

3M

Scotch-Grip™

Plastic Adhesives

4693 • 4693H

Technical Data

August, 2002

Features

- 3M™ Scotch-Grip™ Plastic Adhesive 4693 low viscosity grade for spray or brush application.
- 3M™ Scotch-Grip™ Plastic Adhesive 4693H high viscosity grade in collapsible tubes for flow applications.
- Clear, elastomeric adhesives with high immediate bond strength, long tack range and contact bond properties.
- Exhibit outstanding bond strength to many metals and many plastics such as ABS, glass filled polyester, polypropylene, linear polyethylene and hi-impact styrene.
- Dries to a tough, flexible and transparent film with good resistance to water and aging.

Note: Not recommended for use on plasticized vinyl. Use on plasticized vinyl may result in poor adhesion or bonds that deteriorate over time.

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.

	Adhesive 4693	Adhesive 4693H
Base	Synthetic Elastomer	Synthetic Elastomer
Color	Light Amber	Light Amber
Solvent	Cyclohexane, acetone	Cyclohexane, acetone
Net Weight (approx.)	6.6 - 7.0 lbs./gal.	6.8 - 7.2 lbs./gal.
Flash Point	1°F (-17°C) c.c.	1°F (-17°C) c.c.
Solids Content (approx.)	By wt., 24-28%	By wt., 38-43%
Coverage (typical)	308 ft. ² /gal. @ 2.5 gms./ft. ² dry wt.	457 ft. ² /gal. @ 2.5 gms./ft. ² dry wt.
Viscosity (approx.)	175 - 275 cps	1800 - 3000 cps
Brookfield Viscometer	RVF #2 sp @ 20 rpm @ 80°F (27°C)	RVF #4 sp @ 20 rpm @ 80°F (27°C)

Handling/Application Information

Surface Preparation: Surfaces must be dry and free of dust, dirt, grease, oil, mold release materials or other contaminants. For best results, temperature of adhesive should be at least 65°F (18°C).

Application

Porous Surface: Brush, spray or flow an even coat of adhesive to both surfaces. Very absorbent materials may require more than one coat. Bond while adhesive is tacky. Join surfaces with firm pressure.

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Handling/Application Information *(continued)*

Non-Porous Surface: Brush spray or flow an even coat of adhesive to both surfaces. To achieve a satisfactory bond, adhesive must be force dried @ 180°F (82°C). Bond with firm pressure while warm.

Drying Time: Drying time depends on temperature, humidity, air movement and porosity of the materials bonded. When brushing, wait a minimum of 10 minutes. Bonds can be made up to 60 minutes. Sprayed bonds may be made almost immediately and up to 60 minutes.

Heat Reactivation: Adhesive may be heat reactivated by raising the glue line temperature to 180°F (82°C).

Cleanup: Excessive adhesive may be removed with 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.

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. All material hoses should be nylon or PVA lined. Packings and glands in contact with the adhesive should be Teflon®* lined.

2. **Spray (Air Atomized):**

Production Type Spray Equipment

Spray Gun	Air Cap	Fluid Tip	Air Pressure	Approximate Air Requirement*	Fluid Flow
DeVilbiss JGA	777	FX	80 psi	25 CFM	8 fl. oz./min.
Binks No. 95 or 2001	66 PH	63A	80 psi	25 CFM	9 fl. oz./min.
Low Volume Spray Equipment					
DeVilbiss JGA	45	E	25 psi	3½ CFM	8-9 fl. oz./min.
Binks No. 95 or 2001	66 SE	66	25 psi	6 CFM	8-9 fl. oz./min.

*3 H.P. Compressor for intermittent use.
 5 H.P. Compressor for 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. If product is sprayed, use functioning spray booth.

4. **Brush/Roller:** Typical brushes/rollers designed for oil-based paint may be used.

*Teflon is a registered trademark of E.I. duPont deNemours and Co.

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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.

180° Peel Strength @ RT (after aging 1-2 days @ RT and 1 day @ 120°F (49°C))		Creep Resistance Canvas/Canvas (after aging 1-2 days @ RT and 1 day @ 120°F (49°C) 500 gram wt. applied in peel)			
Canvas to:	Value lb/in width	Canvas to:	Value lb/in width	Test Temp.	Creep in 2 hrs. (inches)
Aluminum	23	Polyester, filled	21	160°F (71°C)	0
Steel	22	Polyethylene, linear	11		
ABS	20	Polypropylene	19		
Acrylic	18	PVC, Hi-impact	20		
Nylon® 6	19	Styrene, Hi-impact	21		
Phenolic Board	20				

Storage

Store 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 temperature 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 health and safety information, call 1-800-364-3577 or (651) 737-6501.

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. 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.

Important Notice

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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, contract, negligence, warranty, or strict liability.



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



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