Technical Data Sheet

DOWSIL™ EA-9187L UV Silicone Conformal Coating

A one-part, medium viscosity, conformal coating that is UL approved.

Features & Benefits

- Controlled volatile content to avoid electric failure
- Ease to use - No heating, no exothermic heat during cure, no solvents
- Excellent unprimed adhesion to many substrates
- Faster in-line processing at room temperature with option for heat acceleration
- UV indicator
- UL 746C and UL 94V-0 specification

Applications

DOWSIL™ EA-9187L UV Silicone Conformal Coating is a flowable, one component neutral cure material. It is designed especially for the use in the manufacture of electrical and electronic products and component requiring high reliability, UL 746C and UL 94V-0 specification.

Application Methods

- Spray
- Brush
- Flow
- Automated pattern coating
- May be dip coated with special precautions

Typical Properties

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

Property	Unit	Result
One or Two-part		One
Appearance		Translucent
Viscosity	mPa-Sec	900
Skin over Time @25°C	minutes	9
Specific Gravity (cured)		0.98
Durometer Shore A		17
Tensile Strength	mPa	0.44
Elongation	%	165
Unprimed Lap Shear (Glass)	mPa	0.31

Typical Properties (Cont.)

Property	Unit	Result
Dielectric Strength	kV/mm	20
Volume Resistivity	Ohm*cm	3E+15
Dielectric Constant @1MHz		2.8
Dissipation Factor @1MHz		0.0009
UL Flammability Classification		94 V-0
Agency Listing		UL 746C
Storage Condition		0°C–30°C
Shelf life	Days	360

Description

Solventless RTV elastomeric 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. This product line also features coatings manufactured for controlled volatility and many of these products are UL recognized. Conformal coatings are materials applied in thin layers onto printed circuits or other substrates.

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 to form a non-tacky surface. 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.

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 at room temperature to build in some coatings. Dow conformal coatings are formulated to provide adhesion to most common substrates and materials. It is recommended that the coatings be applied to clean and dry substrates prior to application. Due to the vast variety of substrates used appropriate adhesion testing should be performed to insure the adhesion of the coating is adequate for the end use and should only be tested after 72 hours at room temperature. 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 adhesives 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 PCB system assemblies, it is often desirable to salvage or reclaim damaged or defective units. DOWSIL™ RTV conformal coatings offer excellent reparability 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. Proper ventilation of any fumes should be employed. 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.

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 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. The product should be stored in its original packaging with the cover tightly attached to avoid any contamination. Store in accordance with any special instructions listed on the product label. The product should be used by its Use Before date as indicated on the product label.

Packaging Information

Multiple packaging sizes are available for this product.

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, consumer.dow.com or consult your local Dow representative.

consumer.dow.com

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