Technical Data Sheet

DOWSIL™ PV-804 Neutral Sealant

High-performance silicone adhesive/sealant

Features & Benefits

- Successful option in photovoltaic industry
- Adhesion to typical PV substrates such as glass, aluminum and common backsheet polymers
- Protects PV components from mechanical shock and thermal cycling stress
- One-part, neutral alkoxy silicone sealant that is moisture cured

Applications

- Junction box bonding for photovoltaic modules.
- Frame sealing for photovoltaic modules.

Typical Properties

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

CTM[1]	ASTM[2] /UL[3]	Property	Unit	Result
		As Supplied		
0176		Color		White or black
		Consistency		Non-slump paste
0364	D2452	Extrusion Rate[4]	g/minute	190
0095		Tack-free Time[5]	minutes	30
		Physical Properties – Cured 7 Days at 23°C (75°F) and 50% Relative Humidity		
0022	D0792	Specific Gravity at 23°C (75°F)		1.4
0099	D2240	Durometer Hardness	Shore A	39
0137A	D412	Tensile Strength	PSI MPa	377 2.6
0137A	D412	Elongation at Break	%	620
0159A	D624	Tear Strength – Die B	kN/m	14

1. CTMs (Corporate Test Methods) correspond to standard ASTM tests in most instances. Copies of CTMs are available upon request.
2. ASTM – American Society for Testing and Materials
3. UL – Underwriters Laboratories
4. Extrusion rate measured using 3.18 mm diameter nozzle at 0.62 Mpa.
5. Tack-free time is the time required for the product to develop a non-tacky surface based on adhesion to a polyethylene film.

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Typical Properties (Cont.)

CTM	ASTM /UL	Property	Unit	Result
		Electrical Properties – Cured 7 days at 23°C and 50% Relative Humidity		
0114	D149	Dielectric Strength	kV/mm	16
0249	D257	Volume Resistivity	ohm-cm	$1.0x10^{15}$
		UL Ratings		
	UL 94	Flammability		HB
	UL 746B	RTI Elec	°C (°F)	140 (284)
	UL 746B	RTI Imp	°C (°F)	105 (221)
	UL 746C	Outdoor UV/H_2O		f2

Description

DOWSIL™ PV-804 Neutral Sealant is designed to offer long-term bonding and protection against moisture, environmental degradation, mechanical and thermal shock, and vibration where a room-temperature-curing product is preferred.

How to Use

Substrate Preparation

All surfaces must be clean and dry. Degrease and wash off any contaminants that could impair adhesion. Suitable solvents include isopropyl alcohol, acetone, or methyl ethyl ketone.

Certain plastics may require specific surface treatment to obtain optimum adhesion. Contact your local Dow Technical support for further information.

How to Apply

Apply a bead of DOWSIL™ PV-804 Neutral Sealant to one of the prepared surfaces, then quickly cover with the other substrate to be bonded. On exposure to moisture, the freshly applied material will “skin over” in about 10 to 15 minutes at room temperature and 50% relative humidity. Any tooling should be completed before this skin forms. The surface is easily tooled with a spatula. DOWSIL™ PV-804 Neutral Sealant will be tack free in about 30 minutes.

Cure Time

After skin formation, cure continues inward from the surface. In 24 hours (at room temperature and 50% relative humidity), DOWSIL™ PV-804 Neutral Sealant will cure to a depth of about 2 mm. Very deep sections, especially when access to atmospheric moisture is restricted, will take longer to cure completely. Cure time is also extended at lower humidity levels. Before handling and packaging bonded components, users are advised to wait a sufficiently long time to ensure that the integrity of the adhesive seal is not affected. This will depend on many factors and should be determined by the user for each specific application.

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.

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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.

Usable Life and Storage

When stored at or below 30°C (86°F) in the original unopened containers, DOWSIL™ PV-804 Neutral Sealant has a usable life of 12 months from the date of manufacture.

Because DOWSIL™ PV-804 Neutral Sealant cures by reaction with moisture in air, keep the container tightly sealed when not in use. A plug of used material may form in the tip of a tube or cartridge during storage. This is easily removed and does not affect the remaining contents. In pails, a skin may form on the surface. This should be removed before placing in dispensing equipment.

Packaging Information

DOWSIL™ PV-804 Neutral Sealant is available in standard cartridge, pail and drum packaging. Detailed container size information should be obtained from your Dow contact.

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.

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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