



## Chemlok® 607 Silicone Rubber and Specialty Elastomer Adhesive

### Description

Chemlok® 607 is a clear, colorless, versatile adhesive used to bond unvulcanized silicone rubber to various substrates such as metals, glass, plastics and textiles.

Chemlok 607 adhesive also bonds specialty elastomers such as fluoroelastomers, polyacrylates, epichlorohydrin, urethanes and some peroxide vulcanized elastomers.

### Features and Benefits

**Versatile** - provides excellent bonding characteristics between a wide variety of commercially available elastomer stocks and many diverse metallic and nonmetallic substrates.

**Environmental Resistance** - creates strong bonds capable of withstanding salt spray, chemicals, oils, solvents, corrosive atmospheres and temperature extremes.

**Strong Rubber Bonds** - provides rubber-tearing bonds that are stronger than the rubber, at high or low temperatures.

**Tolerates Temperature Extremes** - withstands temperatures up to 200°C (400°F) and below -51°C (-60°F) when bonding with fluoroelastomers or silicone.

**Easy to Apply** - applies easily by brush, spray or dip methods. Chemlok 607 adhesive will air dry in 10 to 30 minutes.

### Typical Properties\* of Chemlok 607 Adhesive

Composition	A mixture of synthetic organic silicones in methanol solvent.
Appearance	Colorless liquid
Viscosity	1.2 CTS
Density	
kgs/m <sup>3</sup>	830
lbs/gal	6.93
Non-Volatile Content	
by weight	6.1% - 6.9%
Flash Point (Seta)	9°C (49°F)
Solvents	Methanol, ethanol
Reactive Material	11.4% - 12.7%
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.

## Surface Preparation

Thoroughly clean metal surfaces prior to applying the primer. Remove protective oils, cutting oils, greases, etc. by solvent degreasing or alkaline cleaning.

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

Chemical or mechanical cleaning or pretreatment of the metal will remove rust, scale or oxide coatings. 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 in cases where tight tolerances must be maintained.

Excellent bonds are obtainable when aluminum surfaces are treated with a chromate or phosphate conversion coating process. The operational sequence of these treatments is: caustic clean or degrease, water rinse, chemical conversion treatment, water rinse, and dry.

Other methods of treating aluminum include blasting with sand or aluminum oxide and roughening with emery cloth or sandpaper. Anodizing, even with subsequent water seal, can result in an unsatisfactory bonding surface.

Degreasing is usually sufficient cleaning for stainless steel; however, some surface roughening is recommended. It is often effective to use a vapor degrease and a surface roughening, followed by a final vapor degrease.

Carefully prepare nonmetallic surfaces. Fabric is usually desized by a scouring operation. Glass can be cleaned in an alkaline bath. Clean plastic surfaces with a solvent.

Handle clean surfaces with gloves to avoid skin oils.

## Mixing

Pour the adhesive into a receptacle and dilute as required. Dilute with methanol or ethanol. Most application methods deposit a thin coat of adhesive. Dilutions of 1:1 to 3:1 (solvent/adhesive) are common. This provides the optimum adhesion and maximum coverage with minimum product use.

Pour out only enough to use for a short period of time, as rapid evaporation occurs in open containers. Porous substrates, such as heavy fabrics, may require more extensive dilution in order to prevent excessive pick-up.

## Application

Apply Chemlok 607 adhesive in a uniformly thin layer by brushing, spraying or dipping. Bond strength can be compromised by repeated brushing or improper dipping drainage.

When coating fabrics, use a dry pick-up level of 0.05% to 1.0%, based on the dry weight of the fabric. Spray applications ensure that the adhesive is effectively applied to the fabric surface. For fabrics that are dipped or brushed, diluting the adhesive will help prevent fabric stiffness caused by excessive pick-up levels.

For information on using dyes and fluorescing additives with Chemlok 607 adhesive, contact your Lord Technical Representative.

## Drying

Chemlok 607 adhesive will dry in approximately 10 to 30 minutes at room temperature. Porous substrates may require a longer time for the solvent to completely evaporate. Allow for longer drying times during humid conditions.

Bond the coated parts within 3 days. However, a lay-over time of two days does not reduce bondability. Do not store coated parts in high humidity environments. The parts can be dried at elevated temperatures; excellent bonding properties have been achieved by drying at 104°C (220°F) for 15 minutes.

## Curing

Use press-cure times and temperatures recommended by the elastomer manufacturers for each compound. In many instances, a post-cure will improve the bond. Poor handling characteristics can result from short press-cures that use the minimum recommended temperatures. Use caution when removing press-cured parts from the mold.

Open steam, autoclave and other curing methods will produce good bonds with Chemlok 607 adhesive. Maintain complete contact between the compound and the bonding surface.

Oven or post-cures can enhance bond strength because the bonded parts are exposed to higher temperatures for longer periods of time than during press-cure.

Gradually increase post-cure temperatures to permit volatile materials to diffuse and stock properties to stabilize. Start the post-cure temperatures at 10°C (50°F) below the press-cure temperature. Gradually increase the temperature over a 2 to 3 hour period until the maximum end-use temperature is reached.

Do not expose the bonded part to high temperatures without proper conditioning at lower temperatures. This conditioning is especially important for end-use bond temperatures that exceed 204°C (400°F).

Corrosive action on metal parts at extremely high temperatures can weaken the bond, especially in cases of contamination or inadequate surface preparation.

### **Subsequent Processing**

Chemlok 607 adhesive bonds are resistant to many destructive environments. Electroplating or anodizing metal parts after fabrication will not harm the bond.

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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### **Packaging**

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

### **Storage**

Store Chemlok 607 adhesive in a well ventilated area at temperatures 21°C - 27°C (70°F - 80°F). Do not store or use near heat, sparks or open flames.

### **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.

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**

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