



DOWSIL™ 748 Non-Corrosive Sealant

One-component silicone rubber

Features & Benefits

- Can be used in corrosion-sensitive electrical and PCB system assemblies equipment with no adverse effect
- Easy handling
- UL listed
- Complies with FDA regulation CFR 177.2600 covering indirect food contact

Applications

- General-purpose bonding and sealing applications where low odor and noncorrosive properties are required

Typical Properties

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

Test ¹	Property	Unit	Result
	As supplied²		
	Consistency		Non-slump paste
	Extrusion rate 1/8 inch nozzle at 90 psi	g/min	150
	Skin-over-time	min	15
	Tack-free-time	min	30
	Cure time, 1/8 inch	hours	36
	Full cure, 1/8 inch	days	7
	Corrosion properties		Noncorrosive
	As cured – physical³		
	Physical form		Tough, rubbery solid
	Color		Off-white
	Specific gravity at 25°C		1.33
	Peel strength ⁴	ppi (kN/M)	25 (4.4)
ASTM D 2240	Durometer hardness, Shore A		35

1. ASTM: American Society for Testing and Materials
2. At 77°F (25°C) and 50% RH.
3. After 7 days at 77°F (25°C) and 50% RH.
4. 1/4-inch steel strip to aluminum.

Typical Properties (Cont.)

Test	Property	Unit	Result
ASTM D 412	Tensile strength	psi (MPa)	275
ASTM D 412	Elongation	%	350
As cured – electrical			
ASTM D 149	Dielectric strength	Volts per mil	475
ASTM D 257	Volume resistivity	Ohm•cm	7.7 x 10 ¹⁴
ASTM D 150	Dielectric constant at 77°F (25°C)		
	at 100 Hz		3.30
	at 10 kHz		3.21
ASTM D 150	Dissipation factor at 77°F (25°C)		
	at 100 Hz		8.7 x 10 ⁻³
	at 10 kHz		2.8 x 10 ⁻³

Description

DOWSIL™ 748 Noncorrosive Sealant is a one-component, ready-to-use, nonslumping silicone material that reacts with moisture in the air to cure to a tough, rubbery solid. As a general purpose adhesive/sealant, it features:

- Compliance with FDA Regulation CFR 177.2600 covering indirect food contact
- A noncorrosive cure mechanism that produces no corrosive by-products; can be used in corrosion-sensitive electrical and PCB system assemblies equipment (on copper and other sensitive metals) with no adverse effect
- Easy handling with no mixing, heating or solvent hazards; easy repair by cutting away old material and replacing with fresh material
- A service-temperature range from -67 to 350°F (-55 to 177°C) for extended periods, and up to 400°F (204°C) for shorter times
- Resistance to harsh environments such as ozone, corona, moisture and weathering

Uses

DOWSIL 748 Noncorrosive Sealant is a durable, general-purpose sealant and adhesive for use in a wide range of bonding and sealing applications.

Limitations

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

Authorizations

FDA Status

When fully cured and washed, DOWSIL 748 Noncorrosive Sealant meets the requirements of FDA regulation No. 21 CFR 177.2600, subject to end-user compliance with any applicable total extractives limitations.

UL Status

DOWSIL 748 Noncorrosive Sealant is recognized by Underwriters Laboratories Inc. for service to 105°C where elongation is not essential. It also meets UL 94 Flame class, 94 HB. UL File No. E 40195 (N).

How To Use

DOWSIL 748 Noncorrosive Sealant forms a bond to most clean surfaces of metals, glass, silicone or organic resins, and vulcanized silicone rubber. A primer is recommended on some plastics such as acrylic; use DOWSIL™ 1205 Prime Coat.

Application

Apply DOWSIL 748 Noncorrosive Sealant to the prepared surface in a uniform thickness. If this adhesive/sealant is to be used between two surfaces, apply to one surface and allow it to establish uniform contact before putting the other surface in place. When placing the second surface, use enough pressure to displace the adhesive/sealant.

Best adhesion is obtained with a 15 mil thick glue line; metal-to-metal bonds should not overlap more than one inch.

Let the unit stand undisturbed at room temperature until it cures sufficiently. The odor given off during cure is due to the liberation of an alcohol. The odor will disappear when the cure is complete.

Tack-Free Time and Tooling

On exposure to moisture in the air, the surface of DOWSIL 748 Noncorrosive Sealant will skin over in about 15 minutes at room temperature with 50 percent relative humidity. Any tooling should be completed before this skin forms. The surface is easily tooled with a spatula and will be tack free in less than 30 minutes.

Cure Time

Curing continues inward from the surface. In 24 hours (at room temperature and about 50 percent relative humidity), DOWSIL 748 Noncorrosive Sealant will cure to a depth of 75 mils. In 72 hours, it will cure to about a 1/4-inch thickness with a Durometer hardness of about 20. Sections 1/2-inch deep can take up to two weeks for complete cure.

The relative humidity must be at least 20 percent to effect cure in the times stated. Less moisture will extend the cure time.

If both bonded members are impermeable to moisture, as in the case of two metal plates, cure time will depend on the thickness of DOWSIL 748 Noncorrosive Sealant and the area under the joint. The larger the unexposed bond area, the longer the cure time required. For shorter cure time and maximum bond strength, keep the area enclosed by a joint to a minimum. For best results, a metal-to-metal bond should not overlap more than one inch.

Usable Life and Storage

When stored at or below 90°F (32°C), DOWSIL 748 Noncorrosive Sealant has a shelf life of 24 months from date of manufacture.

Since this material cures by reaction with moisture in the air, keep the container tightly sealed when not in use. A plug of cured material may form in the tip of the tube during storage, but is easily removed and does not affect the remaining contents.

Shipping Limitations

None.

Packaging Information

DOWSIL 748 Noncorrosive Sealant is supplied in 3 fl oz (90 mL) tubes, 10.7 fl oz (316 mL) cartridges and 4.5 gal (17 L) pails.

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.

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

LIMITED WARRANTY INFORMATION – PLEASE READ CAREFULLY

The information contained herein is offered in good faith and is believed to be accurate. However, because conditions and methods of use of our products are beyond our control, this information should not be used in substitution for customer's tests to ensure that our products are safe, effective, and fully satisfactory for the intended end use. Suggestions of use shall not be taken as inducements to infringe any patent.

Dow's sole warranty is that our products will meet the sales specifications in effect at the time of shipment.

Your exclusive remedy for breach of such warranty is limited to refund of purchase price or replacement of any product shown to be other than as warranted.

TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, DOW SPECIFICALLY DISCLAIMS ANY OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE OR MERCHANTABILITY.

DOW DISCLAIMS LIABILITY FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES.

