Chemlok® 213 Adhesive

Technical Data Sheet

Chemlok® 213 adhesive is a one-coat adhesive used to bond castable and RIM urethane elastomers to metal. It is composed of a mixture of polymers, curatives and pigments dissolved in an organic solvent system.

Chemlok 213 adhesive can also be used to bond a wide variety of both polyether and polyester castable urethanes to metal, as well as bond certain thermoplastic polyurethanes (TPU).

Features and Benefits:

Versatile – bonds metal to a wide variety of polyether and polyester castable urethanes of varying hardness, based on both TDI and MDI.

Economical – eliminates the need to inventory several adhesives due to the adhesive's versatility.

Convenient – requires only a single coat for most applications, minimizing application costs; bonds RIM urethane elastomers directly to aluminum or steel without the need for primers or prebaking.

Process Compatible – accommodates a wide range of processing conditions, including extended prebake.

Environmentally Resistant – adds durability for harsh environment exposure, including salt spray and water and temperature exposures, when used with Chemlok 219 primer.

Time Saving – requires no agitation in preparation for use or during application, saving application time and reducing the potential for application errors. Non-settling Chemlok 213 adhesive is ready to dip or brush when opened.

Fast Drying – dries fast to allow rapid turnaround times, reducing the number of coated parts kept in inventory.

Durable – provides bond strengths greater than the tear strength of the urethane substrate.

Elastomers:

- Millable Urethane
- Castable Urethane
- Thermoplastic Urethane (TPU)

Application:

Surface Preparation – Thoroughly clean metal surfaces prior to 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.

For further detailed information on surface preparation of specific substrates, refer to Chemlok Adhesives application guide.

Typical Properties*

Appearance	Blue Liquid
Viscosity cps @ 25°C (77°F) Brookfield LVT Spindle 2, 30 rpm seconds Zahn Cup #3	 100 - 300 20 - 35
Density kg/m^3 (lb/gal)	 870 - 910 (7.3 - 7.6)
Solids Content by Weight, %	20.5 - 23.5
Flash Point (Seta), °C (°F)	5 (41)
Solvents	Methyl Ethyl Ketone (MEK), Acetate Blend, Xylene

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

Mixing – No agitation is required before or during use. If dilution is needed, use Chemlok 248 thinner and mix thoroughly. Note proper dilution for the various application methods is best achieved by experience. Give careful attention to agitation since dilution will accelerate settling.

Applying – Apply adhesive in a uniformly thin coat by brush, spray or dip methods. To avoid film bubbling, do not apply Chemlok 213 adhesive to substrates hotter than 82°C (180°F).

Regardless of application method, dry film thickness of Chemlok 213 adhesive should be 19.05-31.75 micron (0.75-1.25 mil). Thicker adhesive films caused by repeated brushing or improper dipping drainage can compromise bond strength.

Chemlok 219 adhesive is an excellent primer to use with Chemlok 213 adhesive. For castable urethane, the properties of Chemlok 219 and Chemlok 213 adhesives are complimentary - Chemlok 219 adhesive provides excellent protection as a primer for the metal; Chemlok 213 adhesive bonds well to RIM, TPU and castable polyurethanes. Chemlok 213 adhesive is also tolerant of processing conditions such as long prebakes. Together, they increase resistance to a variety of environmental elements.

When using Chemlok 219 adhesive as a primer, first apply Chemlok 219 adhesive and allow it to air-dry. Then apply Chemlok 213 adhesive and allow to air-dry. The combination is then prebaked at 121°C (250°F) for the desired time.

Drying/Curing – Allow coated parts to air-dry for 30-60 minutes at room temperature. Forced drying can speed the process at temperatures up to 93°C (200°F).

After application on a part, the adhesive is precured on the part to increase the overall environmental resistance. The large metal parts, which act as heat sinks, are preheated prior to casting.

Chemlok 213 adhesive allows a wide tolerance for prebake conditions. Without compromising the bond, the adhesive can prebake for as long as 16 hours in temperatures as high as 121°C (250°F).

When used with Chemlok 219 adhesive as a primer, both systems will tolerate prebakes as high as 163°C (325°F) for 2 hours.

When using the two-coat system of Chemlok 219 adhesive as a primer under Chemlok 213 adhesive, optimum performance requires prebaking. A minimum of two hours at 121°C (250°F) is recommended. For large parts such as roller cores, baking may extend from four to eight hours at 121°C (250°F), depending upon size.

Cleanup – Remove uncured adhesive with solvents such as MEK and xylene. Remove cured adhesive by grit blasting, grinding or belt sanding.

Shelf Life/Storage:

Shelf life is one year from date of shipment when stored by the recipient 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 Parker LORD product, refer to the Safety Data Sheet (SDS) 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.

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