

# 3M

## Hi-Strength 90

### Adhesive

Technical Data

August, 1999

#### Features

- Bulk version of 3M™ Hi-Strength 90 Spray Adhesive.
- Bonds most wood, particle board, metal, laminate, SBR rubber and many plastics including polyethylene and polypropylene. Not recommended for unsupported, flexible vinyl.
- A high-strength fast, contact-type adhesive.

#### 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>Viscosity:</b>	200 - 2000 cps
<b>Brookfield Viscometer:</b>	RVF #2 spindle @ 20 rpm @ 80°F (27°C)
<b>Solids Content (by wt.):</b>	22 - 24%
<b>Base:</b>	Synthetic elastomer
<b>Color (wet and dry):</b>	Light yellow
<b>Net Weight:</b>	6.4 - 6.6 lbs./gal.
<b>Flash Point (TCC):</b>	-40°F (-40°C)
<b>Coverage:</b>	1381 ft. <sup>2</sup> per gallon (@ 0.5 gms./ft. <sup>2</sup> dry wt.)* 278 ft. <sup>2</sup> per gallon (@ 2.5 gms./ft. <sup>2</sup> dry wt.)**
<b>Solvent:</b>	Acetone, cyclohexane and pentane

\*For lightweight bonding

\*\*For heavier duty bonding

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## Handling/Application Information (*continued*)

### Directions for Use:

#### Work Area Inspection:

Read and follow the precautions before using product.

#### Surface Preparation:

For best results all surfaces to be bonded must be clean, dry, and free from dirt, dust, oil, loose paint, wax or grease, etc.

#### Working Temperature:

The adhesive and surfaces to be bonded should be 65°F (18°C) or above. Warm the container of adhesive by placing in a warm room, not in stove, oven or other possible ignition source. If the room must be warmed, turn off the heater before opening the container. Leave heater off until all vapors are gone.

#### Application:

Stir thoroughly before using. Brush, roll, or spray a uniform coat of adhesive on each surface to be bonded. Porous surfaces may require 2 coats of adhesive. A glossy film when completely dry indicates adequate adhesive. Dull spots after drying indicate not enough adhesive; these spots must have another coat. For roll application, use a mohair roller cover with a phenolic core, the type used for synthetic lacquer paints. See Application Equipment section for additional equipment information.

#### Drying Time:

Allow to dry until adhesive is tacky but does not transfer when touched. Adhesive has a bonding range of approximately 10 minutes. Bond while adhesive is still tacky. If bonding range is exceeded, recoat one surface.

#### Assembly:

Position surfaces carefully before assembly. No adjustment is possible after contact. Join surfaces with firm pressure. Bonded assemblies can be machined, trimmed or finished immediately after bonding. Complete drying may take 24 hours or more.

#### Cleanup:

Excess adhesive may be removed with a solvent such as 3M™ Scotch-Grip™ Solvent No. 2.\*

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

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## Application Equipment Suggestions

**Note:** Appropriate application equipment can enhance adhesive performance. We suggest the following application equipment for the user's evaluation in light of the user's particular purpose and method of application.

1. **Pumping:** A 2:1 divorced design pump is suggested. Packings and glands, in contact with the adhesive, should be Teflon<sup>®</sup>
2. **Spray:**

### Production Type Spray Equipment

Spray Applicator	Air Cap	Fluid Tip	Air Pressure	Approximate Air Requirement*	Fluid Flow**
DeVilbiss JGA	24	FX	25 psi	3 CFM	6-12 fl. oz./min.
Binks No. 95 or 2001	66S	63B	25 psi	3 CFM	6-12 fl. oz./min.

\*3/4 H.P. Compressor for intermittent use.  
1 H.P. Compressor continuous use.

\*\*To Measure Fluid Flow: Pressurize fluid source only; pull trigger, flow material into measuring device for 60 seconds, increase or decrease fluid source pressure to obtain desired fluid flow.

3. **Hoses:** All material hoses should be nylon or PVA lined.
4. **Brush/Roller:** Typical brushes/rollers designed for oil based paint may be used.

## 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 (lbs./inch width)
Aluminum	13
Polypropylene	10
Polyethylene	5
ABS	9
FRP (fiberglass reinforced plastic)	14

**Overlap Shear Strength:** Overlap shear strength on birch plywood to itself tested at 0.1 inches per minute separation rate.

Test Temperature	Value (psi)
-30°F (-37°C)	310
75°F (24°C)	230
120°F (49°C)	145
180°F (82°C)	35

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## 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.

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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. Address correspondence to: 3M Adhesives Division, 3M Center, Building 220-8E-05, 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: 5-270-2180.

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## Important Notice

3M MAKES NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. User is responsible for determining whether the 3M product is fit for a particular purpose and suitable for user's method of application. Please remember that many factors can affect the use and performance of a 3M Adhesives Division product in a particular application. The materials to be bonded with the product, the surface preparation of those materials, the product selected for use, the conditions in which the product is used, and the time and environmental conditions in which the product is expected to perform are among the many factors that can affect the use and performance of a 3M product. Given the variety of factors that can affect the use and performance of a 3M product, some of which are uniquely within the user's knowledge and control, it is essential that the user evaluate the 3M product to determine whether it is fit for a particular purpose and suitable for the user's method of application.

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## Limitation of Remedies and Liability

If the 3M product is proved to be defective, THE EXCLUSIVE REMEDY, AT 3M'S OPTION, SHALL BE TO REFUND THE PURCHASE PRICE OF OR TO REPAIR OR REPLACE THE DEFECTIVE 3M PRODUCT. 3M shall not otherwise be liable for loss or damages, whether direct, indirect, special, incidental, or consequential, regardless of the legal theory asserted, including, but not limited to, negligence, warranty, or strict liability.

ISO 9002

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

For Additional Product Safety and Health Information, See Material Safety Data Sheet, or call:

# 3M

## Adhesives Division

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