



CONAP[®] AD-1147 / CONAP[®] AD-1147-C

DESCRIPTION

CONAP AD-1147 is a high-strength adhesive for bonding liquid urethanes to various substrates during the curing process. This system is a stable solution of polymers in a solvent blend and requires heat to affect cure. An extensive evaluation program has shown 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-1147-C is based on the same formulation as CONAP AD-1147, with lower solids content and lower viscosity. It too offers exceptional peel strength value, however, CONAP AD-1147-C requires two coats for optimum strength.

CHARACTERISTICS AND PROPERTIES

Table 1 | Product Description

Property	CONAP AD-1147	CONAP AD-1147-C
Viscosity @ 25°C (77°F), 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	7.5	7.22
Shelf Stability from date of manufacture when unopened in the original containers	15 months	15 months

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

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

(Data below represents CONAP AD-1147 as a primer and bonding CONATHANE RN - 1501 / CONACURE AH-5 to Steel)

CONATHANE® RN-1501 / CONACURE® AH-5 ⁽¹⁾	CONAP AD-1147* (one coat)
Original, pli	120
3 days 25°C (77°F) Water, piw	148
7 days 25°C (77°F) Water, piw	152
14 Days 25°C (77°F) Water, piw	95
3 days 70°C (158°F) Water, piw	112
7 days 70°C (158°F) Water, piw	107
14 days 70°C (158°F) Water, piw	106
4 hours 100°C (212°F) Water, piw	87
24 hours 100°C (212°F) Water, piw	100
7 days 70°C (158°F) Oven, piw	138

⁽¹⁾ 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-1147 (two coats are required for 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 82°C-93°C (180°F-200°F) for 1-2 hours.

For spray applications, dilute 1-part of CONAP AD-1147 with ½ to 2 parts of CONAP® S-1 solvent. Dilute 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.

AVAILABILITY

CONAP AD-1147, 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

HANDLING PROCEDURE

CONAP AD-1147 is a stable solution of polymers in a solvent blend. It does 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-1147 remains 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.

CAUTION: Responsible handling of Cytec Industries Inc. products requires a thorough review 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 (PELs). 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 in the contact information.

DISCLAIMER: The data and information provided in this document have been obtained from carefully controlled samples and are considered to be representative of the product described. Because the properties of this product can be significantly affected by the fabrication and testing techniques employed and since Cytec Industries (Cytec) does not control the conditions under which its products are tested and used, Cytec cannot guarantee that the properties provided will be obtained with other processes and equipment. Cytec has the right to change any data or information when deemed appropriate.

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