Chemlok®

Chemlok® 305-1/307-2 Epoxy Adhesive

Description

Chemlok® 305-1/307-2 is a general purpose, medium viscosity, two-part epoxy adhesive system used to bond Chemlok 7701 or Chemlok 7707 treated rubber to steel. This adhesive will provide strong, durable bonds that will be both chemically and environmentally resistant. This Chemlok system works especially well for gaskets, bushings, shock absorbing devices and rubber rolls.

Features and Benefits

VOC Compliant - contains no solvents, is non-flammable, and virtually odorless.

Strong Bonds - load bearing properties equal to or greater than the materials being bonded.

Gravity Feed - self level properties make it easy to use with Meter/Mix/Dispense equipment.

Environmental Resistance - resists dilute acids, alkalis, solvents, greases, oils, moisture, sunlight, and weathering. It also provides temperature resistance from -34°C to 121°C (-30°F to 250°F).

Flexible Mix Ratio - accommodates a range of service temperatures and stress loads by allowing the resin-to-hardener mix ratio to vary.

product information

Typical Properties* of Chemlok 305-1/307-2 Epoxy Adhesive

	Chemlok 305-1 Resin	Chemlok 307-2 Hardener	Mixed
Appearance	Clear Amber	Clear Amber	Clear Amber
Non-volatile Content by weight	100% Reactive	100% Reactive	100%
Density kg/m^3 lb/gal	 1126 - 1198 9.4 - 10.0	 946 - 982 7.9 - 8.2	 NA NA
Viscosity, cP Brookfield HBF Spindle #2, 10 rpm @ 25°C (77°F)	 10,000 - 18,000	 20,000 - 57,000	 NA
Flash Point (Seta)	>93°C (>200°F)	>93°C (>200°F)	>93°C (>200°F)
Shelf Life	1 year from date of shipment, unopened container at 21°C - 27°C (70°F - 80°F) storage temperature.		NA

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

Surface Preparation

Remove loose particles, grease, oil, dust, mold release agents, rust, and other contaminants.

- *Rubber*
  Solvent clean and follow by surface treatment with either Chemlok 7701 or Chemlok 7707 surface treatment.
- *Metal*
  Metal surfaces requiring chemical treatments, such as phosphatizing or E-coat, may need an isopropyl alcohol wipe. Non-primed metals require a second cleaning to ensure removal of loose particles.

Mixing

Use a mix ratio ranging form 2:1 to 1:1, by weight, depending on the application needs. Flexibility and hardness will vary when the mix ratio is changed.

Thoroughly mix the components until uniform in color and consistency. Avoid whipping excessive air into the adhesive.

Working life or pot life of the mixed system ranges from 15 to 30 minutes, depending on the weight of the material being mixed. Mixing smaller quantities or spreading the material over a large surface area will minimize heat buildup. The best bond quality is obtained by applying the mixture as soon after mixing as possible.

Application

Apply in bead form, then mate the two surfaces together so that the adhesive uniformly flows out and covers the available bond area. For large applications, using Meter/Mix/Dispense equipment is recommended. For small applications, use a paper cone to apply the adhesive in a bead. A film thickness of approximately 30 mils (762 microns) is suggested. Adding small amounts of solid glass beads to the mixture will control bondline thickness. When using glass beads, apply light pressure to avoid sinking the beads into the rubber. Apply approximately .003 MPa (0.5 psi) of pressure to maintain intimate contact between bonded parts.

Join the parts in such a way as to avoid entrapped air. Squeezing a little adhesive out at the edges is usually a sign of proper assembly. Maximum adhesion occurs with parts which mate well without the need for excessive clamping pressure during cure; use clamps only when the assembly is likely to be moved during cure. Excessive clamping can squeeze too much adhesive from the bond area and result in a poor bond. Assemble parts and fixture in the same motion.

Curing

The adhesive will cure at room temperature, however the cure rate can be accelerated by increasing the cure temperature. At room temperature, a strong bond will develop in approximately 8 - 16 hours and maximum bond strength within 24 - 48 hours. The highest possible bond strength and impact resistance are achieved in 1 hour at 121°C - 135°C (250°F - 275°F).

Clean Up

Remove excess adhesive and clean equipment before the adhesive sets up. Use hot soapy water or organic solvents to remove the adhesive. Use heat in excess of 204°C (400°F) to remove dried adhesive. This heat will cause the cured adhesive to become soft and allow the parts to be separated and the adhesive to be scraped off. Some success may be achieved with commercial epoxy strippers.

Subsequent Processing

Remove cured adhesive squeeze-out with a knife. Cured adhesive can be filed, sanded, or machined. Paints, lacquers, enamels and other coatings can be applied without danger of solvent attack.

Anti-corrosion processes including phosphatizing and ELPO or E-coat coatings do not affect the adhesive or its adhesion. Chemlok 305-1/307-2 adhesives are not affected by exposure to high temperature oven bakes associated with these processes. Chemlok 305-1/307-2 adhesives will withstand the standard cathodic coating paint bake temperatures of 204°C (400°F), for the duration of the paint bake cycle.

Packaging

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

Storage

Store unopened container at 4°C - 32°C (40°F - 90°F), and preferably at 21°C - 27°C (70°F - 80°F).

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

For additional information, contact Lord Corporation at: 1-800-Chemlok, write: Lord Corporation, 2000 West Grandview Blvd., P.O. Box 10038, Erie, PA 16514-0038, or by email: chemlokexpert@lord.com

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