Technical Data Sheet

DOWSIL™ Q4-2817 Fluorosilicone Sealant

One-part, ready to use, high strength solventless fluorosilicone elastomer paste

Features & Benefits

- High strength
- Retains its properties under exposure to fuels, oils and solvents
- Excellent adhesion and bond strength to most materials
- Resistant to weathering, moisture and ozone
- Flexible from -55°C to +260°C
- Easy to use
- One-part room temperature cure
- Cures at room temperature to form a tough, rubbery solid

Applications

- Developed for use on equipment exposed to solvents, oil and fuels.
- Protects surfaces exposed to fuel from erosion and corrosion.
- Applications include bonding or sealing of components exposed for long periods to moisture vibration, shock, fuel and solvents.
- Excellent material for sealing aircraft fuel tanks.

Typical Properties

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

CTM[1]	ASTM[2]	Property	Unit	Result
		As supplied, at 25°C and 50% relative humidity		
		Color		Red
0022	D792	Relative density at 25°C		1.8
0208		Non-volatile content after 24 hours at 70°C	%	97
0364		Extrusion rate, (3 mm orifice, 0.6 MPa air)	g/minute	120
0062		Flow (MIL-S-7502 Jig)	cm	Nil
0098		Skin-over time	minutes	11
0095		Tack-free time	minutes	40
		Set up time (for cure to penetrate 3 mm from exposed surface)	hours	120
		Full cure time (to develop optimum physical properties)	days	14

1. CTM: Corporate Test Method, copies of CTMs are available on request.
2. ASTM: American Society for Testing and Materials.

®™Trademark of The Dow Chemical Company ("Dow") or an affiliated company of Dow

© 2020 The Dow Chemical Company. All rights reserved.

Form No. 10-1051-01-0420 S2D

Typical Properties (Cont.)

CTM	ASTM	Property	Unit	Result
		As cured - after 14 days at 25°C and 50% RH		
0099	D2240	Durometer hardness, Shore A		43
0137A	D412	Tensile strength	MPa	4.5
0137A	D412	Elongation at break	%	375
0159A	D624	Tear strength - die B	kN/m	15
		Brittle point	°C	Below -65
0293		Peel strength	kN/m	10.5
		Fuel resistance - after exposure in jet reference fuel for 14 days at 60°C		
0099	D2240	Durometer hardness, Shore A		37
0137A	D412	Tensile strength	MPa	3.9
0137A	D412	Elongation at break	%	255
0293		Peel strength[3]	kN/m	6.3
		Fuel resistance - after exposure for 14 days at 25°C		
		JP-4, swell	%	6.5
		JP-5, swell	%	1.2
		Fuel, swell - after exposure in jet reference for 14 days at 80°C	%	15

3. Measured on specimens cured for 14 days at standard conditions on 2024 clad aluminium treated with DOWSIL™ 1200 OS Primer.

How to Use

Substrate Preparation

DOWSIL™ Q4-2817 Fluorosilicone Sealant adheres well to most materials used in the aerospace and aircraft industries. Typical materials include glass, cured silicone rubber, cork, phenolic, polyester, epoxy, silicone resin laminates and most metals including stainless steel, titanium and aluminium. It may not adhere well to polyethylene or certain plastics and organic materials (including rubber), which bleed or exude plasticizers.

DOWSIL™ Q4-2817 Fluorosilicone Sealant should always be applied to clean, dry surfaces. A satisfactory bond will usually be formed without using a primer on degreased surfaces. However, for maximum adhesion use of DOWSIL™ 1200 OS Primer is recommended. For best results:

1. Clean the surface with a chlorinated solvent (see Handling Precautions) and a slightly abrasive pad or a coarse lint-free cloth.
2. Rinse cleaned surface with acetone or methyl ethyl ketone.
3. Apply a thin coat of primer by dipping, brushing or spraying.
4. Allow the primer to dry for at least 1 hour, according to relative humidity.
5. Silicone rubber surfaces should not normally be primed, but only roughened slightly with abrasive paper and rinsed with acetone. In thin sections, a primer may be needed.

®™Trademark of The Dow Chemical Company ("Dow") or an affiliated company of Dow

© 2020 The Dow Chemical Company. All rights reserved.

How to Use (Cont.)

How to Apply

DOWSIL™ Q4-2817 Fluorosilicone Sealant is supplied in a polyethylene cartridge which can be used with handguns or power-operated guns. A source list for this equipment is available upon request.

Once extruded, DOWSIL™ Q4-2817 Fluorosilicone Sealant (see Handling Precautions) sealant will not flow or slump and can be easily tooled with a spatula or knife blade before it starts to skin over.

DOWSIL™ Q4-2817 Fluorosilicone Sealant may be dispersed in methyl ethyl ketone and applied by brushing, dipping or spraying.

If DOWSIL™ Q4-2817 Fluorosilicone Sealant is being used as an adhesive between two surfaces, it should be applied to one surface in a uniform thickness of 0.25–0.75 mm. The other surface should be put in place and enough pressure exerted to displace the air and assure uniform contact between adhesive and both surfaces. Best adhesion is obtained with a 0.25–0.75 mm glue line.

Working and Cure Time

DOWSIL™ Q4-2817 Fluorosilicone Sealant begins curing on exposure to moisture in the air. It will skin over in 15 minutes or less at ordinary room temperature. Skin-over time may be reduced under conditions of high temperature and humidity. The material beneath the "skin" continues to cure, and sections up to 3 mm thick become a rubbery solid in about 5 days. Curing time increases as the thickness of the sealant increases and also as the degree of confinement increases.

Absolute confinement can prevent cure and cause inferior adhesion.

Every application involving confinement during cure should be thoroughly tested before commercialization. Inadequate cure can result in a softening of the sealant at elevated temperatures.

If adhesion fails to develop due to confinement or excessive sealant thickness, a layer of dispersed sealant in methyl ethyl ketone should be applied and allowed to cure completely before applying sealant.

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 in the original unopened containers DOWSIL™ Q4-2817 Fluorosilicone Sealant has a usable life of 12 months from the date of production.

As DOWSIL™ Q4-2817 Fluorosilicone 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.

®™Trademark of The Dow Chemical Company ("Dow") or an affiliated company of Dow

© 2020 The Dow Chemical Company. All rights reserved.

Packaging Information

DOWSIL™ Q4-2817 Fluorosilicone Sealant is available in 5.4 fl oz cartridges, net weight.

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.

dow.com

NOTICE: No freedom from infringement of any patent owned by Dow or others is to be inferred. Because use conditions and applicable laws may differ from one location to another and may change with time, Customer is responsible for determining whether products and the information in this document are appropriate for Customer's use and for ensuring that Customer's workplace and disposal practices are in compliance with applicable laws and other government enactments. The product shown in this literature may not be available for sale and/or available in all geographies where Dow is represented. The claims made may not have been approved for use in all countries. Dow assumes no obligation or liability for the information in this document. References to "Dow" or the "Company" mean the Dow legal entity selling the products to Customer unless otherwise expressly noted. NO WARRANTIES ARE GIVEN; ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY EXCLUDED.

®Trademark of The Dow Chemical Company