



ADHESIVES AND SEALANTS

THIXON™ 423 Solvent Based Adhesive

Primary Use:

Thixon 423 is a solvent-based vulcanizing adhesive which can be used as a one-coat adhesive or as a covercoat adhesive over Thixon 403/404 adhesive primer for bonding castable polyurethane to various substrates. Thixon 423 can also be used as a one-coat adhesive for bonding thermoplastic polyurethanes to metal. Thixon 423 can also be used as a protective coating for metal, polyurethane, epoxy, polyester and fiberglass compounds.

*Typical Physical Properties as manufactured

Property		ASTM Method
Color	Clear	
Viscosity, Zahn #3	38 seconds	D-1084-88-D
Viscosity, Brook-field #1 spindle at 20 RPM	240 cps	D-1084
Non-volatile solids by weight	25%	D-2369 †
Volume solids	19.22%	
Spec. Gravity	0.94	D-1475
VOC content per gal	5.8 lbs	
Weight per gal	7.8 lbs	D-1475
Flash Point (Seta)	25°F	
Cure temp range	190° to 350°F	
Shelf life at 78°F unopened	24 months	

† Modified to internal Rohm and Haas method

*These properties are typical and are not to be used for specification purposes.

Environmental Resistance

Properly prepared bonds will resist abrasion, corrosion, oil, water and solvents.

Preparing the Metal Surfaces

Properly preparing the metal surfaces is the most important factor in obtaining consistent, high quality bonds. First remove contaminants by alkaline cleaning or solvent degreasing. Then, gritblast the metal surfaces with #40 or #50 grit, and solvent degrease them.

The metal surfaces can also be pretreated using iron phosphate, zinc phosphate, chromate conversion, and acid etching procedures.

Keeping the treatment solutions clean is essential. Often, poor bonds can be traced to using contaminated treatment solutions. Follow the manufacturer's treatment instructions carefully. **Change the cleaning solutions when they are contaminated.** Keep the cleaning solutions at the concentration and temperature specified. Likewise, keep the metal immersed for the length of time specified.

Mixing and Diluting

Diluent - Use Thixon 907 as the diluent, or use a blend of 5 parts glycol ether acetate, 4 parts MEK, and 1 part toluene.

Thoroughly mix Thixon 423 with a high speed propeller-type agitator before using. If diluting, slowly add the diluent to the adhesive while continuously stirring.

Applying the Adhesive

Brush - For brush applications, Thixon 423 can be used diluted or undiluted. Brush on a heavy wet film of Thixon 423 without brushing excessively. To obtain the required film thickness, brush on two coats.

Dip - For dip applications, dilute 3 parts Thixon 423 with 1 part diluent. To obtain a film thickness of 1 mil, dip twice.

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Air Atomization Spray - For spray applications, dilute 3 parts of Thixon 423 with 2 parts diluent. This will give a viscosity of 21 to 23 sec., #2 G.E. Zahn cup.

Equipment:	<u>Binks</u>	<u>DeVilbiss</u>
Gun Models	62 or 18	JGA 502, or MBC 510
Fluid Nozzles	63A - 0.040" 63B - 0.046" 63C - 0.052"	FX - 0.042" FF - 0.055"
Air Caps	63PB or 66SD	704 or 777

Pressure Tanks - Pressure tanks must be equipped with an agitator and be ASME rated for industrial use.

Flow Rate - 350 to 400 cc/minute

Atomization Pressure - 40 to 80 psi

To clean your equipment, use Thixon 907 or the recommended diluent blend.

Drying the Film - Dry the film of Thixon 423 before continuing. At normal room temperature (60°-80°F), dry for 30 to 45 minutes. At lower temperatures, dry longer. The drying time can be shortened by force drying approximately 5 to 10 minutes at 120° to 160°F. Do not dry at temperatures above 180°F.

Theoretical Coverage - One gallon of Thixon 423 applied at dry film thickness of 0.8 mil will cover approximately 385 square feet.

Dry Film Stability - Thixon 423 exhibits excellent dry film stability. Inserts which have been coated with Thixon 423 can be stored for several weeks before use, if they are protected from airborne contaminants.

Oven prebaking - For the best results, prebake the coated metals for ½ to 3 hours at 200 to 300°F, depending on the weight of the metal. Thixon 423 will withstand prebaking in forced air convection ovens, with proper ventilation, for up to 16 hours at 250°F.

Molding and Curing

Thixon 423 can be used with most molding and curing methods. Use a cure temperature between 190 to 350°F.

To prepare the urethane, preheat the prepolymer and the curing agent to the recommended temperatures. Degas the prepolymer at 5mm Hg vacuum. Combine the curative and the urethane, and mix thoroughly. Then, cast the urethane.

Cure the parts in the oven according to the time and temperature cycle required for the urethane polymer.

Injection Molding - Heat the metal inserts to 300°F or more. Then place the heated metal in the mold. Preheating the metal reduces the temperature difference between the metal and the polyurethane, thereby reducing thermal shock. The metal inserts can be preheated at temperatures up to 375°F, if they will be cooled rapidly from direct mold contact. At the end of the molding cycle, remove the bonded inserts, and allow them to cool before subjecting the bond to stress.

Toxicity and Safety Information - *Read the Material Safety Data Sheet before using this material.* Toxicity and Safety information are listed on the MSDS.

Storage & Handling Information - *Read the Material Safety Data Sheet, Section 7, for the safe handling and storage of the product.* Store in a cool, dry, well-ventilated area away from heat, ignition sources and direct sunlight. Keep containers tightly closed. Containers should be supported and grounded before opening, dispensing, mixing, pouring and emptying.

For questions regarding the handling of empty containers or dry film with respect to the hazardous waste regulations, we suggest you contact the RCRA Hotline sponsored by US EPA at 1-800-424-9346 or your local/state environmental agencies.

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