

3M

Hi-Strength 90

Spray Adhesive

Technical Data

January, 2002

Product Description

A high strength, fast drying, contact-type adhesive used for permanently bonding decorative laminates, particleboard, wood, metal, many plastics including polyethylene and propylene, foam, concrete and many other materials.

Features

Convenient, fast, high contact-bond strength, low soak-in keeps more adhesive on the surface to provide better coverage, high heat resistance maintains bond strength even after extended exposure to heat, precise spray control and variable spray width makes it easy to apply.

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.

Solids Content (by wt.):	13%
Base:	Synthetic Elastomer
Color (wet and dry):	Translucent
Net Weight* (approx.):	17.6 oz. (500 gms.)
Spray Pattern:	Controlled Lace
Spray Width:	Variable, 1-3 inch
Bonding Range (1 Surface): (2 Surface): (Extra Strong Bonds)	Not Recommended for 1 Surface Applications 1-15 minutes Double coat both surfaces in a crisscross pattern, allow 2-5 minutes drying time
Solvents:	Methyl Acetate, Cyclohexane, Pentane
Flash Point:	-50°F (-46°C)
Coverage* @ .5 gms/sq. ft.:	130 sq. ft.
% Volatile Organic Components (VOC):	55%
Hazardous Air Pollutants (HAPS):	< 0.4%
FDA Acceptable Ingredients: (21CFR175.105)	Yes

*Based on a 24 oz. aerosol can.

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Typical Adhesive Performance Characteristics

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

Peel Adhesion: Peel bonds of cotton duck (canvas) to the listed substrate were tested at a peel angle of 180° at two inches per minute separation rate @ 75°F (24°C).

Substrate	Value - PIW (lbs. / inch width)
Aluminum	20.5
CRS (Cold Rolled Steel)	19.6
Stainless Steel	20.6
ABS	22.8
Acrylic	25.2
FRP (Fiberglass Reinforced Plastic)	24.4
HPL (High Pressure Laminate)	16.6
Nylon 6,6	14.8
Polycarbonate	25.6
Polyethylene	9.1
Polypropylene	13.5
PVC	17.5

Peel Adhesion: T-Peel bonds were tested at two inches per minute separation rate.

Substrate	Value - PIW (lbs. / inch width)
Aluminum	10
Polyethylene	4
Polypropylene	3.1

Peel Adhesion at Temperature: T-Peel bonds of cotton duck (canvas) to itself were tested at two inches per minute separation rate.

Test Temperature	Value - PIW (lbs. / inch width)
-30°F (-34°C)	3.9
75°F (24°C)	16.5
120°F (49°C)	13.4
140°F (60°C)	13.7
160°F (71°C)	8.1
180°F (82°C)	2.6

Overlap Shear Strength: Overlap shear strength on birch plywood to itself tested and on maple to itself at two inches per minute separation rate @ 75°F (24°C).

Substrate	Value - PSI (lbs. / square inch)
Birch	270
Maple	180
HPL / Particle Board	217

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Typical Adhesive Performance Characteristics (continued)

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

Overlap Shear Strength at Temperature: Overlap shear strength on birch plywood to itself tested at two inches per minute separation rate.

Test Temperature	Value - PSI (lbs./square inch)
-30°F (-34°C)	973
75°F (24°C)	270
120°F (49°C)	172
140°F (60°C)	124
160°F (71°C)	105
180°F (82°C)	41

Application/Handling Information

Directions for Use

- 1. Surface Preparation:** Surfaces must be clean, dry and free from dirt, dust, oil, loose paint, wax or grease, etc.
- 2. Application Temperature:** For best results, the temperature of the adhesive and the surfaces being bonded should be at least 65°F (18°C).
- 3. Application:**
 - Select spray pattern width by turning spray tip to desired setting.
 - Hold can 6-8 inches from surface to be sprayed.
 - Spray both surfaces to be bonded.
 - Make bond while adhesive is still tacky.
 - Clean spray tip with turpentine*.
- 4. Bonding Range:**
 - 1 surface - Not Recommended
 - 2 surface - 1 to 15 minutes
 - Extra Strong Bonds - Double coat both surfaces in a criss cross pattern, allow 2-5 minutes drying time.
- 5. Cleanup:** Excess adhesive may be removed with 3M™ Adhesive Remover Citrus Base*.

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

Storage and Shelf Life

Storage: Store product at 60-80°F (16-27°C) for maximum storage life. Higher temperatures can reduce normal storage life. Lower temperatures can cause increased viscosity of a temporary nature. Rotate stock on a "first in-first out" basis.

Shelf Life: When stored at the recommended conditions in the original, unopened container, this product has a shelf life of 15 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 Information

To request additional product information or to arrange for sales assistance, call toll free 1-800-362-3550. Address correspondence to: 3M Engineered Adhesives Division, 3M Center, Building 220-7E-01, St. Paul, MN 55144-1000. Our fax number is 651-733-9175. 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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ISO 9002

This Engineered Adhesives Division product was manufactured under a 3M quality system registered to ISO 9002 standards.



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