



# Spray-Bond Adhesive

## 6116

Technical Data

July, 2003

### Product Description

3M™ Spray-Bond Adhesive 6116 is a heat applied, solvent-free, 100% solids, sprayable thermoplastic adhesive. It is a fast, neat alternative to aerosols, contact adhesives and solvent-based adhesives for bonding most foams and many other lightweight materials. 3M spray-bond adhesive 6116 is lower than normal viscosity and is designed for use on fabrics, as the long open time allows flexibility in production.

### Features

- Bonds wide variety of substrates, including most foams, plastics, particle board, light gauge metals.
- Controlled application with minimal over-spray.
- One or two surface application.
- Immediate initial strength.
- Long bonding range.

### Typical Physical Properties

**Note: The following technical information and data should be considered representative or typical only and should not be used for specification purposes.**

<b>Base</b>	Polyolefin
<b>Color</b>	White
<b>Specific Gravity</b>	0.92
<b>Viscosity @ 375°F (190°C) cps<sup>(1)</sup></b>	1300
<b>Open Time 1 Surface Foam<sup>(2)</sup></b>	2 minutes
<b>Open Time 2 Surface Foam<sup>(3)</sup></b>	5 minutes
<b>Full Strength</b>	8-24 hours
<b>Handling Strength</b>	15 minutes

<sup>(1)</sup>Brookfield Thermocel Viscometer in Centipoise using a #27 Spindle @ 20 RPM.

<sup>(2)</sup>Bonds were made by spraying adhesives onto 3/4 in. thick, 2-lb. density polyester urethane foam. PVC coupons wiped with isopropyl alcohol and then bonded to foam using 5 seconds of firm pressure. After standing for 24 hours, bonds were pulled apart by hand. The criterion for open time is 100% foam tear.

<sup>(3)</sup>Two pieces of 3/4 in. thick, 2-lb. density polyester urethane foam were sprayed and bonded using 5 seconds of firm pressure. After 24 hours, bonds were pulled apart by hand. The criterion for open time is 100% foam tear.

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## Directions for Use

1. **Surface Preparation:** Surfaces must be clean, dry and dust free. Wiping with a solvent such as isopropyl alcohol for plastic substrates and 3M™ Scotch-Grip™ Solvent No. 3 or MEK (methyl ethyl ketone) for metal will aid in removing oil and dirt.\*

\***Note:** When using solvents, extinguish all ignition sources, including pilot lights, and follow the manufacturer's precautions and directions for use.

2. **Application:** 3M™ Spray-Bond Adhesive is designed for spray application using a 3M™ Spray-Bond Applicator. Read and follow the precautions and directions for use in the user's manual before operating the applicator.

**Note:** Adhesive may be applied as a bead by setting the spray control valve on the 3M spray-bond applicator to 10. Adhesive can also be applied as a film using the 3M™ Polygun™ Applicator Tips. Contact your local 3M representative for more information.

3. **Coverage:** Coverage will depend on foam density, surface porosity of substrates and strength of adhesive bond required. In all cases, user evaluation will be required to determine the optimum coverage levels.

### Suggested Adhesive Coverage – Starting Points:

	Smooth Surface	Textured Surface
2 surface application	1-2 grams per square foot	2-3 grams per square foot
1 surface application	3-5 grams per square foot	5-7 grams per square foot

4. **Set up time:** After bond is made, there is immediate strength and no clamping is necessary.

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## Typical Performance Characteristics

**Note: The following technical information and data should be considered representative or typical only and should not be used for specification purposes.**

### Heat Resistance, Dead Load Shear

Load (psi)	Temperature
2 lb.	160°F (69°C)

**Peel Adhesion:** Peel bonds of open weave polyester fabric to various substrates were tested at peel angle of 180° at twelve inches per minute rate at a temperature of 73°F (23°C). The value listed is the average force required to peel the fabric from the substrates in pounds per inch bond width (PIW). As this product is lower in viscosity than other 3M™ Spray-Bond Adhesives, the nozzle size used on our equipment for 3M™ Spray-Bond Adhesive 6116 is 0.8 mm in place of the 1.2 mm that comes standard with our equipment.

Substrate	Peel (PIW)
Steel coupon	20.4 AF
Polypropylene panel	16.4 CF
ABS Plastic	20.3 AF
Fir (wood)	21.4 AF

SF = Substrate/Adhesive Failure  
 CF = Cohesive Failure  
 AF = Adhesive/Fabric Failure

**Peel Adhesion:** Peel bonds of Steel coupon stock to various fabrics were tested at peel angle of 180° at twelve inches per minute rate at a temperature of 73°F (23°C). The value listed is the average force required to peel the fabric from the steel in pounds per inch bond width (PIW).

Substrate	Peel (PIW)
Open weave polyester fabric	20.4 SF
Very smooth, tight polyester fabric	5.2 SF
Open weave, polypropylene fabric	12.1 SF
Very tight smooth nylon fabric	4 SF

SF = Substrate/Adhesive Failure  
 CF = Cohesive Failure  
 AF = Adhesive/Fabric Failure

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**Storage** Best storage temperature is 60-80°F (15-32°C). Do not store above 120°F (49°C).

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**Shelf Life** Shelf life at recommended conditions is 24 months from date of shipment.

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**Precautionary Information** Refer to Product Label and Material Safety Data Sheet for health and safety information before using this product. For additional health and safety information, call 1-800-364-3577 or (651) 737-6501.

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**For Additional Information** To request additional product information or to arrange for sales assistance, call toll free 1-800-362-3550 or visit [www.3M.com/adhesives](http://www.3M.com/adhesives). Address correspondence to: 3M Industrial Adhesives and Tapes Division, Building 21-1W-10, 900 Bush Avenue, St. Paul, MN 55144-1000. Our fax number is 651-778-4244. In Canada, phone: 1-800-364-3577. In Puerto Rico, phone: 1-787-750-3000. In Mexico, phone: 52-70-04-00.

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