



## Technical Data Sheet

# DOWSIL™ 3559 Neutral Silicone Adhesive Sealant

## FEATURES

- One component adhesive/sealant
- Cures at room temperature when exposed to moisture in the air
- Oxime cure system
- Non-sag, paste consistency
- Easy to apply
- Excellent unprimed adhesion to many substrates
- Stable and flexible from -40°C to +220°C

## BENEFITS

- Does not react with or corrode most metals and plastics (see limitations)
- Fast deep section cure

## COMPOSITION

- Silicone Adhesive/Sealant

Black neutral cure silicone adhesive/sealant

## APPLICATIONS

- Designed to provide flexible yet structurally strong bonding in applications where a neutral cure and a fast built up of mechanical properties is required
- Low modulus formulation for high movement capability

## TYPICAL PROPERTIES

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

CTM*	ASTM**	Property	Unit	Result
<b>As supplied</b>				
		Appearance and Color		Paste and black
0097B	D 147	Specific Gravity		1.3
0364	MIL-S-8802D	Extrusion Rate	g/min	140
0095A	MIL-S-8802F	Tack-Free-Time (23°C, 50% R.H)	min	25
0663		Cure Depth after 24 h (23°C, 50% R.H)	mm	3.5
<b>Mechanical Properties, cured 7 days in air at 23°C and 50% R.H</b>				
0137A	D 412	Tensile Strength	MPa	1.6
0137A	D 412	Elongation at Break	%	400
0137A	D 412	Modulus at 100%	MPa	0.8
0099	D 2240	Hardness, Shore A		40
<b>Adhesion properties, measured after 7 days at 23°C and 50% R.H</b>				
0234		Lap Shear Strength on Glass	MPa	1.3
0234		Lap Shear Strength on Aluminum	MPa	1.3

\*CTM : Corporate Test Method, copies of CTM's are available on request.

\*\*ASTM : American Society for Testing and Materials.

## DESCRIPTION

DOWSIL™ 3559 Neutral Silicone Adhesive Sealant is a black, one-component, non-flowing, silicone adhesive with fast deep section cure. It forms high strength, medium modulus flexible bonds to metal, glass, ceramic substrates and many engineering plastics with improved adhesion properties when exposed to high temperatures. It withstands temperatures up to 220°C.

## HOW TO USE

### Substrate preparation

Ensure that surfaces to be sealed are clean and dry. Degrease and wash off

release agents, water repellents, dust, dirt and any contaminants that could impair adhesion. Suitable solvents include isopropyl alcohol, acetone or DOWSIL™ R-40 Universal Cleaner.

Unprimed adhesion may be obtained on many substrates such as glass, metals (e.g. iron, steel, aluminum) and most common engineering plastics (e.g. PVC, polyacrylate, polycarbonate). Adhesion may be less successful on some low energy plastics such as polyethylene, polypropylene and PTFE. However, for maximum adhesion, the use of DOWSIL™ 1200 OS Primer is

recommended. After solvent cleaning, a thin coat of 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**

DOWSIL 3559 Neutral Silicone Adhesive Sealant is ready to use. Apply a bead of DOWSIL 3559 Neutral Silicone Adhesive 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 5-10 minutes at room temperature and 50% rel. 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 25 minutes

**Cure Time**

After skin formation, cure continues inward from the surface. In 24 hours at room temperature and 50% relative humidity, DOWSIL 3559 Neutral Silicone Adhesive Sealant will cure to a depth of about 3.5 mm. Very deep sections, especially when access to atmospheric moisture is restricted, will take longer to cure completely. Cure time is very much depending on the humidity level. It is extended at lower humidity levels and accelerated at higher levels, respectively (see table below).

<b>Condition</b>	<b>Cure Depth After 24 h [mm]</b>
23°C, 50% R.H.	3.5
15°C, 40% R.H	2.4
30°C, 60% R.H.	4.7
35°C, 70% R.H.	5.8

Before handling and packaging bonded components, users are advised to wait a sufficiently long time to ensure that the integrity of the seal is not affected. This will depend on many factors and should be determined by the user for each specific application.

**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.**

**STORAGE**

Product should be stored at or below 25°C in original, unopened containers.

**LIMITATIONS**

In confined cure conditions, DOWSIL 3559 Neutral Silicone Adhesive Sealant may:

- Discolor brass, copper or other sensitive metals
- Stress craze polycarbonate

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, consumer.dow.com or consult your local Dow representative.

**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.

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