

TECHNICAL DATA SHEET



RELIOBOND 5007

DESCRIPTION

Reliobond 5007 is a nitrile rubber and phenolic resin adhesive designed for bonding friction material to metal. This adhesive offers high bond strength across a wide range of temperatures. Cured Reliobond 5007 has excellent resistance to oil, grease, transmission fluid and brake cleaning fluid. Reliobond 5007 is designed specifically for curtain coating application but can be brush or roll coated. It is particularly well suited for bonding low density friction paper due to its low flow nature during cure.

SUGGESTED USES

Used heavily in brake, paper, clutch and transmission part applications.



METHOD OF APPLICATION

Reliobond 5007 should be thoroughly mixed before application. Mix the product before application using a high shear mixing blade, pail tumbler or drum roller for 30 minutes to 1 hour. Reliobond 5007 can be reduced to a desired viscosity/solids by using methyl ethyl ketone, acetone, n-butyl acetate, methyl acetate or t-butyl acetate in any proportion. Toluene, xylene and alcohols can be used in small amounts but will destabilize the product if too much is added.

STORAGE AND SHELF LIFE

Reliobond 5007 is 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. Storage at temperatures above 60°F will cause eventual loss of adhesive performance. 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 5007 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 (38°C-121°C). Do not exceed 250°F (121°C) 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.
- Contact Ruscoe Technical Service for a test procedure to determine if your part is fully dried.

TYPICAL PROPERTIES

Color	Black
Solids, by Weight %	28% - 32%
Solvent Formulation	Methyl Ethyl Ketone
Viscosity, Brookfield, Spindle #	#4
Viscosity, Brookfield, Test RPM	10 rpm
Viscosity, Brookfield, Test Result, CPS	2,000 – 3,000
Pounds Per Gallon @77°F (25°C)	7.5 – 7.7
Shelf Life	12 Months

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RELIOBOND 5007 (cont'd)



CURING

The phenolic resins in Reliobond 5007 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 5007 adhesive will cure in the temperature range of 300°F-450°F (148°C-232°C). 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 (204°C) at 200 psi.

PERFORMANCE PROPERTIES

Shear Strength (@75°F)	5,600 psi
Shear Strength (@400°F)	1,400 psi
Button & Bar Shear Strength Test (SAE J840 Rev C)	Cured 1 hour @ 425°F and 200 psi

CLEANING

Reliobond 5007 can be cleaned prior to cure using methyl ethyl ketone, acetone, n-butyl acetate, methyl acetate or t-butyl acetate solvents. If the adhesive is fully cured the only practical methods of removal are abrasion, burning, heating above 600°F (316°C) for many hours or soaking in a highly caustic solution. Consult SDS for instructions on spill cleanup and disposal.

All statements, technical information and recommendations contained herein are based on tests believed to be reliable, but the accuracy or completeness thereof is not guaranteed, and the following is made in lieu of all warranties expresses or implied.

Seller's and manufacturer's only obligation shall be to replace such quantity of the product proved to be defective. Neither seller nor manufacturer shall be liable for any injury, loss, or damage, direct or consequential, arising out of the use of, or the inability to use the product. Before using, user shall determine the suitability of the product for their intended use and user assumes all risk and liability whatsoever in connection therewith. The foregoing many are not changed except by an agreement signed by officers of seller or manufacturer.