# Chemlok® 218 Adhesive

## Description

LORD Chemlok® 218 single-coat adhesive is used to bond castable and millable urethane elastomers to metals and other rigid substrates. It is composed of a mixture of polymers and resins dissolved in an organic solvent system.

## Features and Benefits

***Environmentally Resistant*** – provides excellent resistance to water, salt spray, a variety of solvents and other environmental conditions.

***Convenient*** – requires no primer, reducing labor and costs.

***Versatile*** – bonds a variety of castable and millable polyurethane elastomers.

## Application

***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 chemical or mechanical cleaning methods.

- Chemical Cleaning
  Chemical treatments are readily adapted to 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 tolerances must be maintained. Phosphatizing is a commonly used chemical treatment for steel, while conversion coatings are commonly used for aluminum.
- Mechanical Cleaning
  Grit blasting is the most widely used method of mechanical cleaning. However machining, grinding or wire brushing can be used. Use steel grit to blast clean steel, cast iron and other ferrous metals. Use aluminum oxide, sand or other nonferrous grit to blast clean stainless steel, aluminum, brass, zinc and other nonferrous metals.

For further detailed information on surface preparation of specific substrates, refer to Preparation of Substrates for Bonding data sheet. Handle clean metal surfaces with clean gloves to avoid contamination with skin oils.

## Typical Properties*

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| Appearance | Clear to Slightly Hazy Amber Liquid |
| Viscosity, cps @ 25°C (77°F)<br>Brookfield LVT<br>Spindle 3, 60 rpm | 750-1050 |
| Density | |
| kg/m$^3$ | 946.6-994.5 |
| (lb/gal) | (7.9-8.3) |
| Solids Content by Weight, % | 18-21 |
| Flash Point (Seta), °C (°F)<br>Pensky-Martens Closed Cup | 2 (36) |
| Solvents | Toluene, Trichloroethylene, Isopropanol, Ethanol |

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

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***Mixing*** – No agitation is required before or during use. If needed, 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 coat applications. For spray application, dilution of 50-100% by volume is suggested. Use either a 1:1 solvent blend (by volume), isopropanol and toluene or glycol ether type solvents.

***Applying*** – Apply Chemlok 218 adhesive to clean surfaces by brush, dip, spray, roller coat or any method that gives uniform coating and avoids excessive runs and tears. For optimum adhesion, dry film thickness of Chemlok 218 adhesive should be 12.7-25.4 micron (0.5-1.0 mil).

***Drying/Curing*** – Chemlok 218 adhesive dries to a clean, soft, non-tacky film in a short time. Allow coated parts to air-dry for at least 60 minutes 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 at 121°C (250°F). Large inserts will require longer baking time at 121°C (250°F) to negate the heat sink effect. Methyl ethyl ketone (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 149°C (300°F) or 16 hours at 100°C (212°F) without affecting adhesion when hot molding.

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).

***Cleanup*** – Use alcohol, such as isopropanol, or a chlorinated solvent, such as trichloroethylene, to clean up small spills.

## Shelf Life/Storage

Shelf life is one year from date of shipment when stored at 21-27°C (70-80°F) in original, unopened container. Do not store or use near heat, sparks or open flame.

## Cautionary Information

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

*For industrial/commercial use only.* Must be applied by trained personnel only. Not to be used in household applications. Not for consumer use.

Values stated in this technical data sheet 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 Support Center.

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