

## DOW CORNING® 1-2577 LV Conformal Coating

### FEATURES

- One-part
- Low viscosity dispersion in solvent
- Ease of application by spraying, dipping, brushing or flow coating
- Room temperature cure or rapid heat cure with additional catalyst
- Good adhesion
- Clear
- Stable and flexible from -50°C (-58°F) to 200°C (392°F)
- Contains a dye, fluorescent under UV light
- Excellent dielectric properties
- MIL-I-46058C

### MIL-I-46058C silicone coating

### APPLICATIONS

- Designed to provide long term coating against moisture and atmospheric contaminants especially where a low organic volatile product is preferred.
- Typical applications include: coating for ceramic and hybrid circuits, connectors, electronic components and printed circuit boards.

### TYPICAL PROPERTIES

Specification writers: These values are not intended for use in preparing specifications. Please contact your local Dow Corning sales representative prior to writing specifications on this product.

Property	Unit	Value
<b>As supplied</b>		
Color		Transparent straw
Non-volatile content	%	30
Specific gravity at 23°C (73.4°F)		0.88
Viscosity at 25°C (77°F) <sup>1</sup>	cSt	850
<b>Physical properties, cured 24 hours at 23°C (73.4°F) + 30 minutes at 80°C (176°F)</b>		
Durometer hardness, Shore D		25
Tensile strength	MPa	4.1
Elongation at break	%	60
<b>Electrical properties, cured 24 hours at 23°C (73.4°F) + 30 minutes at 80°C (176°F)</b>		
Dielectric strength, 0.05mm film	kV/mm	55
Permittivity at 100Hz		2.24
Dissipation factor at 100Hz		0.0011
Volume resistivity	Ohm.cm	0.2x10 <sup>14</sup> ☞

1. Glass capillary viscosimeter

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

ASTM: American Society for Testing and Materials.

### HOW TO USE

#### Substrate preparation

For best adhesion, the surface to be coated with DOW CORNING 1-2577 LV Conformal Coating should be clean and dry prior to application. DOW CORNING 1-2577 LV Conformal Coating has excellent adhesion on clean boards under most conditions. If increased adhesion is required, the use of DOW CORNING® 1200 OS Primer

or DOW CORNING® 1205 Primer is recommended.

#### How to apply

DOW CORNING 1-2577 LV Conformal Coating can be applied by spraying, dipping, brushing or flow coating.

DOW CORNING® OS-20 Fluid is recommended for dilution to meet specific viscosity requirements. For

example, adding 10 parts of diluent to 100 parts of DOW CORNING 1-2577 LV Conformal Coating will reduce the viscosity to approximately 150cSt.

## Curing

DOW CORNING 1-2577 LV Conformal Coating can be cured either at room temperature or by an accelerated heat cure at 75°C (167°F) to 100°C (212°F). In either case, DOW CORNING® 176 Catalyst or DOW CORNING® 9076 Catalyst can be added to improve the cure speed.

## Room temperature cure - without catalyst

DOW CORNING 1-2577 LV Conformal Coating is cured at room temperature by reaction with moisture in the air. A 0.2mm thick coating will be tack free in less than 20 minutes, allowing handling and in-process storage after 1 hour. Complete cure does not take place until 72 hours after coating. Suggested cure conditions are 23°C (73.4°F) in air with at least 50% relative humidity. Higher temperatures and relative humidities will accelerate rate of cure.

## Heat cure - without catalyst

The time required to reach a tack-free state can be reduced with heat acceleration. When using heat for this purpose, allow adequate time for the solvent to evaporate prior to exposure to elevated temperatures in an air circulating oven. A typical cure schedule for a 0.1mm thick coating is 10 minutes at room temperature followed by 10 minutes at 80°C (176°F). 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 LV Conformal Coating cures upon contact with moisture in the air. The thicker the coating, the longer the cure time. Cracks may occur in the coating if it is exposed to cold temperatures before adequate cure has developed. Boards coated with DOW CORNING 1-2577 LV Conformal Coating and exposed to 80°C (176°F) for 10 minutes should be held a minimum of 6 hours at room temperature prior to

cold testing or shipment during cold weather. Longer exposure to heat and/or exposure to temperature greater than 80°C (176°F) will reduce the required holding time necessary to prevent cracking prior to exposure to cold. Circuit boards coated with DOW CORNING 1-2577 LV Conformal Coating but not exposed to 80°C (176°F) for 10 minutes, as described previously, should be held a minimum of 48 hours at room temperature prior to exposure to cold.

## Cure - with catalyst

When applying thick films (greater than 0.25mm dry) of DOW CORNING 1-2577 LV Conformal Coating, using DOW CORNING 176 Catalyst or DOW CORNING 9076 Catalyst will reduce the time required to reach a tack-free state. For example, a coating of DOW CORNING 1-2577 LV Conformal Coating which dries to a film thickness of 0.4mm is tack free in approximately 70 minutes at 23°C (73.4°F) and 60% relative humidity when no catalyst is used. Use of DOW CORNING 176 Catalyst or DOW CORNING 9076 Catalyst at the same temperature and relative humidity reduces the tack-free time to approximately 45 minutes.

The use of DOW CORNING 176 Catalyst or DOW CORNING 9076 Catalyst improves solvent resistance and should be considered if the coating will be subjected to solvent vapours. The use of DOW CORNING 176 Catalyst or DOW CORNING 9076 Catalyst shortens the pot life of the material and is not recommended for use in dip equipment. Mixtures of DOW CORNING 1-2577 LV Conformal Coating and DOW CORNING 176 Catalyst or DOW CORNING 9076 Catalyst are usable for 7 days when stored at room temperature in a sealed container.

Use 0.5 parts of DOW CORNING 176 Catalyst or DOW CORNING 9076 Catalyst to 100 parts by weight of DOW CORNING 1-2577 LV Conformal Coating as supplied. If catalyst is being used to improve solvent resistance, exposure to 80°C (176°F) for 30 minutes is required.

Allow sufficient time for solvent evaporation prior to exposure to elevated temperatures.

## Pot life

For maximum pot life, exposure to humidity must be minimised. Proper handling can extend pot life appreciably.

## Repairability

Parts coated with DOW CORNING 1-2577 LV Conformal Coating can be repaired. Refer to the application note "Removal of Silicone Polymers", reference number 10-1148B-01.

## HANDLING PRECAUTIONS

PRODUCT SAFETY INFORMATION REQUIRED FOR SAFE USE IS NOT INCLUDED. 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 FROM YOUR LOCAL DOW CORNING SALES REPRESENTATIVE.

## USABLE LIFE AND STORAGE

When stored at or below 32°C (89.6°F) in the original unopened containers, this product has a usable life of 36 months from the date of production.

Special precautions must be taken to prevent moisture from contacting this material. Containers should be kept tightly closed and "head" or air space minimised. Partially filled containers should be purged with DRY air or other gases (Carbon Dioxide, Nitrogen).

After addition of DOW CORNING 176 Catalyst or DOW CORNING 9076 Catalyst for heat cure, the pot life is 7 to 10 days at 23°C (73.4°F).

## PACKAGING

DOW CORNING 1-2577 LV Conformal Coating is available in standard industrial container sizes. For details please refer to your Dow

Corning sales office.

## **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 Corning has an extensive Product Stewardship organization and a team of Health, Environment and Regulatory Affairs specialists available in each area.

For further information, please consult your local Dow Corning representative.

## **WARRANTY INFORMATION - PLEASE READ CAREFULLY**

The information contained herein is offered in good faith and is believed to be accurate. However, because conditions and methods of use of our products are beyond our control, this information should not be used in substitution for customer's tests to ensure that Dow Corning's products are safe, effective, and fully satisfactory for the intended end use. Dow Corning's sole warranty is that the product will meet the Dow Corning sales specifications in effect at the time of shipment. Your exclusive remedy for breach of such warranty is limited to refund of purchase price or replacement of any product shown to be other than as warranted. Dow Corning specifically disclaims any other express or implied warranty of fitness for a particular purpose or merchantability. Unless Dow Corning provides you with a specific, duly signed endorsement of fitness for use, Dow Corning disclaims liability for any incidental or consequential damages. Suggestions of use shall not be taken as inducements to infringe any patent.

