



TECHNICAL DATA SHEET

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Reliobond 8030, 8179, and 9087 Nitrile Phenolic Adhesives

Reliobond 8030, 8179, and 9087 are nitrile rubber and phenolic resin adhesives that can be used for bonding friction material or composites to metals, laminating metals to wood, laminating metal foils and many other applications that require a thermosetting bond. The cured bond is very strong at high temperatures and is resistant to oils, fuels, and solvents. 8179 is a black colored version of 8030. 9087 is a flame retardant version of 8030.

PROPERTIES:

	8030	8179	9087
Color	Tan	Black	Tan
Solids (Non-Volatiles by Weight)	29-33%	30-35%	35-38%
Viscosity (Brookfield RVF)	2000-3000 cps (#4 @ 10 rpm)	2000-3000 cps (#4 @ 10 rpm)	1500-2500 cps (#4 @ 10 rpm)
Density	7.4-7.6 #/gal (0.89-0.91 g/mL)	7.4-7.6 #/gal (0.89-0.91 g/mL)	7.9-8.1 #/gal (0.95-0.97 g/mL)

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. 8030, 8179, and 9087 adhesives 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.

APPLICATION:

Adhesive should be thoroughly mixed before application. Mix the product using a high shear mixing blade, pail tumbler, or drum roller for 30 minutes to 1 hour. Mix until black (8179) or white (8030, 9087) pigment is even dispersed back into the adhesive. These adhesives can be reduced to a desired viscosity and solids using methyl ethyl ketone, acetone, n-butyl acetate, methyl acetate, or ethyl acetate in any proportion. Toluene, xylene, and alcohols can be used in small amounts but will destabilize the product if too much is added.

8030, 8179, and 9087 adhesives are typically brushed, roll coated or curtain coated onto the metal substrate. For most applications, a dry film thickness of 1-3 mils (0.001-0.003") is a recommended starting range. More porous substrates, like some friction materials, may require more adhesive as some of the adhesive will wick into the porous material during cure.

DRYING:

These adhesives 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 (38-121°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.

CURING:

The phenolic resins in these products 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.

8030, 8179, and 9087 will cure in the temperature range of 300-450°F (148-232°C). Keep in mind that this is the temperature that the adhesive must reach, not the oven setting. For large parts, the oven may need to be set higher than the desired bondline temperature. 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.

CLEANING:

8030, 8179, and 9087 can be cleaned prior to cure using methyl ethyl ketone, acetone, n-butyl acetate, methyl acetate, or ethyl acetate solvents. If the adhesive is fully cured the only practical methods of removal are abrasion, burning or baking, or soaking in a caustic aqueous solution.

STORAGE:

8030, 8179, and 9087 are flammable and should be stored in tightly sealed containers away from direct sunlight, heat, sparks, or other potential sources of ignition. Recommended storage temperature is 30-60°F. Shelf life is 12 months from date of manufacture when stored appropriately. See Safety Data Sheet for more information on storage 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 expressed 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 may not be changed except by an agreement signed by officers of seller or manufacturer. February 2018