

# TECHNICAL DATA SHEET

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## 8135 DIP PRIMER

Ruscoe 8135 Dip Primer is used as corrosion resistant primer or adhesive in friction bonding applications. 8135 is low viscosity and solids for dip coating applications and requires no dilution before use. 8135 provides high bond strength across a wide range of temperatures and offers excellent resistance to oils, greases, and cleaning fluids.

### TYPICAL PROPERTIES:

(NOT FOR SPECIFICATION PURPOSES)

<b>Solids</b>	12-13%
<b>Color</b>	Black
<b>Density</b>	7.0 #/gal (0.84 g/mL)
<b>Shelf Life</b>	12 months

### APPLICATION INSTRUCTIONS:

#### Surface Preparation:

All metal surfaces must be free of oils, dirt, and other contaminants. Typical cleaning processes include aqueous alkaline cleaners, solvent vapor cleaners, or burning or baking contaminants off of the surface. After cleaning, a surface preparation process like phosphating, grit blasting, or wheel abrading will enhance the adhesive bond. Ruscoe 8135 Dip Primer will bond very well to a clean, bare metal surface, but preparing the surface with one of these methods will improve the consistency and overall strength of the bond.

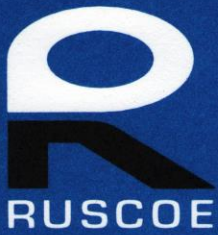
#### Adhesive Application:

Ruscoe 8135 Dip Primer should be thoroughly mixed before application to disperse any pigments that have settled during storage. Mix the product before application using a high shear mixing blade, pail tumbler, or drum roller for 30 minutes to 1 hour. If using 8135 as a dip coat, it is recommended to continually recirculate or stir the dip bath to ensure that pigments remain well dispersed throughout application.

Ruscoe 8135 Dip Primer can be reduced to a desired concentration by using ketones, esters, or alcohols in any proportion. Methyl ethyl ketone, acetone, isopropyl alcohol, and ethanol are typical dilution solvents. Contact your Ruscoe Technical Representative for dilution charts and instructions.

Ruscoe recommends a coating thickness of at least 0.2 mil (0.0002", 5 µm) for applications where the product is used as a primer in conjunction with a bonding adhesive. This minimum film thickness will provide moderate corrosion resistance. For increased corrosion resistance a dry coating thickness of 0.5 mil (0.0005", 12.7 µm) or greater is recommended.

For applications where Ruscoe 8135 Dip Primer is used as the primary adhesive film thickness of at least 0.75 mil (0.00075", 19 µm) is recommended. Typical dry film thickness for this type of application is 1.5-2.5 mil.



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## Drying:

Ruscoec 8135 Dip Primer must be fully dried before curing. Residual solvent in the coating can cause a weak, "spongy", "blown" bond. It is difficult to recommend exact drying parameters. Environmental conditions, coating thickness, and drying equipment type all significantly affect dry time. Here are some general guidelines for drying:

- Drying oven temperatures can range from 100°F-250°F. Do not exceed 250°F as higher temperatures can prematurely cure the adhesive or cause blistering of the adhesive film.
- Air flow in the drying oven is crucial to achieving fast dry times. More air flow will reduce dry time.

## Curing:

The phenolic resins in Ruscoec 8135 Dip Primer generate water vapor during cure. This water vapor must be forced out of the coating using pressure during the cure cycle. Most bonding problems with this type of adhesive are related to inadequate or uneven pressure. At least 100 psi must be continuously and uniformly applied during the curing process to ensure a good bond.

Ruscoec 8135 Dip Primer will cure in the temperature range of 300-450°F. Keep in mind that this is the temperature that the adhesive must reach, not the oven setting. The adhesive will take longer to cure at lower temperatures, but will allow more time for water vapor to escape and for adhesive to flow and wet the metal surface. Curing at too high of a temperature can cause the adhesive to gel quickly which will trap water vapor in the adhesive and cause a weak bond. Experimentation is required to determine the optimum cure cycle for each part design. A good starting point is to cure for 30 minutes at 400°F at 200 psi. This cure cycle will fully cure the adhesive. Experiments can then be run reducing time and/or temperature until bond failures begin to occur. In some applications, a partial cure will provide adequate bond strength and chemical resistance. For example, when bonding clutch rings a cure cycle as short as 2-3 minutes at 425°F may provide adequate strength.

## Cleaning:

Ruscoec 8135 Dip Primer can be cleaned prior to cure using methyl ethyl ketone, acetone, n-butyl acetate, methyl acetate, or t-butyl acetate solvents. If the coating is fully cured the only practical methods of removal are abrasion, burning, heating above 600°F for many hours, or soaking in a highly caustic solution. Consult SDS for instructions on spill clean-up and disposal.

## Storage:

Recommended storage temperature is 40°-60°F (4°-16°C). Storage at temperatures above 60°F will cause eventual loss of adhesive performance. Parts that have been coated and dried can be bonded within 6 months if stored in a clean, dry area at temperature below 100°F (30°C).