes at 80°C. If the coating blisters or contains bubbles, allow additional time at room temperature for the solvent to flash off prior to oven cure.
Dow Corning® 1-2577 Low VOC RTV Coating			
Dow Corning® 1-2620 RTV Coating			
Dow Corning® 1-2620 Low VOC RTV Coating			

TYPICAL PROPERTIES

Specification Writers: Please contact your local Dow Corning sales office or your Global Dow Corning Connection before writing specifications on these products.

Product	Product Form	Color	Viscosity, centipoise or mPa•s	Durometer	Specific Gravity, cured	RT Tack Free Time, minutes	RT Cure Time, minutes[1]	Heat Cure Time, minutes[2,3]	UL Reference[4]	
									Flammability Classification	UL 746E Approval
Solventless RTV Elastomeric Conformal Coatings										
Dow Corning® 3-1753 Conformal Coating	1-part RTV cure	Translucent	400	26 A	0.99	7	30	1 @ 60°C/ 15% RH	94 V-1	No
Dow Corning® 3-1765 Conformal Coating	1-part RTV cure	Translucent	150	35 A	1.03	6	30	2 @ 60°C/ 15% RH	94 V-1	Yes
Dow Corning® 3-1744 Conformal Coating	1-part RTV cure	Translucent	57,675	35 A	1.04	14	60	—	94 V-0	Yes
Dow Corning® 3-1953 Conformal Coating	1-part RTV cure	Translucent	350	16 A	0.99	8	30	1.5 @ 60°C/ 15% RH	94 V-0	Yes
Dow Corning® 3-1965 Conformal Coating	1-part RTV cure	Translucent	125	29 A	0.99	7	30	2 @ 60°C/ 15% RH	94 V-0	Pending
Dow Corning® 3-1944 Conformal Coating	1-part RTV cure	Translucent	65,725	29 A	1.03	16	60	—	94 V-0	Yes
Dow Corning® 3140 RTV Coating	1-part RTV cure	Translucent	35,950	34 A	1.04	105	72 hr	NA	94 V-1	Yes
Dow Corning® HC 1000	1-part RTV cure	Gray	12,000	24 A	1.07	11	300[5]	NA	94 V-0	No
Dow Corning® HC 1100	1-part RTV cure	Gray	2,375	22 A	1.08	9	300[5]	NA	—	No
Dow Corning® HC 2000	1-part RTV cure	Translucent	130	25 A	1.01	15	90[6]	NA	—	Pending
Dow Corning® HC 2100	1-part RTV cure	Translucent	400	10 A	0.98	10	60[6]	NA	—	Pending
Dow Corning® SE 9157	1-part RTV cure	Translucent	5,675	25 A	1.00	6	30[5]	NA	—	No
Dow Corning® SE 9186L	1-part RTV cure	Translucent or Black	26,900	24 A	1.02	8	300[5]	NA	—	No
Dow Corning® SE 9187L	1-part RTV cure	Translucent, White or Black	1,100	17 A	1.00	9	30[6]	NA	94 V-0 (Translucent only)	Yes
Dow Corning® SE 9189L RTV	1-part RTV cure	White or Gray	23,300	33 A	1.19	8	360[5]	NA	94 V-0	No
Solventless Heat Cure Conformal Coatings										
Dow Corning® CC-4555 Long Bath Life Conformal Coating	1-part heat cure	Translucent	225	22 A	0.9817	NA	NA	20 @ 120°C	_	No
Dow Corning® Q1-4010 Conformal Coating	1-part heat cure	Translucent	825	33 A	1.00	NA	NA	10 @ 100°C	94 V-1	Yes
Dow Corning® 1-4105 Conformal Coating	1-part heat cure	Translucent	470	65 OO	0.97	NA	NA	10 @ 105°C	94 V-1	Yes
Sylgard® 1-4128 Conformal Coating Kit	2-part heat cure	Translucent	470	65 OO	0.97	NA	NA	10 @ 105°C	—	No
RTV Elastoplastic Conformal Coatings										
Dow Corning® 1-2577 RTV Coating	1-part RTV cure	Translucent	950	20 D	1.37[7]	7	60	2 @ 60°C/ 15% RH	94 V-0	Yes
Dow Corning® 1-2577 Low VOC RTV Coating	1-part RTV cure	Translucent	1,050	25 D	1.50[7]	6	60	2 @ 60°C/ 15% RH	94 V-0	Yes
Dow Corning® 1-2620 RTV Coating	1-part RTV cure	Translucent	150	25 D	1.00[7]	5	60	2 @ 60°C/ 15% RH	94 V-0	Yes
Dow Corning® 1-2620 Low VOC RTV Coating	1-part RTV cure	Translucent	350	25 D	1.00[7]	5	60	2 @ 60°C/ 15% RH	94 V-0	Yes

[1]Typical for a 5-mil thickness sample in 180° peel.
[2]Time to cohesive failure on a 180° peel strip. Coating strength may continue to improve with time. Thicker samples require additional cure time.
[3]To prevent bubbles or voids from forming, applications thicker than 5 mils may require a 5- to 10-minute hold time at room temperature to allow solvents to evaporate before the material is exposed to higher temperatures.
[4]Refer to Underwriters Laboratory website (www.ul.com) for RTI, minimum thickness, tested substrates and primer requirements. Dow Corning materials are listed in section QMJU2 files E81611, E92495, and E229242.

Product	Mil Spec[8]		Dielectric Strength		Dielectric Constant at 100 Hz	Dielectric Constant at 100 kHz	Dielectric Constant at 1 MHz	Volume Resistivity, ohm-cm	Dissipation Factor at 100 Hz	Dissipation Factor at 100 kHz	Dissipation Factor at 1 MHz	Shelf Life rom Date of Manufacture at RT, months
	Specification	Type, Class, Group	volts/mil	kV/mm								
Solventless RTV Elastomeric Conformal Coatings												
Dow Corning® 3-1753 Conformal Coating	MIL-I-46058C, Amend. 7	Type SR, QPL	375	15	2.51	2.5	—	1.0E+15	0.001	<0.002	—	12
Dow Corning® 3-1765 Conformal Coating	MIL-I-46058C, Amend. 7	Type SR, QPL	400	15	2.19	2.25	2.3	2.1E+15	0.001	<0.002	—	12
Dow Corning® 3-1744 Conformal Coating	MIL-I-46058C, Amend. 7	Type SR, QPL	600	23	2.56	2.55	—	2.5E+15	0.001	<0.002	—	12
Dow Corning® 3-1953 Conformal Coating	—	—	400	16	—	—	—	1.6E+15	0.0007	<0.0002	—	12
Dow Corning® 3-1965 Conformal Coating	—	—	450	18	—	—	—	5.7E+14	0.001	<0.0002	—	12
Dow Corning® 3-1944 Conformal Coating	—	—	425	17	2.67	2.73	—	1.3E+15	0.0013	<0.0002	—	12
Dow Corning® 3140 RTV Coating	MIL-I-46058C, Amend. 7	Type SR, QPL	450	18	2.52	2.52	—	2.1E+14	0.004	0.001	—	12
Dow Corning® HC 1000	—	—	525	21	—	—	3.2	2.00E+15	—	—	3.00E-03	12
Dow Corning® HC 1100	—	—	575	23	—	—	3.2	2.00E+15	—	—	3.00E-03	12
Dow Corning® HC 2000	—	—	850	33	—	—	2.7	1.00E+17	—	—	5.00E-03	12
Dow Corning® HC 2100	—	—	625	25	—	—	2.4	5.00E+15	—	—	1.00E-03	15
Dow Corning® SE 9157	—	—	675	27	—	—	2.7	4.00E+15	—	—	6.00E-04	15
Dow Corning® SE 9186L	—	—	575	23	—	—	2.7	6.00E+15	—	—	1.00E-03	15
Dow Corning® SE 9187L	—	—	500	20	—	—	2.8	3.00E+15	—	—	9.00E-04	12
Dow Corning® SE 9189L RTV	—	—	625	25	—	—	3.1	9.00E+14	—	—	4.00E-03	15
Solventless Heat Cure Conformal Coatings												
Dow Corning® CC-4555 Long Bath Life Conformal Coating	—	—	500	20	2.70	2.69	2.69	4.14E+13	0.0001	<0.0002	0.0002	6@25°C
Dow Corning® Q1-4010 Conformal Coating	MIL-I-46058C, Amend. 7	Type SR, QPL	575	23	2.85	2.63		2.1E+14	0.003	0.0003	—	12@5°C
Dow Corning® 1-4105 Conformal Coating	—	—	500	19.7	2.63	2.63		2.7E+13	0.0007	<0.0002	—	2@25°C; 7@10°C
Sylgard® 1-4128 Conformal Coating Kit	—	—	500	19.7	2.63	2.63		2.7E+13	0.0007	<0.0002	—	24
RTV Elastoplastic Conformal Coatings												
Dow Corning® 1-2577 RTV Coating	MIL-I-46058C, Amend. 7	Type SR, QPL	400	16	2.74	2.74	—	5.0E+13	0.0042	<0.0002	—	36
Dow Corning® 1-2577 Low VOC RTV Coating	MIL-I-46058C, Amend. 7	Type SR, QPL	350	13	2.34	2.33	—	1.9E+14	0.0011	0.0003	—	36
Dow Corning® 1-2620 RTV Coating	MIL-I-46058C, Amend. 7	Type SR, QPL	550	22	2.69	2.68	—	4.6E+13	0.002	0.0003	—	36
Dow Corning® 1-2620 Low VOC RTV Coating	MIL-I-46058C, Amend. 7	Type SR, QPL	400	16	2.49	2.48	—	1.05E+15	0.002	0.004	—	24

[5]1.0 mm thickness, 20°C, 55% RH.
[6]0.3 mm thickness, 20°C, 55% RH.
[7]Specific gravity is for uncured material.
[8]Coatings presently qualified to MIL-I-46058C shall also be recognized as meeting the requirements of IPC-CC-830B.

PACKAGING

In general, *Dow Corning* Conformal Coatings are supplied in nominal 0.45-, 3.6-, 18-, and 200-kg (1-, 8-, 40-, and 440-lb) containers, net weight. Not all coatings may be available in all packages and some additional packages, such as bladder packs or tubes, may be available for certain coatings and package sizes.

SAFE HANDLING INFORMATION

PRODUCT SAFETY INFORMATION REQUIRED FOR SAFE USE IS NOT INCLUDED. BEFORE HANDLING, READ PRODUCT AND MATERIAL SAFETY DATA SHEETS AND CONTAINER LABELS FOR SAFE USE, PHYSICAL AND HEALTH HAZARD INFORMATION. THE MATERIAL SAFETY DATA SHEET IS AVAILABLE FROM YOUR DOW CORNING REPRESENTATIVE, OR DISTRIBUTOR, OR BY WRITING TO DOW CORNING CUSTOMER SERVICE, OR BY CALLING (989) 496-6000.

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