

Chemlok® 252X Adhesive

Description

LORD Chemlok® 252X adhesive is a general purpose one-coat adhesive that will bond a variety of vulcanized or unvulcanized rubber compounds to metal or other dissimilar rubber compounds. It is composed of a mixture of polymers, organic compounds and mineral fillers dissolved or dispersed in an organic solvent system.

A single coat of Chemlok 252X adhesive will bond compounds based on natural rubber (NR), polyisoprene (IR), styrene-butadiene (SBR), polybutadiene (BR), polychloroprene (CR), nitrile (NBR), butyl (IIR) and EPDM polymers to metals. These metals include carbon and alloy steels, stainless steel, aluminum, copper and copper alloys, magnesium and zinc, as well as a variety of plastics.

For maximum protection or when environmental conditions are extremely aggressive, Chemlok 252X adhesive can be used over Chemlok 205 primer.

Features and Benefits

Versatile – bonds a wide range of elastomers and tolerates a variety of differences in compounding.

Non-Chlorinated Solvent System – suitable for solvent incineration, saving cost of recovery equipment.

Convenient – requires only a single coat for most applications, reducing labor, solvent usage, inventory and shipping costs.

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.

Typical Properties*

Appearance	Black Liquid
Viscosity, seconds Zahn Cup #3	20-40
Density kg/m ³ (lb/gal)	950.0-990.0 (7.9-8.3)
Solids Content by Weight, %	22-24
Flash Point (Seta), °C (°F)	26 (79)
Solvents	Xylene

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

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- **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 Chemlok Adhesives application guide. Handle clean metal surfaces with clean gloves to avoid contamination with skin oils.

Mixing – Thoroughly stir Chemlok 252X adhesive before use, and agitate sufficiently during use to keep dispersed solids uniformly suspended. Mix drums for 8 hours at 30-60 rpm before using. If needed, proper dilution for the various application methods is best achieved by experience.

Applying – Apply Chemlok 252X adhesive by spray, dip or brush methods. Chemlok 252X adhesive is best suited for spray application.

When using Chemlok 252X adhesive as a one-coat adhesive, the dry film thickness should be 20.3-25.4 micron (0.8-1.0 mil) for optimum adhesion and environmental resistance. When used as a covercoat over Chemlok 205 primer, the dry film thickness of the Chemlok 252X adhesive should be 10.2-17.8 micron (0.4-0.7 mil).

- **Spraying**

Dilute adhesive to a Zahn Cup #2 viscosity of 25-28 seconds. Use xylene or toluene in a ratio of approximately 60 parts adhesive to 40 parts solvent, by weight or by volume. Tip sizes of 1.07-1.40 mm (0.042-0.055 in) are appropriate. Maintain atomization pressures at 0.345-0.379 MPa (50-55 psi) for best atomization.

- **Dipping**

Use full strength. In many instances, a single dip application of Chemlok 252X adhesive will be sufficient to provide excellent adhesion. A single dip is appropriate when Chemlok 205 primer is used

under Chemlok 252X adhesive. Where rubber-to-metal bonded assemblies are likely to be exposed to aggressive environmental conditions, it may be necessary to double dip Chemlok 252X adhesive diluted at a ratio of 5 parts adhesive to 1 part solvent, by volume, in order to achieve dry film thicknesses of 20.3-25.4 micron (0.8-1.0 mil).

- **Brushing**

Apply full strength.

Drying/Curing – Allow the applied adhesive to dry until visual examination of the film has shown that all solvent has evaporated. This will take approximately 30-60 minutes at room temperature. Drying time can be shortened by either preheating the metal inserts or oven drying after application. Metal parts may be preheated to a maximum of 65°C (150°F) prior to adhesive application. For coated parts, moderate drying temperatures should be used, but temperatures as high as 149°C (300°F) may be used for very short periods of time. Maximum air flow at minimum temperatures will give the best results.

Dried films of Chemlok 252X adhesive are non-tacky; therefore, coated parts can be piled into tote pans for subsequent processing. Wear clean gloves when handling coated parts and cover the tote pans to prevent contamination by dirt, dust, grease, oil, etc. If coated parts are properly protected, long layover times between adhesive application and bonding usually have no adverse effect on the bond. If Chemlok 252X adhesive has been removed by chipping or abrasion during handling, these damaged areas can be recoated before bonding.

Chemlok 252X adhesive can be used to bond rubber by compression, transfer, injection or other molding procedures used to make bonded parts. As with other Chemlok adhesives, maximum adhesion is obtained when the rubber has completely cured. Ideal bonding conditions exist when both the adhesive and the rubber cure at the same time. To accomplish this, load the adhesive coated metal parts in the mold and quickly fill the cavity with rubber.

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While it is desirable to keep mold loading cycles to a minimum to prevent pre-cure of the adhesive and the rubber, Chemlok 252X adhesive will resist prebaking times up to 15 minutes at 160°C (320°F) or the equivalent at other temperatures without affecting bond performance. Transfer or injection molds need properly designed runners and sprues, as well as adequate pressures. This prevents rubber pre-curing before the mold cavities are completely filled.

Post-Vulcanization Bonding – Chemlok 252X adhesive exhibits excellent post-vulcanization (PV) bonding capability with vulcanized compounds of NR, SBR, chloroprene, nitrile, butyl, Hypalon® and EPDM. For further details on post-vulcanization bonding, refer to Post-Vulcanization Bonding Guide for Chemlok Adhesives.

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.

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