

3M Membrane Switch White Spacer 7992MPW

Technical Data

February, 2015

Product Description

3M™ Membrane Switch White Spacers with 3M™ Adhesive 200MP is a high-performance Acrylic PSA laminated to one side of a polyester film. The 3M adhesive 200MP acrylic PSA has a good balance of peel & cohesive strength and is a very good general purpose, smooth, caliper controlled, transparent acrylic adhesive that can be used for membrane switch laminates consisting of PET circuitry film layers & subsurface graphic ink bonding surfaces.

Construction*	Product	Liner #1	Adhesive	Polyester
	3M™ Membrane Switch White Spacer 7992MPW	6.5 mils (163 microns) 94# Polycoated Kraft (PCK)	2.0 mils (50 microns) 200MP Acrylic	2.0 mils (50 microns) White PET Print Treated

*Thickness tolerance on the actual product (exclusive of liners) is $\pm 10\%$ for these products.

Typical Physical Properties and Performance Characteristics

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

Adhesion Properties

ASTM D903 (Modified)
90 degree
12"/minute

3M™ Membrane Switch White Spacers	Peel Strength (Oz./In. / N/100mm)
7992MPW	46 / 50

Shear Properties ASTM
D3654 (Modified) 1/2" x 1" -
1000g @ R.T.
Stainless steel / PET backing

3M™ Membrane Switch White Spacers	Shear Strength (Minutes to failure or slip)
7992MPW	10,000 +

Environmental Performance

The properties defined are based on 3M testings in which impervious faceplate materials (such as aluminum) were attached to an aluminum test surface. They should not be used for specification purposes.

Bond Build-up: The bond strength of 3M™ Adhesive 200MP increases as a function of time and temperature.

Humidity Resistance: High humidity has a minimal effect on adhesive performance. Bond strengths are generally higher after exposure for 7 days at 90°F (32°C) and 90% relative humidity.

U.V. Resistance: When properly applied, 3M adhesive 200MP is not adversely affected by outdoor exposure.

Water Resistance: Immersion in water has no appreciable effect on the bond strength. After 100 hours in room temperature water, the bond shows an increase in strength.

Temperature Resistance: Strength generally increases after cycling four times through:
4 hours at 158°F (70°C)
4 hours at -20°F (-29°C)
16 hours at room temperature.

Available Sizes

Standard sheet size is 24" x 36" or rolls on 6" core

Sheet tolerance: -0 + 1/4"

Roll tolerance: Width – Max. 48"; ± 1/64" (1.22 m)
Length – Max. 360 yds. (329.2 m)

Application Techniques**Processing**

Die Cutting: Steel rule die & hard tooling - Good die-cutting and kiss-cutting properties. Lubricate dies with vanishing oil or similar low residue lubricants for improved processing if required. Metal cutting surfaces can also be plated or treated to resist adhesive build-up. Optimal design, quality construction, and make ready give best results when cutting PSA materials and substrates. Consult with your tooling supplier for design and qualification of new tooling.

Laser Converting: Laser cutting, kiss-cutting, scoring and perforating using CO₂ lasers has proven very successful for cutting PSA materials particularly for prototyping and short-run work. Consult with your laser job shop or vendor to test and qualify converting process.

Roll Laminating: Use rubber over steel roll set up with moderate application pressure. Make adhesive to substrate contact at nip area only to avoid air entrapment in bond. Proper rubber roll durometer hardness, parallelism of rolls, roll diameters and width, PLI and nip gap, and web thread up and table configuration set-up parameters are all critical to satisfactory results to eliminate wrinkles, entrapped bubbles, etc. Heated rolls or heat assist can be very helpful to good lamination quality and bond build-up. Consult with your laminating equipment supplier for details.

Special Considerations

For maximum bond strength, surface should be thoroughly cleaned and dried. A typical substrate cleaning solvent is heptane or isopropyl alcohol.* There are many others that will work well, but cleaning materials must be tested to assure compatibility with the substrate and that residues are not deposited on the surface.

Consult the manufacturer's Material Safety Data Sheet for proper handling and storage of vanishing or other cutting lubricants & oils, and cleaning solvents.

Bond strength will typically be improved with firm application pressure, dwell time to allow bond to build up, and moderate heat causing adhesive to flow and develop intimate contact (wet-out) with bonding surface.

*When using solvents, be sure to follow the manufacturer's precautions and directions for use when handling such materials.

Storage

Store at room temperature conditions of 72°F (22°C) and 50% R.H. Storage in plastic bag is recommended.

Shelf Life

Product retains its performance and properties for two years from the date of manufacture.

3M™ Membrane Switch White Spacer

7992MPW

Application Ideas

- Single and double-coated spacers for use in membrane switch applications including circuit layer bonding, dome retention and spacing between circuit layers of membrane touch switch constructions.
- The white carrier offers design optimization of light management characteristics for keypads.
- Can be used to provide bonding as well as opacity for graphic attachment layers.

Certification/ Recognition

MSDS: 3M has not prepared a MSDS for these products which are not subject to the MSDS requirements of the Occupational Safety and Health Administration's Hazard Communication Standard, 29 C.F.R. 1910.1200(b)(6)(v). When used under reasonable conditions or in accordance with the 3M directions for use, the products should not present a health and safety hazard. However, use or processing of these products in a manner not in accordance with the directions for use may affect their performance and present potential health and safety hazards.

TSCA: These products are defined as articles under the Toxic Substances Control Act and therefore, are exempt from inventory listings.

UL: These products have been recognized by Underwriters Laboratories, Inc. under Standard UL 969 Marking and Labeling in File MH26206. For more information on the UL Certification, please visit the website at <http://www.3m.com/converter>, select UL Recognized Materials, then select the specific product area.

Product Use

All statements, technical information and recommendations contained in this document are based upon tests or experience that 3M believes are reliable. However, many factors beyond 3M's control can affect the use and performance of a 3M product in a particular application, including the conditions under which the product is used and the time and environmental conditions in which the product is expected to perform. Since these factors 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.

Warranty and Limited Remedy

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Industrial Business
Converter Markets

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