Technical Data Sheet

DOWSIL™ 706 High Temperature Industrial Grade Silicone Sealant

Bonding, sealing, potting, encapsulating and protective coating operations where parts must perform at high temperatures

Features & Benefits

- Performs at temperatures ranging from -85 to 500°F (-65 to 260°C) for continuous operation
- Cures at room temperature by reaction with moisture in the air

Composition

- One-part nonslumping silicone paste

Applications

The high temperature properties of DOWSIL™ 706 High Temperature Industrial Grade Silicone Sealant make it ideally suited for:

- Sealing and encapsulating heating elements in appliances
- Aerospace gasketing
- Moving oven belts
- Industrial ovens
- Bag filters on smoke stacks
- Other critical bonding, sealing, potting, encapsulating and protective coatings where parts must perform at high temperatures

Typical Properties

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

Property	Unit	Result
As Supplied		
Color		Red
Flow/Slump		Nil
Extrusion Rate (1/8 Inch Orifice, 90 psi)	g/min	350
Specific Gravity		1.03
Cure Characteristics – Exposed to Air, 25°C (77°F) and 50 Percent RH		
Skin-Over Time	minutes	5–10
Tack-Free Time	minutes	10–15
Cure Time (1/8 Inch Thickness)	hours	24

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Typical Properties (Cont.)

Property	Unit	Result
As Cured – After 72 Hours at 25°C (77°F) and 50 Percent RH		
Durometer Hardness, Shore A	points	25
Tensile Strength	psi	320
Elongation	%	220
Unprimed Adhesion[1]		Good

1. Optimum adhesion is obtained in seven to ten days curing time. Use DOWSIL™ 1200 OS Primer or DOWSIL™ P5200 Adhesion Promoter if increased adhesion is required.

Description

DOWSIL™ 706 High Temperature Industrial Grade Silicone Sealant is a one-part paste that cures to a rubbery solid at room temperature on exposure to water vapor in the air. This silicone product is formulated to perform at temperatures ranging from -85 to 500°F (-65 to 260°C) for continuous operation. It can be used for numerous sealing and bonding applications.

Authorizations

- When fully cured and washed, complies with FDA Regulation 21 CFR 177.2600, subject to end-use compliance with any applicable total extractives limitations
- Recognized under UL 94 HB

How to Use

Application

DOWSIL™ 706 High Temperature Industrial Grade Silicone Sealant is supplied ready to use. Under pressure, it flows readily from its container. The paste-like consistency makes it easy to work; a spatula or wooden paddle can be used for tooling the surface.

Tack-free Time

The cure progresses inward from the surface when exposed to humidified air. At 77°F (25°C) and 50 percent relative humidity, the sealant forms a tack-free skin within 15 minutes. Tooling is not practical after the skin begins forming and should be completed within five minutes after application – even though this may require alternate periods of applying and tooling. If masking tape is used to mark off an area, it should be removed immediately after tooling.

Cure Time

Cure time is affected by relative humidity, degree of confinement and cross-sectional thickness of the sealant. Sections up to 1/8-inch thick become rubbery solids in about 24 hours at 77°F (25°C) and 50 percent relative humidity. Less moisture content reduces the time required slightly. In 24 hours, sections up to 1/8-inch thick cure to a rubber.

Confined Cure

In applications where DOWSIL™ 706 High Temperature Industrial Grade Silicone Sealant may be partially or totally confined during cure, the time required for proper cure is generally lengthened by the degree of confinement. It is possible, with absolute confinement, that cure will not be completed. Metal-to-metal bonds should not overlap more than one inch. Every application involving confinement during cure should be thoroughly tested before use. Curing time increases with the thickness of the sealant.

How to Use (Cont.)

Confined Cure (Cont.)

NOTE: The odor given off during cure is due to the liberation of acetic acid. This odor disappears as the cure progresses and is not detectable after the cure is complete.

Bonding

1. Thoroughly clean and degrease metal and plastic surfaces using Dow OS (Ozone Safe) fluids or another suitable solvent. Rubber surfaces should be roughened with sandpaper, then wiped with Dow OS fluids or another suitable solvent. Follow all precautions given on the solvent container label.
2. For stronger, more uniform bonds, apply a thin film of DOWSIL™ 1200 OS Primer or DOWSIL™ P5200 Adhesion Promoter to all surfaces except rubber and silicone rubber. Allow to air-dry for 30 to 45 minutes at room temperature. (Full instructions are provided with the prime coat.)

   Note: DOWSIL™ 1200 OS Primer and DOWSIL™ P5200 Adhesion Promoter are flammable and are not suitable for use in food-contact applications. Keep away from heat, sparks and open flames. Use only with adequate ventilation.
3. Apply DOWSIL™ 706 High Temperature Industrial Grade Silicone Sealant to the prepared surface in a uniform thickness. In those cases where the sealant is to be used between two surfaces, put the second surface in place, using enough pressure to displace the air but not the sealant.
4. Let the unit stand undisturbed at room temperature until cured.

Sealing

Using DOWSIL™ 706 High Temperature Industrial Grade Silicone Sealant in sealing applications follows approximately the same step-by-step procedures as outlined for bonding applications. After preparing the surfaces and priming where required, the sealant is applied by forcing it into the joint or seam to obtain full contact between the sealant and the surface.

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 in its original, unopened container below 32°C (90°F), DOWSIL™ 706 High Temperature Industrial Grade Silicone Sealant has a shelf life of 30 months from date of manufacture. Refer to product packaging for “Use By” date.

Packaging Information

DOWSIL™ 706 High Temperature Industrial Grade Silicone Sealant is supplied in 10.1 fl oz (300 mL) plastic cartridges and 4.5 gal (17 L) pails.

Limitations

DOWSIL™ 706 High Temperature Industrial Grade Silicone Sealant is not recommended:

- For continuous underwater immersion where adhesion or structural bonding is required
- On concrete, brick, mortar or other masonry surfaces
- On surfaces to be painted; paints do not adhere well to sealant (paint before applying sealant)
- On materials such as impregnated woods or oil-based caulks that bleed oils
- In totally confined areas; atmospheric moisture is required for cure
- On Teflon-coated materials, polyethylene, polypropylene or methylmethacrylate (Plexiglas); sealant will not adhere well
- On or near sensitive metals such as copper, brass, zinc, carbon steel, galvanized iron or magnesium; these metals may be corroded, especially in confined cure conditions, due to the acetic acid released during the cure

This product is neither tested nor represented as suitable for medical or pharmaceutical uses.

Shipping Limitations

None.

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.

How Can We Help You Today?

Tell us about your performance, design, and manufacturing challenges. Let us put our silicon-based materials expertise, application knowledge, and processing experience to work for you.

For more information about our materials and capabilities, visit **dow.com**.

To discuss how we could work together to meet your specific needs, go to **dow.com** for a contact close to your location. Dow has customer service teams, science and technology centers, application support teams, sales offices, and manufacturing sites around the globe.

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