Information About *Dow Corning*® 3-0110 Automotive Sealant

Type
One-part, alkoxy-cure, room-temperature-vulcanizing (RTV) silicone sealant

Physical Form
– **As Supplied**
High-viscosity paste
– **As Cured**
Tough, rubbery solid

Special Properties
Automotive powertrain fluid resistance; blowout resistant; excellent unprimed adhesion; noncorrosive; low odor; low volatility

Primary Uses
Formed-in-place gasketing (FIPG) sealant for many automotive powertrain sealing applications

DESCRIPTION

Dow Corning® 3-0110 Automotive Sealant is a one-part, self-priming, non-corrosive, alkoxy-cure, RTV silicone rubber designed for automotive power-train sealing applications. The sealant is specifically designed to provide an elastomeric seal that is resistant to most automotive powertrain fluids. Further, it is formulated to withstand on-line pressure leak testing (blowout resistance) in assembly operations.

This product exhibits excellent unprimed adhesion to properly prepared surfaces of metals and many plastics. It is low in silicone volatiles and meets the low volatility requirements of the automotive industry for use in gasketing applications.

TYPICAL APPLICATIONS

Dow Corning 3-0110 Automotive Sealant can be used for many automotive flange sealing applications. Because of its high viscosity, the sealant is recommended in applications where immediate pressure leak testing is required. Typical applications include oil pan and axle cover seals, as well as coolant system seals and engine block main seals.

LIMITATIONS

Do not use for applications where the product will be in constant contact with gasoline, synthetic fuels, or solvents. Do not use in totally confined applications; sealant must have exposure to moisture from the atmosphere to cure.

Not intended for medical use.

HOW TO USE

Substrate Preparation

Surfaces to be adhered or sealed should be free of dirt, oil, and other contaminants. A surface primer can be recommended for hard-to-bond surfaces, such as some plastics. Contact your Dow Corning representative for specific recommendations.

How To Apply

Apply the sealant to the prepared surface in a continuous, uniform thickness. *Dow Corning* 3-0110 Automotive Sealant can be manually applied, but the use of automated dispensing equipment is highly recommended to obtain a uniform seal.

The sealant bead size to be specified is a function of the anticipated gap size for the part and the flange width. Consult your Dow Corning representative for equipment supplier and design recommendations.

Tack-Free Time and Handling Time

On exposure to moisture in the air, the surface of *Dow Corning* 3-0110 Automotive Sealant will skin over in about 10 minutes at room temperature and 50 percent relative humidity. To ensure integrity of the seal between mating parts, assemble the parts before the sealant skins over. Higher relative humidities will accelerate this cure time.

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Dow Corning Corporation
Midland, Michigan 48686-0994

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Cure

Curing continues inward from the surface. In 24 hours at room temperature and 50 percent relative humidity, a fully exposed section of *Dow Corning* 3-0110 Automotive Sealant will cure to a depth of 3.2 mm. Lower relative humidities will extend this 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 *Dow Corning* 3-0110 Automotive Sealant and the area under the joint. The larger the unexposed area, the longer the cure time. For shorter cure time and maximum bond strength, keep the area enclosed by the joint to a minimum. For best results, a metal-to-metal bond should not overlap more than one inch.

SHIPPING LIMITATIONS

None.

STORAGE AND SHELF LIFE

When stored at or below 32° C (90° F), *Dow Corning* 3-0110 Automotive Sealant has a shelf life of 18 months from the date of manufacture. Since this material cures by reaction with moisture in the air, keep the container tightly sealed when not in use.

PACKAGING

Dow Corning 3-0110 Automotive Sealant is available in 10.3-ounce cartridges, 4.5-gallon pails, and 45-gallon drums.

TYPICAL PROPERTIES

These values are not intended for use in preparing specifications.

As Supplied[1]		
CTM[2] 0176	Consistency	High-viscosity, nonslumping paste
CTM 0063	Color	Grey
CTM 0364	Extrusion Rate, 3.2-mm (1/8-inch) nozzle at 0.63 MPa (90 psi), grams per minute	40
CTM 0098	Skin-Over Time, minutes	7
CTM 0095	Tack-Free Time, minutes	20
CTM 0084	Cure Rate, 3.2 mm (1/8 inch), hours	24
CTM 0097	Specific Gravity	1.30
CTM 0087	Volatility, percent	0.3
	Blowout Resistance, 30-minute cure, 4-mm (0.157-inch) flange, 1.5-mm (0.060-inch) gap, 2 minutes at 0.014 MPa (2 psi)	Pass
As Cured—Physical[3]		
ASTM D 2240	Durometer, Shore A	47
ASTM D 412	Tensile Strength, MPa (psi)	2.76 (400)
ASTM D 412	Elongation, percent	375
	Heat Resistance, 240 hours at 120° C (248° F), percent change in durometer	-10
ASTM D 816	Lap Shear Adhesion, 12.7 x 25.4 x 1 mm (0.5 x 1 x 0.040 inch), MPa (psi), 2024 aluminum	1.95 (283)
	1010 steel	2.10 (300)
As Cured—Fluid Immersion Resistance[3]		
Mobil®[4] 5W30 SG Oil, 7 days at 150° C (302° F), percent, change in durometer		-50
change in tensile		-10
change in elongation		-10
volume swell		35

[1]At 23° C (73° F) and 50% relative humidity.

[2]CTMs (Corporate Test Methods) correspond to standard ASTM tests in most instances. Copies of CTMs are available upon request.

[3]After curing 7 days at 23° C (73° F) and 50% relative humidity.

[4]*Mobil* is a registered trademark of Mobil Oil Corporation.

TYPICAL PROPERTIES *continued*

These values are not intended for use in preparing specifications.

As Cured—Fluid Immersion Resistance[3] *continued*	
IRM 903 Oil, 3 days at 150° C (302° F), percent, change in durometer	-65
change in tensile	-10
change in elongation	-10
volume swell	55
Ethylene Glycol/Water, 50:50 solution, 7 days at 122° C (252° F), percent, change in durometer	-5
change in tensile	-20
change in elongation	-20
volume swell	nil
SAE 80W90 Hypoid Gear Oil, 100 hours at 100° C (212° F), percent, change in durometer	-20
change in tensile	-10
change in elongation	-20
volume swell	15
Dexron®[5] II Automatic Transmission Fluid, 7 days at 150° C (302° F), percent, change in durometer	-55
change in tensile	-10
change in elongation	-15
volume swell	35

[5]*Dexron* is a registered trademark of General Motors Corporation.

Specification Writers: Please obtain a copy of the Dow Corning Sales Specification for this product and use it as a basis for your specifications. It may be obtained from any Dow Corning Sales Office, or from Dow Corning Customer Service in Midland, MI. Call (517) 496-6000.

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