

## Conformal Coatings

# Dow Corning® 1-2577 Low VOC RTV Coating

### FEATURES

- 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 temp 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

### BENEFITS

- RT cure, no ovens required
- Mild heat acceleration (after solvent flash-off) can speed in-line processing
- Good adhesion allows use with many low-solids (no clean) and no-lead solders
- UV indicator allows for automated inspection
- Emissions recovery may be simplified for VOC's in some U.S. states
- Can be good choice for uses requiring more toughness and abrasion resistance after cure

### POTENTIAL USES

- Protective coating for rigid and flexible circuit boards
- Ideally suited for electronic printed wiring board (PWB) applications

### APPLICATION METHODS

- Spray
- Brush
- Flow
- Dip
- Automated pattern coating

**1-part, transparent medium viscosity conformal coating with firm, abrasion resistant surface after cure**

### TYPICAL PROPERTIES

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

Property	Unit	Value
Viscosity	cP	1050
	mPa-sec	1050
	Pa-sec	1
NVC - Forced Draft Volatility	%	33.6
Flash Point	°F	70
	°C	21
Specific Gravity (Cured)	-	1.12
Specific Gravity (Uncured)	-	0.88
Tack-Free Time at 25°C	minutes	6
Tack-Free Time at 60°C/15% RH	minutes	1.5
Durometer Shore D	-	25
Shelf Life at 25°C	months	36
Agency Listing	-	IPC-CC-830B, UL 746E
UL Flammability Classification	NA	94 V-0
Mil Specification	NA	46058C Amend. 7

## **DESCRIPTION**

RTV elastoplastic conformal coatings have firm, dry surfaces for better handling and abrasion resistance after cure. Various viscosity versions facilitate different application methods. They require atmospheric moisture to cure (no ovens) and their cure rates can be accelerated by mild heat. They are supplied in solvent, with low-VOC versions available and have Mil spec, IPC-CC-830 and UL recognition. Conformal coatings are materials applied in thin layers (typically a few mils or microns) onto printed circuits or other electronic substrates. They provide proven, cost effective environmental and mechanical protection to significantly extend the life of the components and circuitry.

## **PROCESSING/CURING**

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.

## **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.

## **ADHESION**

With RTV cure coatings, adhesion typically lags behind cure and may take 72 hours to build in some coatings. Dow Corning Conformal Coatings are formulated to provide adhesion to most common electronic substrates and materials. On certain difficult, low-surface energy surfaces,

adhesion may be improved by priming or by special surface treatment such as chemical or plasma etching.

## **STORAGE AND SHELF LIFE**

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. Shelf life is indicated by the "Use Before" date found on the product label.

## **USEFUL TEMPERATURE RANGES**

For most uses, silicone elastomers should be operational over a temperature range of -45 to 200°C (-49 to 392°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 -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. 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.

## **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. Heat cure coatings can be repaired with RTV coatings, but heat cure coatings may not work well when used to repair RTV coatings.

## **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.

## **HEALTH AND ENVIRONMENTAL INFORMATION**

To support customers in their product safety needs, Dow Corning has an extensive Product Stewardship organization and a team of Product Safety and Regulatory Compliance (PS&RC) specialists available in each area. For further information, please see our website, [www.dowcorning.com](http://www.dowcorning.com), or consult your local Dow Corning representative.

## **LIMITATIONS**

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

## **LIMITED WARRANTY INFORMATION PLEASE READ CAREFULLY**

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