

ACA 30-100

Bonds Metal To Elastoplastic Rubbers

Adhesive

HEAT
ACTIVATED
ADHESIVE

PRODUCT DESCRIPTION—ACA 30-100 is a waterborne blend of epoxy and polyurethane resins containing adhesion promoters. The system contains no crosslinkers when shipped. A crosslinker may be added to further enhance hot strength and solvent resistance, after which the product will have a 3 day pot life. Contact ACA regarding use of the crosslinker.

TYPICAL USE— ACA 30-100 is designed to bond metal to elastoplastic rubber such as Santoprene™ that contain olefin structures, oils extenders and fillers. The bond is good over a range of different Santoprene™ formulations and should be good for similar competitive rubbers.

COATING METHOD—This waterborne adhesive may be applied to metal foil by gravure, wire wound bar, or nip fed reverse roll coater. Spray or brush may also be used for small applications. Drying at a temperature of 350°F for a short period yields a heat sealable coating. It can be activated at 250°F to 300°F with contact pressure to yield a substrate tearing bond. No primer coating or substrate cleaning is required for most applications. Peel adhesion is non-zippy from -20°F and up.

To mold bond the elastoplastic rubber to metal pre-coat the metal part with ACA 30-100. Dry the water from the adhesive, and inject the molten polymer into the mold containing the adhesive coated metal part. A very strong bond will result using this technique. Drying the adhesive to remove all volatile adhesive components is essential to avoid out-gassing at the bond line.

ACA 30-100 may be applied by gravure, wire wound, spray or brush. The water in the system must be evaporated prior to activation. This may be accomplished by use of a forced air oven set at 200° F for 10 minutes. The optimum dry film thickness must be determined by experimentation. A dry film thickness of 0.001" is a good starting point. It is only necessary to attain an interface temperature of about 250° F for bonding. Applications include combining coated aluminum to cold Santoprene™ in a hot mold, or combining hot extruded, or injection molded Santoprene™ onto a cold coated substrate. Some cool-down contact pressure may be required on the non-thermoset adhesive. A good bond is indicated by a peeled sample having a metallic black color, which indicates the tearing of the Santoprene™.

ACA 30-100 may be diluted with water as required by the application method. Stir before using.

CLEAN UP— Wash the equipment with water to remove the wet adhesive. The dry coating may require a toluene wash. Toluene is a flammable solvent and must be used according to OSHA safety standards. Totally cured adhesive is difficult to clean and should be avoided if possible.

WET ADHESIVE PROPERTIES

<u>Test</u>	<u>Value</u>	<u>Test</u>	<u>Value</u>
pH.	8 - 9	Percent VOC by volume. . . . .	.3.61
Viscosity (cps)	13000	Percent water by weight. . . . .	.56.52
wt./gal. (lbs.) . . . . .	.8.77	Percent water by volume. . . . .	.59.45
Percent solids by weight . . . . .	.40.49	Percent of VOC per gallon . . . . .	.0.26
Percent solids by volume. . . . .	.36.94	Pounds of VOC per gallon less water . . . . .	.0.65
Percent VOC by weight . . . . .	.56.52		

NON-WARRANTY NOTICE—Our recommendations, if any, for use of this product are based on tests believed to be reliable. The greatest care is exercised in the selection of our materials and in our manufacturing operations. We make no recommendation to use this product in any manner which conflicts with existing laws and/or patents and WE MAKE NO WARRANTIES. EXPRESS OR IMPLIED, REGARDING THIS PRODUCT OR ITS USE, INCLUDING MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE. THE MANUFACTURER IS NOT LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL OR SPECIAL DAMAGES OF ANY KIND.



PEEL ADHESION OF ACA 30-100

Metal	Plastic	Adhesive Thickness (mils)	Average Peel (pli)	Peak Peel (pli)
8 mil Aluminum. . .	GM Test Bar	0.2	23	23
8 mil Aluminum . . .	Santoprene™ 103-50	0.2	25	27
8 mil Aluminum. . .	Santoprene™ 103-73	0.3	23	26
8 mil Aluminum. . .	Santoprene™ 103-80	0.3	17	21
8 mil Aluminum . . .	Santoprene™ 103-80	0.5	25	27
8 mil Aluminum. . .	Santoprene™ 103-87	0.3	12	14
8 mil Aluminum . . .	Santoprene™ 103-87	0.5	19	22
8 mil Aluminum. . .	Santoprene™ 103-40	0.3	13	16
8 mil Aluminum . . .	ABS	0.3	14	17
8 mil Aluminum. . .	Neoprene	0.50	31	49
8 mil Aluminum. . .	EPDM	0.50	21	35
8 mil Aluminum. . .	NR Foam	0.50	Foam tear	
8 mil Aluminum . . .	EPDM Foam	0.50	Foam tear	

Peel Adhesion: 180° angle, 5 in/min., 72° F
 Heat Seal: 400° F, pressure and time variable

IMMERSION RESISTANCE

The adhesive bond is resistant to immersion in water solutions of calcium chloride, sodium chloride detergent (Tide), ethylene glycol and windshield fluids. It is also resistant to hydraulic fluids, motor oil (SAE 10-40) and grease. However, some crosslinking can enhance fluid and heat resistance if needed. Peeling at -20° F yields a smooth, non-zippy bond.

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