Chemosil® 511 Elastomer Bonding Agent

Description

LORD Chemosil® 511 elastomer bonding agent is a one-coat bonding agent used to bond silicone (MVQ) and fluororubber (FKM) to metal and a variety of other substrates during the vulcanization process.

Features and Benefits

Versatile – can also be used as a primer in combination with Chemosil 6025 or Chemosil 231 G bonding agents to bond a wide range of elastomers to fabrics.

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

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

Typical Properties*

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
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<tbody>
<tr>
<td>Appearance</td>
<td>Clear Colorless Liquid</td>
</tr>
<tr>
<td>Density @ 20°C (68°F)</td>
<td>0.83 - 0.85 (6.92 - 7.09)</td>
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<tr>
<td>Solids Content by Weight, %</td>
<td>5 - 7</td>
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<tr>
<td>Solvents</td>
<td>Ethanol</td>
</tr>
<tr>
<td>Dry residue, 30 min @ 130°C (266°F)</td>
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*Data is typical and not to be used for specification purposes.
**Mixing** – Transfer amount of bonding agent required to a clean container. Chemosil 511 bonding agent is normally used at full strength. When coating fabrics, dilute one part bonding agent with three parts ethanol. To make Chemosil 511 film visible on metal, savinyl blue RS or savinyl orange RLS can be used as a colorant. Slowly add 0.1% colorant, by weight, while stirring bonding agent. Thoroughly mix until colorant is completely dissolved.

**Applying** – Apply bonding agent by brush, dip or spray methods. Unused or diluted material should not be returned to original container.

**Drying/Curing** – Allow applied bonding agent to air-dry for approximately 15 minutes at ambient temperature. Porous substrates may require a longer time for the solvent to completely evaporate. Coated parts can be dried at elevated temperatures (up to 90°C [194°F]) in hot air oven or drying tunnels. Coated metal parts should be processed immediately after drying to avoid corrosion. If necessary, coated parts may be stored for up to two days in a dry, grease-free environment. Bonding performance of coated parts will degrade during storage due to bonding agent reaction with ambient humidity.

Bonding occurs during the vulcanization process of the rubber at cure temperatures between 140-200°C (284-392°F) as recommended by the rubber manufacturer. For post-vulcanization of parts, the temperature should be slowly increased at a rate of 5-15°C (9-27°F) per hour to permit diffusion of volatile substances from the vulcanized material. Maximum allowable post-bake temperature depends on the compound composition, normally 200-210°C (392-410°F) for fluoroelastomers.

**Shelf Life/Storage**
Shelf life is one year from date of manufacture when stored below 25°C (77°F) in original, unopened container.

**Cautionary Information**
Before using this or any 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.

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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