



Technical Data Sheet

DOWSIL™ PV-801 Neutral Sealant

High-performance silicone adhesive/sealant with high elasticity after cure

Features & Benefits

- Adhesion to typical PV substrates
- Protects against mechanical shock and thermal cycling stress

Composition

- One-part, neutral alkoxy-cure silicone sealant

Applications

- Frame sealing for photovoltaic modules
- Junction box adhesives to glass and plastic backsheet for photovoltaic modules

Typical Properties

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

| CTM ¹ | ASTM ² | Property | Unit | Result |
|--|-------------------|---------------------------------|----------|-----------------------|
| As Supplied | | | | |
| 0176 | | Color | | White or bright white |
| | | Consistency | | Non-slump paste |
| 0364 | D2452 | Extrusion Rate ³ | g/minute | 197 |
| 0095 | | Tack-free Time ⁴ | minute | 55 |
| Physical Properties – Cured 7 days at 23°C (75°F) and 50% Relative Humidity | | | | |
| 0022 | D0792 | Specific Gravity at 23°C (75°F) | | 1.51 |
| 0099 | D2240 | Durometer Hardness, Shore A | | 28 |
| 0137A | D412 | Tensile Strength | MPa | 1.69 |
| 0137A | D412 | Elongation at Break | % | 746 |
| 0137A | D412 | Modulus (100%) | MPa | 0.43 |
| 0159A | D624 | Tear Strength – Die B | kN/m | 9.8 |
| Electrical Properties – Cured 7 days at 23°C and 50% Relative Humidity | | | | |
| 0114 | D149 | Dielectric Strength | kV/mm | 13 |
| 0249 | D257 | Volume Resistivity | ohm-cm | 2.1x10 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. Extrusion rate measured using 3.18mm diameter nozzle at 0.62 Mpa.
4. Tack-free time is the time required for the product to develop a non-tacky surface based on adhesion to a polyethylene film.

Typical Properties (Cont.)

| UL | Property | Unit | Result |
|-------------------|--------------|---------|-----------|
| UL Ratings | | | |
| UL 94 | Flammability | | HB |
| UL 746B | RTI Elec | °C (°F) | 105 (221) |
| UL 746B | RTI Imp | °C (°F) | 105 (221) |

Description

DOWSIL™ PV-801 Neutral Sealant is designed to provide long-term sealing and protection against moisture, environmental degradation, mechanical and thermal shock, and vibration where a room-temperature-curing product is preferred. It not only seals and protects, but its high elasticity after cure allows flexibility in harsh conditions, suitable for photovoltaic framing applications and junction box bonding applications.

How to Use

Substrate Preparation

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

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.

How to Apply

Apply a bead of DOWSIL™ PV-801 Neutral Sealant to one of the prepared surfaces, then cover with the other substrate to be bonded in 10-15 minutes.

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-801 Neutral Sealant will be tack free in about 25 minutes.

Cure Time

After skin formation, cure continues inward from the surface. In 24 hours (at room temperature and 50% relative humidity), DOWSIL™ PV-801 Neutral Sealant will cure to a depth of about 3 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. Extended cure time with respect to bonded components depends on many factors and should be determined by the user for each specific application.

Because DOWSIL™ PV-801 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.

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