Technical Data Sheet

DOWSIL™ PV-8301 Fast Cure Sealant

Fast cure silicone adhesive sealant

Features & Benefits

- Adhesion to typical PV substrates such as glass, aluminum, and common backsheet materials
- Fast cure allowing increased production rates
- Room temperature cure
- High temperature and high humidity resistant
- Two part product with a 10:1 ratio offering customized cure rate
- Multiple UL Ratings

Composition

- Two-part, fast cure silicone sealant

Applications

- Bonding and sealing photovoltaic module components
- Used for rail bonding, frame sealing and junction box adhesion

Typical Properties

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

Property	Unit	Result
DOWSIL™ PV-8301 Fast Cure Sealant Catalyst		
Color		Black
Viscosity	mPas or cP	76000
Specific gravity		1.0
DOWSIL™ PV-8300 Base		
Color		White
Extrusion Rate	Grams/ m	190
Specific gravity		1.31
DOWSIL™ PV-8300 Base with DOWSIL™ PV-8301 Catalyst		
Color		Black
Snap time (working time)	minutes	20 – 25
Cure time @ 25°C	hours	8
Specific gravity		1.31

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Typical Properties (Cont.)

Property	Unit	Result
Properties after full cure – 7 day at 23°C measured on 2 mm cured sheets		
Durometer hardness	Shore A	38 – 44
Tensile strength (H-Bar Test)[1]	Psi	174
	MPa	1.2
Elongation to break (H-Bar Test)[1]	%	80
Tensile strength (Sheet material test)[2]	Psi	300 – 350
	MPa	2.1 – 2.4
Elongation to break (Sheet material test)[2]	%	220
Adhesion via Peel Test – 7 day cure at 23°C		
Cohesive Failure	%	100
PPO, Anodized Al, Glass and Tedlar	Pli	15 – 24
UL Ratings		
UL 94	Flammability	HB
UL 746A	HWI	3
	HAI	0
	CTI	0
UL 746B	RTI	105°C (221°F)
UL746C	Outdoor UV/H_2O	f2

1. Test per external reference NFP 85-405, DTU 39.4
2. Test per external reference ASTM D 412 (ASTM: American Society for Testing and Materials.)

Description

DOWSIL™ PV-8301 Fast Cure Sealant is designed to offer long-term bonding and protection against moisture, environmental degradation, mechanical and thermal shock where cure speed is critical. It is recommended specifically for structural bonding to attach typical PV substrates.

How To Use

Substrate Preparation

All surfaces must be clean and dry. Degrease and wash off any contaminants that could impair adhesion.

Adhesion to low energy surfaces like polypropylene can be achieved via use of primer or plasma treatment.

Mixing

The DOWSIL™ PV-8301 Catalyst is designed to be used with DOWSIL™ PV-8300 Base in a mix ratio of 10 parts base to 1 part catalyst by weight. Suitable meter/mix equipment should be equipped with gear or piston metering pumps for base and catalyst, and a static mixer.

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How To Use (Cont.)

Curing Conditions

DOWSIL™ PV-8301 Fast Cure Sealant cures at room temperature and develops adhesion rapidly to metals, glass and plastic substrates. Apply contact pressure and keep still for best adhesion. Adhesion is normally good to most substrates without the use of primer, or of surface activation methods. If enhanced adhesion properties are needed, contact your local Dow technical support for primer and surface treatment recommendations.

Clean-Up

Extra product can be wiped up with a clean cloth before curing. If the product is cured, mechanical removal can be used to scrape off the substrate.

Humidity Resistance

DOWSIL™ PV-8301 Fast Cure Sealant shows good adhesive resistance to hot and humid conditions.

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 DOW.COM, OR FROM YOUR DOW SALES APPLICATION ENGINEER, OR DISTRIBUTOR, OR BY CALLING DOW CUSTOMER SERVICE.

Attention: When the information contained in the PSDS relates to a prototype material or a research & development sample, please be aware that hazard evaluation and handling recommendations are based on preliminary test data (if available), professional judgment in comparison with materials of a similar composition or a combination of these sources, as appropriate. For further information, please consult Dow's Health, Environmental and Regulatory Affairs Department (see Health and Environmental Information section).

Usable Life and Storage

When stored between 5°C to 30°C (41°F to 212°F) in the original unopened containers, the usable life from the date of manufacture is listed below:

- DOWSIL™ PV-8300 Base - 14 months

When stored at or below 25°C (77°F) in the original unopened containers, the usable life from the date of manufacture is listed below:

- DOWSIL™ PV-8301 Catalyst Black - 14 months

Packaging Information

DOWSIL™ PV-8301 Fast Cure Sealant is available in standard pails and drums. Detailed container size information may be obtained from your Dow representative.

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, dow.com or consult your local Dow representative.

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Disposal Considerations

Dispose in accordance with all local, state (provincial) and federal regulations. Empty containers may contain hazardous residues. This material and its container must be disposed in a safe and legal manner.

It is the user's responsibility to verify that treatment and disposal procedures comply with local, state (provincial) and federal regulations. Contact your Dow Technical Representative for more information.

Product Stewardship

Dow has a fundamental concern for all who make, distribute, and use its products, and for the environment in which we live. This concern is the basis for our product stewardship philosophy by which we assess the safety, health, and environmental information on our products and then take appropriate steps to protect employee and public health and our environment. The success of our product stewardship program rests with each and every individual involved with Dow products - from the initial concept and research, to manufacture, use, sale, disposal, and recycle of each product.

Customer Notice

Dow strongly encourages its customers to review both their manufacturing processes and their applications of Dow products from the standpoint of human health and environmental quality to ensure that Dow products are not used in ways for which they are not intended or tested. Dow personnel are available to answer your questions and to provide reasonable technical support. Dow product literature, including safety data sheets, should be consulted prior to use of Dow products. Current safety data sheets are available from Dow.

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