TECHNICAL DATA SHEET

THE RUSCOE COMPANY
Adhesives & Sealants

RELIOBOND 1803

DESCRIPTION

Ruscoe's Reliobond 1803 is used as corrosion resistant primers for metal surfaces. These coatings provide high bond strength across a wide range of temperatures and offer excellent resistance to oils, greases and cleaning fluids.

SUGGESTED USES

Used heavily in brake, clutch and transmission part applications.

METHOD OF APPLICATION

Bonding surfaces must be free of moisture, oils, dirt and other contaminates. Reliobond 1803 is typically applied by dipping the metal part directly into the coating solution. Ruscoe recommends a coating thickness of at least 0.25 mil (0.00025", 6.4 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.

STORAGE AND SHELF LIFE

Reliobond 1800 series primers are flammable and should be stored in tightly sealed containers away from direct sunlight, heat, sparks or other potential sources of ignition. Shelf life is 12 months when stored 40°F-60°F (4°C-16°C) in unopened containers. Parts that have been coated and dried can be bonded within 12 months if stored in a clean, dry area at temperature below 100°F (30°C).

HEALTH AND SAFETY

Health and safety data sheets available upon request at The Ruscoe Company.

DRYING

Reliobond 1803 must be fully dried before curing. Residual solvent in the adhesive 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 Reliobond 1803 generate water vapor during cure. This water vapor must be forced out of the adhesive 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.

Reliobond 1800 products will cure in the temperature range of 300°F-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. A good starting point is to cure for 30 minutes at 400°F at 200 psi.

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RELIOBOND 1803 (cont'd)

TYPICAL PROPERTIES	
Color	Black
Solids, by Weight %	12 – 14%
Solvent Formulation	MEK, ETHANOL, ISOPROPYL ALCOHOL
Pounds Per Gallon @77°F (25°C)	7.03 (0.84 g/mL)
Shelf Life	12 Months
Drying Temp	100°F - 250°F

CLEANING

Reliobond 1803 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.

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