Chemlok®

Chemlok® 218
Single Coat Adhesive

product information

Description

Chemlok® 218 is a single-coat adhesive used to bond castable and millable urethane elastomers to metals and other rigid substrates.

Features and Benefits

Excellent Environmental Resistance - bonds are resistant to water, salt-spray, a variety of solvents, and other environmental conditions.

One Coat Adhesive - requires no primer, reducing labor and costs.

Bonding Versatility - bonds many castable and millable polyurethane elastomers.

Typical Properties* of Chemlok 218 Adhesive

Composition	A mixture of polymers and resins dissolved in an organic solvent system
Appearance	Clear to slightly hazy amber
Non-volatile Content	
by weight	18-21%
by volume	16.5%
Viscosity, cps	
Brookfield LVT spindle #3, 60 rpm @ 25°C (77°F)	750-1050
Coverage	265 $ft.^2$/gallon/one dry mil
Weight	
kgs/m^3	950 - 990
lbs/gal	7.9 - 8.3
Flash Point	
Pensky-Martens Closed Cup	9°C (48°F)
Diluents	Toluene, glycol ether solvents, isopropanol
Solvents	Toluene, trichloroethylene, isopropanol, ethanol
Shelf Life	One year 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.

Surface Preparation

Thoroughly clean metal surfaces prior to adhesive application. Remove protective oils, cutting oils, and greases by solvent degreasing or alkaline cleaning. Remove rust, scale, or oxide coatings by suitable mechanical or chemical cleaning methods.

- Mechanical Cleaning

Grit blasting is the most widely used method of mechanical cleaning, but machining, grinding, or wire brushing can be used. Use steel grit to blast steel, cast iron, and other ferrous metals. Use aluminum oxide, sand or other non-ferrous grit to blast stainless steel, aluminum, brass, zinc and other non-ferrous metals.

- Chemical Cleaning

Chemical treatments are readily adapted for automated metal treatment and adhesive application lines. Chemical treatments are also used on metal parts that would be distorted by blast cleaning or where tight size tolerances must be maintained. Phosphatizing is a commonly used chemical treatment for steel, while chromate conversion coating is commonly used for aluminum.

Mixing

No agitation is required prior to or during use.

Proper dilution for the various application methods is best achieved by experience. Chemlok 218 adhesive is normally used full strength for brush, dip, and roller application. For spray application, dilution of 50 to 100 percent by volume is suggested. Use either a 1:1 solvent blend (by volume), isopropanol and toluene, or glycol ether type solvents. The dry film thickness should be in the range of 0.5 to 1 mil (12.7 - 25.4 microns) for best results.

Application

Apply Chemlok 218 adhesive to clean surfaces by brush, dip, spray, roller coat, or by any method that gives uniform coating and avoids excessive runs and tears.

Chemlok 218 adhesive dries to a clean, soft, non-tacky film in a short time. Allow at least 60 minutes of drying at room temperature for complete solvent evaporation prior to the bonding operation. The adhesive film may be force dried at higher temperatures for shorter periods of time. Drying for 15 minutes at 121°C (250°F) has no harmful effect on adhesion.

To ensure optimum adhesion to the prepared metal surface, bake Chemlok 218 adhesive coated inserts a minimum of 2 hours @ 121°C (250°F). Large inserts will require longer baking time @ 121°C (250°F) to negate the heat sink effect. MEK double rubs can be used to ensure proper adhesion between the adhesive and the metal insert. Chemlok 218 adhesive that is properly cured to the metal insert should resist 30 MEK double rubs. One double rub is a stroke up and back, with medium pressure between the solvent wet rag over the index finger and the insert. To establish this cure parameter, the nap of the rag was equal to a t-shirt.

The bonding operation can take place as soon as the adhesive has cured. Coated parts may be stored up to one month before bonding if protected from contamination (such as dirty plant environment) and excessive humidity. Large metal parts can be preheated up to 30 minutes at 148°C (300°F) or 16 hours at 100°C (212°F) without affecting adhesion when hot molding.

Curing

Molding procedures that are used with heat vulcanizing urethane elastomers can be used with Chemlok 218 adhesive. The cure time and temperature for bonding is the same as that required to vulcanize the urethane compound being molded. Best results are obtained with curing temperatures above 71°C (160°F).

Clean Up

Use alcohol such as isopropanol, or a chlorinated solvent such as trichloroethylene to clean up small spills. For information regarding clean up of larger spills, refer to Section 6 of the Chemlok 218 adhesive Material Safety Data Sheet.

Packaging

- 1 Gallon Container (3.8 Liter)
- 5 Gallon Pail (19 Liter)
- 55 Gallon Drum (208 Liter)

Storage

Store in a well ventilated area between 21°C - 27°C (70°F - 80°F). Do not store or use near heat, sparks, or open flames. Refer to Section 7 of the Chemlok 218 adhesive Material Safety Data Sheet for additional storage information.

Cautionary Information

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

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.

Information provided herein is based upon tests believed to be reliable. Inasmuch as Lord Corporation has no control over the manner in which others may use this information, it does not guarantee the results to be obtained. In addition, Lord Corporation does not guarantee the performance of the product or the results obtained from the use of the product or this information where the product has been repackaged by any third party including but not limited to any product end user. Nor does the company make any express or implied warranty of merchantability, or fitness for a particular purpose concerning the effects or results of such use.

Printed in USA DS-9218OR 1/01

For additional information, contact Lord Corporation at: 814/868-3611 extension 3211, FAX: 814/864-3452 or write: **Lord Corporation, Chemical Products, 2000 West Grandview Blvd., P.O. Box 10038, Erie, PA 16514-0038**

LORD Chemical Products