



# THIXON™ 406 Solvent-Based Adhesive

### DESCRIPTION

THIXON 406 is a one-coat bonding agent used for bonding castable polyurethane elastomers to metal. It is also suitable for bonding thermoplastic polyurethanes to metal.

THIXON 406 should only be used for bonding castable polyurethanes where the curing temperatures are greater than 75°C to 80°C. At lower temperatures, THIXON 403/404 or THIXON 422 should be used.

THIXON 406 has excellent pre-bake resistance.

### Product Typical Properties

THIXON 406	
Appearance	Blue, liquid
Dry solid content (Non-volatile solids by weight)	22.5-26.0%
Viscosity, Brookfield (LV #2, V30 at 25°C)	220-370 mPa.s
Density (20°C)	0.94 g/cm <sup>3</sup>
Specific gravity (20°C)	0.92-0.95 g/cm <sup>3</sup>
Weight per gallon	7.8 lbs
Volume solids	18.3% (calculated)
VOC content per gallon	5.76 lbs (calculated)
Dry film density	1.22 g/cm <sup>3</sup> (calculated)
Flash point (Seta)	-9°C/16°F
These properties are typical and are not to be used for specifications purposes.	

### Main Features

**Composition :** THIXON 406 consists of resins in MEK, toluene and PMA. It is formulated without reportable levels of lead or other heavy metals.

**Elastomers :** castable polyurethane, thermoplastic polyurethane.

**Materials :** THIXON 406 adheres to hot and cold rolled steel, stainless steel, aluminum, brass as well as thermoplastics such as polyamides and polyesters.

**Molding and Curing :** THIXON 406 can be used with all common molding and curing methods. Cure temperatures between 80°C and 120°C (176°F and 248°F) are recommended.

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.

**Environmental Resistance :** PUR-to-metal bonding systems using THIXON 406 display resistance to severe environmental exposures. Properly prepared bonds will also resist abrasion, corrosion, oil, water and solvents exposures.

### DIRECTIONS FOR USE

#### Preliminary Surface Preparation

Properly preparing the metal surface is essential to obtaining consistent, high quality bonds.

A mechanical or chemical pre-treatment should follow degreasing. Common pre-treatments are grit blasting and phosphating. Further details are provided in our "Substrates Preparation Guide", please contact your usual Rohm and Haas commercial representative should you need a copy of this guide.

#### Mixing and Diluting

**Diluents :** Use the special diluent D16 available from Rohm and Haas.

Thoroughly mix THIXON 406 with a high speed propeller-type agitator before using. If diluting, slowly add the diluent to the adhesive while continuously stirring.

#### Applying the Adhesive

THIXON 406 can be applied by brushing, dipping, spraying or other application methods.

## Application Methods

### **Brushing**

**Dilution ratio** : Use undiluted.

### **Dipping**

**Dilution ratio** : 1 p.b.w. bonding agent + 0.3 p.b.w. diluent.

### **Spraying with air**

**Dilution ratio** : 1 p.b.w. bonding agent + 0.5-0.6 p.b.w. diluent.

**Spray gun** : Most spray equipment can be used.

**Nozzle** : e.g. 1.0 mm/0.04 in.

**Air pressure** : 2-4 bar/30-60 psi.

## Drying Time

The drying time is approximately 40-60 minutes at 20°C/68°F.

Drying at higher temperatures will reduce drying time accordingly, e.g. 5 minutes force drying at 80°C/176°F. Heated circulating air will further accelerate drying.

## Suggested Dry Film Thickness

Apply THIXON 406 at a dry film thickness of 12 to 25 microns (0.5 to 1 mil.). This dry film thickness can be achieved by applying one or two coats of THIXON 406 allowing 40 to 60 minutes drying time at room temperature between coats.

## Dry Film Stability

THIXON 406 has excellent dry film stability. Parts coated with THIXON 406 can be stored for up to 2 weeks, if protected from contamination.

## Theoretical Coverage

Applied at a dry film thickness of 20 microns (0.8 mil.), THIXON 406 will cover approximately 9.7 m<sup>2</sup>/kg (446 square feet/gallon).

## Pre-bake Resistance

THIXON 406 must be pre-baked in order to obtain optimum adhesion. Depending on the size of the coated metal piece, pre-baking can be anywhere from 30 minutes at 100°C up to 24 hours at 180°C.

## Cleaning

Cleaning should be done using recommended dilution solvents. Further details are given in our "General Guide to Use", please contact your usual Rohm and Haas commercial representative should you need a copy of this guide.

## Storage and Handling

Keep containers tightly closed. Store them in a cool, dry, well-ventilated area away from heat, direct sunlight and sources of ignition. Containers should be supported and grounded before opening, dispensing, mixing, pouring or emptying.

## Shelf Life

THIXON 406 has a shelf life of 24 months if stored unopened at temperatures below 25°C/77°F. If the material is kept beyond its recommended shelf life, a quality control evaluation should be performed prior to use. This check should include bond testing as well as evaluation of typical physical properties.

## Safety Information

Material Safety Data Sheets (MSDS) are available for all Rohm and Haas products. These sheets contain important information that you may need to protect your employees and customers against any known health and safety hazards associated with our products. We recommend that you obtain copies of our MSDS from your local Rohm and Haas technical representative before using our products in your facilities. We also suggest that you contact your suppliers of other materials recommended for use with our products for appropriate health and safety precautions before using them.

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