



Technical Data Sheet

DOWSIL™ CC-3122 Conformal Coating

One-part, translucent, low viscosity, room-temperature-vulcanization (RTV)

Features & Benefits

- One-part
- Room temperature cure with optional heat acceleration
- UV indicator for inspection
- No added solvents
- Low viscosity enhances flow and fill in narrow gaps and spaces

Composition

- Polydimethylsiloxane

Applications

DOWSIL™ CC-3122 Conformal Coating is suitable for use with:

- Rigid circuit boards
- Electronic Printed Wiring Boards (PWB)
- Sensitive components and fine pitch design

Typical Properties

Specification Writers: These values are not intended for use in preparing specifications.

Test ¹	Property	Unit	Result
	One or two-part		One
CTM 0176	Appearance		Translucent
CTM 0050	Viscosity	mPa·s	80
CTM 0022	Specific gravity (cured)		1.03
CTM 0098	Skin-over time at 25/50% RH*	minutes	6
CTM 0099	Hardness ² , Shore A		75
CTM 0114	Dielectric strength ²	kV/mm	32
CTM 0249	Volume resistivity ²	Ohm* cm	2.3 X 10 ¹⁶

¹CTM: Corporate Test Method, copies of CTMs are available on request.

²Tested after cured at 25°C *50% RH for 7 days.

Description

Solventless RTV conformal coatings require atmospheric moisture to cure, needing no expensive ovens, and various viscosity versions facilitate different application methods. This family of coatings is rapidly gaining popularity due to its solventless formulations, its rapid cure rates that can be dramatically accelerated by mild heat, and its cost effectiveness. These elastomers, when cured, offer the optimum stress relief for even the most delicate components and interconnections in a variety of service environments.

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Processing/Curing

Time to cure is dependent on several variables including the method of application, film thickness, temperature and humidity. Skin over 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 (140°F) or less.

Application Methods

- Dip coating
- Brush flow
- Automated spraying coating

Pot Life and Cure Rate

The pot life of DOWSIL™ RTV conformal coatings is dependent on the application method chosen. To extend pot life, minimize exposure to ambient moisture by using dry air or dry nitrogen blanketing whenever possible.

ADHESION

With RTV cure coatings, adhesion typically lags behind cure and may take up to 72 hours to build in some coatings. It is recommended that the coatings be applied to clean and dry substrates prior to application. 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 conformal coatings should be operational over a temperature range of -40 to 200°C (-40 to 257°F) for long periods of time. 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 -40°C (-40°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. 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.

Handling Precautions

PRODUCT SAFETY INFORMATION REQUIRED FOR SAFE USE IS NOT INCLUDED IN THIS DOCUMENT. BEFORE HANDLING, READ PRODUCT AND SAFETY DATA SHEETS AND CONTAINER LABELS FOR SAFE USE, PHYSICAL AND HEALTH HAZARD INFORMATION. THE SAFETY DATA SHEET IS AVAILABLE ON THE DOW WEBSITE AT WWW.CONSUMER.DOW.COM, OR FROM YOUR DOW SALES APPLICATION ENGINEER, OR DISTRIBUTOR, OR BY CALLING DOW CUSTOMER SERVICE.

Usable Life and Storage

Special precautions must be taken to prevent moisture from contacting DOWSIL 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. Shelf life is indicated by the "Use Before" date found on the product label.

Limitations

This product is neither tested nor represented as suitable for medical or pharmaceutical uses.

Health And Environmental Information

To support customers in their product safety needs, Dow has an extensive Product Stewardship organization and a team of product safety and regulatory compliance specialists available in each area.

For further information, please see our website, www.consumer.dow.com or consult your local Dow representative.

How Can We Help You Today?

Tell us about your performance, design, and manufacturing challenges. Let us put our silicon-based materials expertise, application knowledge, and processing experience to work for you.

For more information about our materials and capabilities, visit www.consumer.dow.com.

To discuss how we could work together to meet your specific needs, go to www.consumer.dow.com for a contact close to your location. Dow has customer service teams, science and technology centers, application support teams, sales offices, and manufacturing sites around the globe.

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