



Technical Data Sheet

DOWSIL™ 3-8209 Silicone Foam

Two-part, room temperature curing silicone foam system

Features & Benefits

- Low to medium hardness (Shore 00)
- User-friendly, easy to handle 1:1 mix ratio
- Fast ambient temperature cure, no need for temporary storage of equipped parts
- Low compression set which is retained at high service temperatures
- Stable and flexible over a wide temperature range

Applications

- DOWSIL™ 3-8209 Silicone Foam is designed to be dispensed and cured directly on parts to form an integrated compression gasket.
- Typical applications include automotive parts, housings for electric devices, exterior lighting and domestic appliance components.

Typical Properties

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

CTM ¹	Property	Unit	Result	
	As supplied		Part A	Part B
0176	Appearance		Dark gray	Colorless
0050	Viscosity at 23°C	mPa.s	11,000–17,000	12,000–17,000
0001	Specific gravity at 23°C		1.07	1.01
After mixing part A and part B 1:1 at 23°C				
0092	Snap time	sec	150–220	
0095	Tack free time	min	maximum 10	
Physical properties cured at 23°C and tested after 24 hours				
0016	Density	kg/m ³	200–280	
0099	Hardness Shore 00		45	
0085	Compression set 50% compression			
	22 hours at 70°C non-post-cured	%	32	
	22 hours at 70°C post-cured (post-cured 1 hour at 100°C)	%	4	
	Stress-strain characteristics in compression, 50% compression	kPa	74	

1. CTM: Corporate Test Method, copies of CTMs are available on request.

Description

DOWSIL™ 3-8209 Silicone Foam is a low to medium hardness product, primarily developed as a dispensed 'foamed-in-place' gasket material for the automotive and industrial assembly and maintenance industry. When the A and B liquid components are thoroughly mixed in a 1:1 ratio by volume, the product will expand and cure to a foamed elastomer in approximately 10 minutes at room temperature. This foam has a fine cell structure and functions as a seal or gasket where long service life, chemical resistance, good weatherability and low compression set are required. The hardness makes the product suitable for applications with low to medium clamping pressure. Furthermore, the inherent properties of a silicone elastomer mean that the product can be used over a broad temperature range.

How to Use

Mixing

To ensure a uniform final foam structure an equal volume of Part A and Part B should be thoroughly mixed. The product has been specifically designed with a favorable 1:1 mix ratio to suit robotic application via meter/mix/dispense equipment. Mixing can be achieved either by static or (preferably) dynamic mixing. The type and degree of mixing and shear can significantly affect the cell structure, cure and density of the final foam product.

How to Apply

The meter/mix equipment can be attached to a robotic arm/wrist applicator or on an X-Y-Z table for automatic dispensing. The mixed material can be applied into a groove or onto flat surfaces.

Cure Time

DOWSIL™ 3-8209 Silicone Foam is a fast reacting material, thus allowing parts to be equipped at a high production rate and avoiding the need for temporary storage to fully develop the cure. As supplied and when properly mixed, DOWSIL™ 3-8209 Silicone Foam has a snap time of typically 3 minutes at 23°C and is cured within about 10 minutes. Being a highly reactive system, the cure and snap time are very dependent upon the temperature of the components just before and after they are mixed.

Exposure of the foam material to elevated temperatures up to 50°C can shorten the cure time. In order to eliminate eventual residual surface tackiness a brief heat treatment for 5–10 minutes at 60–90°C can be carried out. Additionally, to optimize compression set, a post-cure at higher temperatures (100°C) can be performed (see Typical Properties table).

Note: See handling precautions, gas evolution. Larger pieces of cured foam should be conditioned for 24 hours at room temperature before exposure to higher temperatures.

Adhesion

DOWSIL™ 3-8209 Silicone Foam is not designed to build up adhesion but it exhibits some adhesion to most common substrates such as glass, steel and to some plastics. Adhesion to most substrates can usually be promoted by use of DOWSIL™ 1200 OS Primer. Substrates to which good adhesion is not normally obtained include PTFE, polyethylene, polypropylene and related materials.

Good adhesion cannot be expected to substrates known to inhibit the cure of DOWSIL™ 3-8209 Silicone Foam.

How to Use (Cont.)

Inhibition of Cure

DOWSIL™ 3-8209 Silicone Foam is susceptible to cure inhibition when in contact with certain materials and chemicals. This can result in incomplete cure or a sticky product. Amines and sulphur containing materials are strong inhibitors, as are organotin salts as used in condensation cure silicones. Some epoxies, amides and related materials can also cause inhibition, although the effect is not generally seen with plastics derived from such materials. Substrates must be clean, dry and free of contaminants such as plasticizers or oils.

To avoid inhibitor contamination of the A and B liquid components, dispensing tubes and seals used in meter/mix equipment must be made of PTFE rather than conventional plastic or rubber materials.

In all cases it is recommended that Dow be consulted in order to advise on potential inhibition problems.

Gas Evolution

Immediately upon mixing DOWSIL™ 3-8209 Silicone Foam Part A and Part B, a chemical reaction takes place that results in the evolution of flammable hydrogen gas. APPROPRIATE CAUTION SHOULD BE EXERCISED!

Keep away from sparks and open flames. Adequate ventilation must be provided to prevent localized build-up of hydrogen gas concentration. Also on mixing, some exotherm accompanies the reaction and waste material must be handled, disposed and stored with due regard to this precautionary information, e.g. it should NOT be sealed in plastic bags and large quantities should NOT be allowed to accumulate.

If Part B of DOWSIL™ 3-8209 Silicone Foam comes in contact with strong acids, bases or oxidizing materials, it could generate hydrogen. Ensure that containers are properly closed after use in order to avoid any contamination of the contents.

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 30°C in the original unopened containers, DOWSIL™ 3-8209 Silicone Foam has a usable life of 12 months from the date of production.

Packaging Information

DOWSIL™ 3-8209 Silicone Foam is available as kits in standard industrial containers sizes suitable for use in commercially available meter/mix equipment. For details please refer to your sales office.

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

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