



# CONAP® AD-1146 – CONAP® AD-1146-C CONAP® AD-1147 – CONAP® AD-1147-C

CONAP AD-1146 and CONAP AD-1147 are high-strength adhesives for bonding liquid urethanes to various substrates during the curing process. These systems are stable solutions of polymers in a solvent blend and require heat to affect cure. An extensive evaluation program has shown CONAP AD-1146 and CONAP AD-1147 to be capable of bonding an exceptional variety of inorganic and organic materials together. Bonds to aluminum alloys, magnesium, iron, steel, glass, glass-fiber laminates, wood, and leather have high strength and excellent resistance to hydrolysis and environmental extremes. CONAP AD-1146-C and AD-1147-C are based on the same formulations as CONAP AD-1146 and CONAP AD-1147, with lower solids content and lower viscosity. They too offer exceptional peel strength values, however CONAP AD-1146-C and AD-1147-C require two coats for optimum strength.

## TYPICAL PRODUCT CHARACTERISTICS

	CONAP AD-1146 & AD-1147	CONAP AD-1146-C & AD-1147-C
Viscosity @ 25°C, cps	2000	160
Color	Amber	Amber
Solids Content, %	24	14
Specific Gravity @ 25°C (77°F)	0.90	0.86
Weight per Gallon, lb./gal.	7.50	7.22
Shelf Stability, months from date of manufacture	15	15

These primer/adhesives are also available pigmented red. Product designations are as follows:

Red		AD-1146-C-1
Red	AD-1147-1	AD-1147-C-1

## SURFACE PREPARATION

High-strength bonds can only be obtained if all surfaces to be bonded are free of dirt, rust, chemicals, and mold releases. In addition, surfaces to be bonded should be sandblasted, etched, or degreased. For complete details of surface preparation for various substrates, request Bulletin AC-107 (**Surface Preparation Guide**).

## ADHESION DATA

CONATHANE® RN-1501 / CONACURE® AH-5 <sup>(1)</sup>	CONAP AD-1147* (one coat)
Original, pli	120
3 days 25°C Water, piw	148
7 days 25°C Water, piw	152
14 days 25°C Water, piw	95
3 days 70°C Water, piw	112
7 days 70°C Water, piw	107
14 days 70°C Water, piw	106
4 hours 100°C Water, piw	87
24 hours 100°C Water, piw	100
7 days 70°C Oven, piw	138

<sup>(1)</sup> CONATHANE RN-1501/ CONACURE AH-5 is a 90 Shore A elastomer having tensile strength of 4500 psi, elongation of 450%, and tear strength of 500 pli.

\* In all instances, failure occurred in the elastomer rather than in the primer.

## RECOMMENDED PROCESSING PROCEDURES

Apply one or two coats of CONAP AD-1146 or CONAP AD-1147 (two coats are required for CONAP AD-1146-C and CONAP AD-1147-C) with a soft brush, allowing the adhesive to flow on the surface. Application may also be accomplished by spraying, roller-coating, or by doctor-blade. Air dry ½ hour between coats and one hour or longer after the final coat. Prior to the application of urethane, activate the primer by baking at 180°F-200°F for 1-2 hours.

For spray applications, dilute 1-part of CONAP AD-1146 or CONAP AD-1147 with ½ to 2 parts of CONAP® S-1 solvent. Dilute CONAP AD-1146-C and CONAP AD-1147-C 30%-40% with CONAP S-1 solvent. Two double spray coats should be applied with ½ hour air dry between coats.

NOTE: For optimum results, primer film thickness should be 0.0005 inches to 0.0015 inches. Under no circumstances should film thickness be less than 0.0005 inches.

Since these coatings contain a solvent, it is important that all residual solvent in the film be removed to obtain high bond strengths. A drying period of ½ hour at 70°C (158°F) is sufficient to accomplish solvent evaporation.

When bonding urethanes to metals, the drying period can be part of the preheat cycle used to bring the mold and part to the desired curing temperature. Preheat temperatures of 90°C-100°C (194°F-212°F) for 2 to 3 hours are not detrimental. The adhesion of the urethane to the primer film is excellent, and the adhesion of the primer to the metal is improved.

#### **HANDLING PROCEDURE**

CONAP AD-1146 and CONAP AD-1147 are stable solutions of polymers in a solvent blend. They do not require agitation prior to use. The applied adhesive film should not be exposed to temperatures above 150°C (302°F) for excessive periods of time. If this occurs, the film will be converted to the insoluble state and the adhesion of the polyurethane will be reduced. CONAP AD-1146 and CONAP AD-1147 remain active when normal preheat temperatures for molds or components are used.

#### ***CAUTION: FOR INDUSTRIAL USE ONLY!***

THESE PRODUCTS ARE FLAMMABLE AND SHOULD NOT BE USED IN AREAS WHERE OPEN FLAMES ARE PRESENT. USE ONLY IN WELL-VENTILATED AREAS.

AVOID BREATHING OF VAPORS AND PROTECT SKIN AND EYES FROM CONTACT WITH MATERIAL.

SHOULD SKIN CONTACT OCCUR, WASH IMMEDIATELY WITH SOAP AND WATER. IN CASE OF EYE CONTACT, IMMEDIATELY FLUSH WITH PLENTY OF WATER AND OBTAIN MEDICAL ATTENTION.

#### **AVAILABILITY**

CONAP AD-1146, CONAP AD-1147, CONAP AD-1146-C, CONAP AD-1147-C, and CONAP S-1 solvent are packaged in quart, gallon, 5-gallon, and 55-gallon drum containers.

Evaluation samples are available for a nominal fee.

#### **CAUTION**

Responsible handling of Cytec Industries Inc. products requires a thorough preview of safety, health, and environmental issues prior to use. Review the Material Safety Data Sheets(s) for the specific Cytec Industries Inc. product(s) and container label information before opening containers. Ensure that employee exposure issues are understood, communicated to all workers, and controls are in place to prevent exposures above Permissible Exposure Limits (P.E.L.'s). Review safety and environmental issues to be certain controls are in place to prevent injury to employees, the community, or the environment, and ensure compliance with all applicable Federal, State, and Local laws and regulations. For assistance in this review process, please call your Cytec Industries Inc. representative or our office noted below.