Chemlok®

Chemlok® 608
Silicone-to-Metal Adhesive

product information

Description

Chemlok® 608 is a single coat adhesive designed for bonding unvulcanized silicone elastomers to various rigid substrates. Chemlok 608 adhesive also provides excellent adhesion to a wide variety of commercially available silicone compounds which require a post cure.

Features and Benefits

One Coat - reduces labor, reduced inventory and shipping costs.

Versatile - offers excellent adhesion to a variety of silicone compounds.

Excellent Environmental Resistance - provides excellent resistance to many aggressive service environments.

Economy - used for most applications at dilutions of 100 to 500 percent with dry alcohol solvents.

Surface Preparation

Thoroughly clean metal surfaces to ensure consistent bond results. Remove protective oils, cutting oils, greases, etc. by solvent degreasing or alkaline cleaning. Remove rust, scale or oxide coatings by suitable mechanical or chemical cleaning methods.

Application

Apply Chemlok 608 adhesive to properly prepared metal substrate in a uniform, thin layer. The adhesive is best applied as a dilute solution. Specific dilution rates are dependent upon rubber type, substrate, and bond performance requirements. Best results have been obtained using methanol in a range from 5-10 parts solvent to 1 part adhesive, by volume.

Tightly close the adhesive container when not in use to prevent solvent evaporation and possible moisture contamination. Do not return unused or diluted adhesive to original container. Take care to avoid moisture contamination indicated by a milky white appearance.

Table I: Typical Properties* of Chemlok 608 Adhesive

Composition	A mixture of silicone containing organic solvent system.
Appearance	Clear to hazy pale yellow liquid
Percent Residue by weight	18.0 - 21.0%
Density	
kgs/m^3	838.8
lbs/gal	7.0
Viscosity	0.5 centistrokes
Flash Point (Seta)	3.3°C (38°F)
Solvents	Methanol, VM&P Naptha, isopropanol, ethanol
Shelf Life	Two years from date of shipment, unopened container, 21°C - 27°C (70°F - 80°F) storage temperature.

*Data is typical and not to be used for specification purposes.

Drying

Chemlok 608 adhesive will air dry in 10-30 minutes. Drying time may be shortened by using heat sources to facilitate drying. Temperatures in the range of 66°C - 93°C (150°F - 200°F) for 5-15 minutes may be used for force drying. Maximum air flow at minimum temperature will provide the best results.

Bonding

Adhesive coated parts may be bonded immediately after air drying. In the event a layover period prior to bonding is necessary, avoid contamination of the adhesive coated parts during storage. Coated parts can be stored up to three days prior to bonding, however high humidity conditions will drastically shorten the layover period. For best results, the parts should be coated and bonded in the same day.

A variety of commercially available silicone stocks have been successfully bonded with Chemlok 608 adhesive, using press-cure times and temperatures recommended by the manufacturers of the rubber. (Table 1).

Environmental Resistance

Silicone-to-metal bonds formed with Chemlok 608 adhesive are resistant to most aggressive environments encountered in end-use service. Laboratory results show Chemlok 608 adhesive to retain 100 percent adhesion under the conditions shown in Table II.

Cautionary Information

Before using this or any other Lord product refer to the Material Safety Data Sheet (MSDS) and label for safe use and handling.

Table II: Unvulcanized Silicone-to-Metal Bonding

Stocks	Type of Cure	Bond Results
Dow Corning 747	Press Cure Only	Rubber Failure
General Electric Blendsil 44U/88U	Press Cure Only	Rubber Failure
Dow Corning 35	Press and Oven Cure	Rubber Failure
Dow Corning 55	Press and Oven Cure	Rubber Failure
Dow Corning 75	Press and Oven Cure	Rubber Failure
General Electric SE6160	Press and Oven Cure	Rubber Failure

Modified ASTM D429-B, 0.32 cm (1/8" specimen), 2"/minute

Table III: Environmental Resistance of Bonded Parts

Environment	Test Conditions	Bond Results
(1) Transmission Fluid (a)	300 hours @ 149°C (300°F)	Rubber Failure
(2) Glide Transmission Oil (b)	70 hours @ 149°C (300°F)	Rubber Failure
(3) ASTM No. 1 Oil	70 hours @ 149°C (300°F)	Rubber Failure
(4) Oven Aging	1 hour @ 246°C (475°F)	Rubber Failure
(5) Boiling Water	2 hours	Rubber Failure

Modified ASTM D429-B, 0.32 cm (1/8" specimen), 2"/minute

(a) Sunamatic 117, Sun Oil Company
(b) Humble Oil and Refining Company

Values stated in this bulletin represent typical values as not all tests are run on each lot of material produced. For formalized product specifications for specific product end uses, contact the Customer Service Department.

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