



Technical Data Sheet

DOWSIL™ 730 FS Solvent Resistant Sealant

Solvent resistant silicone adhesive/sealant

Features & Benefits

- One-component fluorosilicone adhesive/sealant.
- Cures at room temperature when exposed to moisture in the air.
- Acetoxy cure system.
- Non-sag, paste consistency.
- Easy to apply.
- Cures to a tough, flexible rubber.
- Good adhesion to many substrates.
- Stable and flexible from -65°C (-85°F) to 260°C (500°F).
- Retains its properties under exposure to fuels, oils and solvents.

Applications

- For bonding and sealing applications where resistance to the swelling effects of fuels, solvents and oils is required.
- For assembling and/or repairing of fuel systems and tanks.
- Used for formed-in-place gaskets where irregular shapes and harsh conditions reject ordinary seals.
- For bonding or sealing of components exposed to moisture, vibration, shock, fuels, solvents and oils for long periods of time.

Typical Properties

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

| CTM ¹ | ASTM ² | Property | Unit | Result |
|--|-------------------|-----------------------------|----------|-----------------|
| As supplied | | | | |
| 0176 | | Appearance | | Non-slump paste |
| | | Colors | | White |
| 0364 | | Extrusion rate ³ | g/minute | 321 |
| 0098 | | Skin-over time | minutes | 12 |
| 0095 | | Tack-free time | minutes | 14 |
| Mechanical properties, cured 7 days in air at 23°C (73°F) and 50% relative humidity | | | | |
| 0022 | D792 | Specific gravity | | 1.44 |
| 0099 | D2240 | Durometer hardness, Shore A | | 40 |

1. CTM: Corporate Test Method, copies of CTMs are available on request.
2. ASTM: American Society for Testing and Materials.
3. Extrusion rate: 3.2 mm orifice at 0.62 MPa., 1/8" orifice at 90 psi.

Typical Properties (Cont.)

| CTM | ASTM | Property | Unit | Result |
|---|------|---------------------------------|-----------|----------------------|
| 0137A | D412 | Tensile strength | MPa(psi) | 3.0 (434) |
| 0137A | D412 | Elongation at break | % | 195 |
| 0159A | D624 | Tear strength – die B | kN/m(ppi) | 11.9 (68) |
| | | Brittle point | °C | –65 |
| | | | °F | –85 |
| 0293 | | Peel strength, aluminum, primed | kN/m(ppi) | 6.8 (39) |
| Electrical properties, after 7 days cure in air at 25°C (77°F) and 50% relative humidity | | | | |
| 0171 | | Arc resistance | seconds | 124 |
| 0114 | D149 | Dielectric strength | volts/mil | 372 |
| 0112 | D150 | Dielectric constant at 100 Hz | | 7.11 |
| 0112 | D150 | Dissipation factor at 100 kHz | | 0.007 |
| 0249 | D257 | Volume resistivity | Ohm.cm | 5.1x10 ¹³ |

Description

DOWSIL™ 730 FS Solvent Resistant Sealant is a ready-to-use, solventless, nonslumping fluorosilicone rubber paste that reacts with moisture in the air to form a tough, rubbery solid. It is a fluid-resistant material that is ideally suited for use in many applications where resistance to fumes, splash, and sometimes even total immersion in fuels, oils and solvents is needed.

DOWSIL™ 730 FS Solvent Resistant Sealant features good resistance to weathering, vibration moisture, ozone, and temperature extremes. It retains its flexibility over a wide temperature.

DOWSIL™ 730 FS Solvent Resistant Sealant can be applied overhead or on vertical surfaces without fear of sagging, slumping or running off.

Uses

DOWSIL 730™ FS Solvent Resistant Sealant is used primarily for bonding, sealing and caulking applications where resistance to the swelling effects of fuels, oils and solvents is needed. Other potential applications include:

- Sealing seams on various liquid storage tanks.
- Sealing fuel lines and tanks.
- Providing temporary patch for rubber linings.
- Sealing pipe joints on lines carrying solvents.
- Providing formed-in-place gaskets for sealing chemical compressors.
- Providing formed-in-place gaskets where irregular shapes and harsh conditions reject ordinary seals.
- Bonding or sealing components exposed to moisture, vibration, shock, certain fuels, oils and solvents for long periods of time.

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.

Unprimed adhesion may be obtained on many substrates such as glass, metals and many common engineering plastics. Substrates to which good adhesion is normally not obtained include PTFE, polyethylene, polypropylene and related materials.

For maximum adhesion, the use of DOWSIL™ 1200 OS Primer is recommended. After solvent cleaning, a thin coat of DOWSIL™ 1200 OS Primer is applied by dipping, brushing or spraying. Allow primer to dry for 15 to 90 minutes at room temperature and a relative humidity of 50% or higher.

How to Apply

Apply DOWSIL™ 730 FS Solvent Resistant 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 12 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. The adhesive/sealant will be tack-free in about 14 minutes.

Cure Time

After skin formation, cure continues inward from the surface. In 24 hours (at room temperature and 50% relative humidity) DOWSIL™ 730 FS Solvent Resistant 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 extended at over 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.

Compatibility

DOWSIL™ 730 FS Solvent Resistant Sealant releases a small amount of acetic acid during cure. This may cause corrosion on some metallic parts or substrates, especially in direct contact or when the cure is carried out in a totally enclosed configuration which would not allow cure by-products to escape.

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 32°C (90°F) in the original unopened containers, DOWSIL™ 730 FS Solvent Resistant Sealant has a usable life of 18 months from the date of production.

As DOWSIL™ 730 FS Solvent Resistant 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 content.

Packaging Information

This product is available in standard industrial container sizes.

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.

Table I:

Typical Fluid Resistance Values

These values are not intended for use in preparing specifications.

| Fluids | Volume Swell, % | Durometer Hardness, pts change |
|---------------------|-----------------|--------------------------------|
| Methanol | 1.4 | -4 |
| JP-5 | 2.5 | -5 |
| Diesel | 1.5 | -5 |
| Isopropanol | 1.7 | -4 |
| JP-8 | 3.1 | -4 |
| DOWSIL™ OS 20 Fluid | 3.6 | -2 |

DOWSIL™ 730 FS Solvent Resistant Sealant, cured 7 days before immersion, properties obtained after 7 days immersion at room temperature.

Table II:

Typical Thermal Stability Properties for DOWSIL™ 730 FS Solvent Resistant Sealant

These values are not intended for use in preparing specifications.

| | Exposure Time (Days) | | | | |
|---|----------------------|-------------|------------|------------|------------|
| | 0 | 1 | 3 | 7 | 14 |
| Tested at Room Temperature After Exposure at 300°F (149°C) | | | | | |
| Durometer hardness, Shore A, points | 43 | 44 | 45 | 45 | 47 |
| Tensile strength, Mpa (psi) | 2.99 (434) | 3.38 (490) | 3.14 (456) | 3.03 (439) | 2.98 (432) |
| Elongation, percent | 195 | 195 | 177 | 171 | 159 |
| Tear strength, kN/m (ppi) | 11.91 (68) | 26.97 (154) | 9.63 (55) | 9.11 (52) | 8.93 (51) |
| Tested at Room Temperature After Exposure at 400°F (204°C) | | | | | |
| Durometer hardness, Shore A, points | 43 | 43 | 46 | 47 | 45 |
| Tensile strength, Mps (psi) | 2.99 (434) | 3.03 (439) | 2.65 (385) | 2.62 (381) | 2.25 (327) |
| Elongation, percent | 195 | 173 | 140 | 138 | 128 |
| Tear strength, kN/m, (ppi) | 11.91 (68) | 9.28 (53) | 8.76 (50) | 8.41 (48) | 8.06 (46) |

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