

ACA 30-114

Bonds Metal to Non-Polar Plastics

Adhesive

HEAT
ACTIVATED
ADHESIVE

PRODUCT DESCRIPTION—ACA 30-114 is a heat activated water-borne adhesive. ACA 30-114 is based upon a saturated polyurethane with an epoxy resin derivative and an adhesion promoter designed for non-polar adherents.

TYPICAL USE—ACA 30-114 is designed to bond to non-polar surfaces such as carbon black filled polypropylene. It may also bond other metals to similar plastics. The adhesive is designed to bond well to metallic surfaces, so it will also adhere to many polar plastic surfaces such as nylon or ABS plastics.

COATING METHOD—The adhesive is relatively high in viscosity. Generally, it will process well on nip-fed reverse roll or wire wound bar coating machinery. The viscosity may be slightly high for gravure coating. Brushing or application with a paint roller may be used for unique shapes. If necessary, the adhesive may be diluted with water for some applications. The additional water may present some wetting out problems or surface tension breaks. An adhesive film thickness of 0.5 mils is applied to a metal surface and dried in a forced air oven at about 300°F for a few seconds to evaporate the water, then heat sealed at 300°F. It may be necessary to run chill rolls on the oven output side to avoid roll blocking.

Adhesive activation typically occurs at 400°F, 100 PSI, for 10 seconds. Heat sealing conditions may vary depending upon the heat sealer and specific adherence.

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.

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PEEL ADHESION OF ACA 30-114

Metal	Plastic	Adhesive Thickness (mils)	Average Peel (pli)	Peak Peel (pli)
8 mil Aluminum. . . .	Black PP	0.3	24	27
8 mil Aluminum. . . .	Black PP	0.5	25	29
8 mil Aluminum. . . .	Natural PP	0.5	28	33
8 mil Aluminum. . . .	Santoprene™ 101-87	0.5	24	29
8 mil Aluminum. . . .	Santoprene™ 101-70	0.5	14	20 ^A
8 mil Aluminum. . . .	Santoprene™ 101-50	0.3	27	0.4
8 mil Aluminum. . . .	Santoprene™ 101-80	0.3	23	26
8 mil Aluminum. . . .	Santoprene™ 101-55	0.5	11	14 ^A
8 mil Aluminum. . . .	Santoprene™ 101-60	0.5	15	21 ^A
8 mil Aluminum. . . .	Santoprene™ 103-40	0.3	20	25
8 mil Aluminum. . . .	Santoprene™ 101-55	0.5	11	13
8 mil Aluminum. . . .	Santoprene™ 101-40	0.3	17	22
8 mil Aluminum. . . .	Santoprene™ 8201-70	0.2	10	19
8 mil Aluminum. . . .	Santoprene™ 8201-80	0.2	15	18
8 mil Aluminum. . . .	Nylon 6	0.5	28 ^B	34 ^B
8 mil Aluminum. . . .	Nylon 6	0.3	No bond, rough surface	
8 mil Aluminum. . . .	ABS	0.5	24	32
8 mil Aluminum. . . .	GM test bars	0.5	22	24
8 mil Aluminum. . . .	TPV	0.5	13	16 ^A
6 mil Stainless Steel	TPV	0.2	8 ^C	8 ^C
8 mil Aluminum. . . .	GE ABS-848	0.3	21	25
3 mil Aluminum. . . .	GE ABS-848	0.3	All broke upon peeling	
8 mil Aluminum. . . .	TPO	0.2	24	26
8 mil Aluminum. . . .	PVC	0.5	24	33

Peel Adhesion: 180° angle, 5 in/min., 72° F

Heat Seal: 400° F, pressure and time variable

A. Adherend tear

B. Adhesive transfer from Aluminum to nylon 6

C. The stainless steel is very stiff and markedly changes the angle of peel.

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