

Chemlok® 250 Adhesive

OBSOLETE

Description

LORD Chemlok® 250 adhesive is a one-coat adhesive used to bond a variety of elastomers to various substrates during vulcanization of the elastomer. It is composed a mixture of polymers, organic compounds and mineral fillers dissolved or dispersed in an organic solvent system.

A single coat of Chemlok 250 adhesive will bond compounds based on natural rubber (NR), polyisoprene (IR), styrene-butadiene (SBR), polybutadiene (BR), polychloroprene (CR), nitrile (NBR), butyl (IIR), EPDM and polyepichlorohydrin (ECO) polymers to a variety of 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, composites and fabrics.

Features and Benefits

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

Versatile – bonds a wide variety of elastomers to metals, plastics and fabrics; suitable for existing production lines; tolerates a wide variety of stock formulations.

Durable – provides rubber tearing bonds; provides superior adhesion to plated metals, lowering scrap rates.

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

Typical Properties*

Appearance	Black Liquid
Viscosity, cps @ 25°C (77°F) Brookfield LVT Spindle 2, 30 rpm	200-550
Density kg/m ³ (lb/gal)	1120.0-1160.0 (9.3-9.7)
Solids Content by Weight, %	23.5-27.5
Flash Point (Pensky-Martens), °C (°F)	33 (92)
Solvents	Xylene, Trichloroethylene

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

LORD TECHNICAL DATA

Apply Chemlok 250 adhesive to stainless steel, aluminum, brass and other nonferrous substrates within one-half hour after cleaning. For ferrous substrates such as steel, a long layover can be tolerated if no rust is formed.

Mixing – Thoroughly stir Chemlok 250 adhesive before use, and agitate sufficiently during use to keep dispersed solids uniformly suspended. If needed, proper dilution for the various application methods is best achieved by experience. Give careful attention to agitation since dilution will accelerate settling.

Applying – Apply Chemlok 250 adhesive by brush, dip, roll coat, spray or any other method that gives a uniform coating and avoids excessive runs and tears.

When using Chemlok 250 adhesive as a one-coat adhesive, the dry film thickness should be 17.8-30.5 micron (0.7-1.2 mil). When used as a covercoat over a primer, the dry film thickness of Chemlok 250 adhesive should be 15.2-20.3 micron (0.6-0.8 mil).

- **Brushing**
Apply full strength. The best bonds will be achieved by a uniform and complete surface coverage.
- **Dipping**
Dilute adhesive with 10-25% xylene or toluene, by volume, to a Zahn Cup #2 viscosity of 30-48 seconds. Proper withdrawal will help reduce the tears and drip edges.
- **Roll Coating**
Apply full strength. For best results, apply uniformly to surfaces.
- **Spraying**
Dilute Chemlok 250 adhesive with 25-50% xylene or toluene, by volume, to a Zahn Cup #2 viscosity of 21-24 seconds. The adhesive must be wet when it reaches the metal part. If drying occurs in the air before reaching the metal, cobwebbing and poor adhesion will result.

For electrostatic applications, dilute adhesive to a Zahn Cup #2 viscosity of 30 seconds, using technical grade methyl ethyl ketone (MEK) in ratio of 4 parts adhesive to 1 part solvent.

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 20-40 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 250 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 humidity is high, layover time will be shortened. If Chemlok 250 adhesive has been removed by chipping or abrasion during handling, these damaged areas can be recoated before bonding.

Chemlok 250 adhesive can be used to bond rubber by compression, transfer, injection or other molding procedures used to make bonded parts. 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.

Dry films of Chemlok 250 adhesive remain firm at molding temperatures. During transfer or injection molding operations, the adhesive shows minimal tendency to wipe or sweep.

While it is desirable to keep mold loading cycles to a minimum to prevent pre-cure of the adhesive and the rubber, Chemlok 250 adhesive will resist moderate prebaking times 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.

Cleanup – Use solvents such as xylene and MEK to remove adhesive before heat is applied. Once cured, removal by solvent is not possible.

LORD TECHNICAL DATA

Shelf Life/Storage

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

Avoid excessive exposure to high humidity. Keep container tightly closed when not in use. Once opened, fit the 55-gallon drum of adhesive with desiccant tubes. Information on desiccant tubes can be obtained from your LORD Technical Service Representative.

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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