

Technical Datasheet

Bostik, Inc.



PLIOBOND™ 5001 Pressure Sensitive Adhesive

Description	<p>PLIOBOND 5001 pressure sensitive adhesive is a permanent adhesive with clarity and strength properties that make it ideal for pressure sensitive tape, label stock and adhesive-backed foam. It has shown excellent adhesion to paper, polyurethane foam, polyethylene foam, foil and polyester film. PLIOBOND 5001 pressure sensitive adhesive demonstrates high tack, minimum cold flow, good aging characteristics, high peel strength, and especially high shear strength. In test evaluations in film applications, PLIOBOND 5001 pressure sensitive adhesive samples were subjected to 1,500 gram loads, in contrast to the usual 500 gram load, on a 1/2 inch overlap and aged at room temperature. The results show that PLIOBOND 5001 pressure sensitive adhesive withstands extreme load conditions for long periods of time (see Table 2).</p>
Pliobond 5001 versus Acrylic Adhesives	<p>When compared to several acrylic adhesives, PLIOBOND 5001 pressure sensitive adhesive shows superior shear and peel adhesion, with and without aging. It is far superior to acrylic adhesives in initial shear and peel adhesion tests (see Table 3). After aging it still exhibits higher peel values than the acrylics. The testing showed one week's aging caused a sharp increase in the shear value of the acrylic adhesives. This increase is due to the adhesive cross-linking during aging. The acrylics, however, were not cross-linked during the drying cycle and may require a much higher temperature to initiate this reaction in a short drying cycle. Aging has no effect on PLIOBOND 5001 pressure sensitive adhesive other than causing a slight increase in peel adhesion. Peel values of the acrylics changed very little during aging. After two weeks their peel values were virtually unchanged, although shear was further increased.</p> <p>PLIOBOND 5001 pressure sensitive adhesive also demonstrates better tack properties than the acrylics tested. Rolling ball tack tests run on aged samples clearly indicate that the tack of acrylic pressure sensitive adhesives does not compare with that of PLIOBOND 5001 pressure sensitive adhesive. Thus, PLIOBOND 5001 pressure sensitive adhesive is easier to handle and more likely to make a satisfactory bond. With the exception of polyvinyl chloride substrates, PLIOBOND 5001 pressure sensitive adhesive was shown to be superior to the acrylic adhesives for pressure sensitive applications.</p>
Suggested Uses	PLIOBOND 5001 adhesive can be used as a pressure sensitive adhesive for paper, foams, and films.

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Table 1 - Typical
Physical Properties at
77° F (25°C)*

Base	Synthetic rubber resin blend
Color	Transparent amber
Solids by Weight, %	43.0 ± 3.0
Viscosity, cps, Spindle No. 3 at 10 rpm	3750 ± 1750
Specific Gravity	07755
Pounds per gallon @ 77°F (25°C)	6.4595
Flash Point, °F (TCC)	Less than Zero
Estimated Coverage	500 – 550 sq. ft/gal/dry mil

Method of Application Apply PLIOBOND 5001 adhesive in a 1-2 mil thickness. PLIOBOND 5001 adhesive can be dried at room temperature or forced dried in a range of 100°F to 200°F (38°C to 93°C) for three to five minutes. When the PLIOBOND 5001 adhesive is dry, the adhesive film will remain tacky and can be bonded as desired.

Table 2 - Typical
Adhesion Properties
on Dried Film

Test*	Pressure Sensitive Adhesive
Peel Strength	62 – 64 oz/in width
Aged Peel Strength	78 – 80 oz/in width
Shear Strength (1500 grams test)	1 month (no movement)
Aged Shear Strength (1500 grams test)	8 days to failure

Test Methods used
for Evaluation*

Peel Strength	180° Peel test using ASTM D-903-49
Shear Adhesion	PSTC-7 using ½
Aged Shear Test	Sample aged at 158°F (70°C)

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Initial Shear and Peel Adhesion Tests (Table 3)

Test*	PLIOBOND 5001 (Pressure Sensitive Adhesive)	Acrylic A	Acrylic B	Acrylic C
Shear Strength (1000 grams)	Removed after 17 days	106 minutes	117 minutes	24 minutes
Aged Shear Strength				
1 week at 158°F (70°C)	Removed after 11 days	84 hours	Removed after 11 days	15 hours
2 weeks at 158°F (70°C)	Removed after 9 days	115 hours	Removed after 9 days	54 hours
3 weeks at room temperature	No movement	40 minutes	206 minutes	109 minutes
Peel Strength, lbs/in fresh	4.4	2.7	3.0	2.2
1 week at 158°F (70°C)	4.6 – 4.9	2.8	2.5	1.9
2 weeks at 158°F (70°C)	4.6 – 4.9	2.8	2.5	2.1
3 weeks at room temperature	4.3 – 4.6	3.0	3.3	2.5
Tack aged 2 weeks at 158°F (70°C)	2 in	Off scale	Off scale	6 ¾ in

Typical Values: Based on material tested in our laboratories but varies from sample to sample. Typical values should not be construed as a guaranteed analysis of any specific lot or as specification items.]

DOT Label Required Extremely Flammable Liquid, UN 1133

Storage and Shelf Life When PLIOBOND 5001 EPDM bonding adhesive is stored indoors, out of direct sunlight, and in the original, unopened container between 60°F and 80°F (16°C and 27°C), the shelf life is 6 months. Always rotate stock. NOTE: PLIOBOND 5001 bonding adhesive should not be stored below 40°F (6°C). Once frozen, PLIOBOND 5001 bonding adhesive will not return to its original state.

DOT Label Requirements Non-Regulated

