Chemlok® 481/Curative 44 Adhesive

Technical Data Sheet

Chemlok® 481/Curative 44 two-component adhesive system is used to bond thermoplastic elastomers (TPEs) to metals during the injection molding process. This adhesive system can also be used to fabricate hose for cold and hot [54-65°C (130-150°F)] liquids.

Features and Benefits:

Versatile – bonds a wide variety of thermoplastic elastomers to metal.

Easy to Apply – applies easily by spray, brush or dip methods.

Convenient – requires only a single coat for most applications. For harsh environments, apply Chemlok 205 primer prior to adhesive application.

Application:

Surface Preparation – Remove grease, oil, fingerprints, dust, mold release agents, rust and other contaminants from the surfaces to be bonded. Wear chemical resistant gloves. Wipe the surfaces with a clean cloth soaked in a solvent such as acetone, Methyl Ethyl Ketone (MEK) or isopropyl alcohol. On metal surfaces, a suitable alkaline degreasing agent may be used. Rinse metals and allow the surfaces to thoroughly dry.

Mixing – Thoroughly stir Chemlok 481 adhesive. While stirring, add 10 parts Chemlok Curative 44 curing agent, by weight, to 100 parts Chemlok 481 adhesive. If Chemlok 481 adhesive appears thick and gel-like in consistency, heat adhesive to 49°C (120°F) to lower the viscosity before mixing.

Thoroughly mix the two-component adhesive system before using. Mixed working life is 24 hours.

If dilution is needed, use toluene or xylene at a ratio of 2.5-3.0 parts solvent to 1 part adhesive, by volume. Add solvent while stirring Chemlok 481 adhesive to prevent shocking the resin.

Applying – Apply adhesive system by spray, brush or dip methods.

Regardless of application methods, the dry film thickness of Chemlok 481/Curative 44 adhesive should be 20-37.5 micron (0.8-1.5 mil) for insert bonding TPEs [6.4 mm (0.25 in) thick or more]. For thinner sections, less adhesive can be used. For smooth surfaces (e.g., plated metals) or where bond failures to the metal occur, use of Chemlok 205 primer is recommended.

Drying/Curing – Allow adhesive to air-dry for 60 minutes at room temperature or hot air-dry for 10-15 minutes at 65°C (150°F).

For maximum bond strengths, preheat the coated inserts to 93-149°C (200-300°F) prior to bonding. Use a warm mold or increase the temperature of the melt to help improve adhesion. For injecting onto rubber or thermoplastic surfaces (e.g., TPE electrical plug onto rubber or plastic coated wire), preheating may not be necessary.

If preheating is not an option, the molded part can be post-heated to enhance adhesion. After molding, allow at least 24 hours before testing the bonded parts.

Cleanup – Use solvents such as xylene to remove adhesive before heat is applied. Remove cured adhesive by mechanical blasting methods.

Typical Properties*

	481	Curative 44
Appearance	Straw Yellow Liquid	Transparent Brown Liquid
Viscosity, cps	400 - 1500 @ 38°C (100°F)	< 10 (typical) @ 25°C (77°F)
Density kg/m^3 (lb/gal)	 880.7 - 916.7 (7.35 - 7.65)	 1010.0 - 1040.0 (8.4 - 8.7)
Solids Content by Weight, %	17 - 20	47 - 51.5
Flash Point (Seta), °C (°F)	5 (41)	29 (85)
Solvents	Toluene, Xylene, Acetone	Xylene

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

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Shelf Life/Storage:

Shelf life is one year from date of shipment when stored by the recipient in a well ventilated area at 21-27°C (70-80°F) in original, unopened container.

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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