3M

Sprayable Hot Melt Adhesive

6111 • 6111 HT • 6111 HT Blue

Technical Data **January, 2015**

Product Description

3M™ Sprayable Hot Melt Adhesive is a heat applied, 100% solids, sprayable adhesive for a fast, neat alternative to aerosols, contact adhesives and solvent-based adhesives to bond most foams and many other lightweight materials.

6111	Sprayable 100% solids adhesives for most foams, fabrics particle board and thin metal
6111HT (Tan)	Sprayable 100% solids adhesives for most foams, fabrics particle board and thin metal. Has higher heat resistance than 6111. Tan in color for spraying on dark colored substrates
6111HT Blue	Sprayable 100% solids adhesives for most foams, fabrics particle board and thin metal. Has higher heat resistance than 6111. Blue in color for spraying on light colored substrates

Features

- Sprayable thermoplastic adhesive.
- One or two surface application.
- Immediate initial strength
- Bonds wide variety of substrates, including most foams, plastics, particle board, light gauge metals.
- Solvent-free, 100% solids.
- Long bonding range.
- Excellent adhesion to polypropylene
- Controlled application with minimal overspray.

Note: Not recommended for bonding unsupported vinyl and leather.

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

	3M™ Sprayable Hot Melt Adhesive 6111	3M™ Sprayable Hot MeltAdhesive 6111 HT/6111 HT Blue
Description	Standard Product	Higher Heat Resistance
Base	Polyolefin copolymer thermoplastic	Polyolefin copolymer thermoplastic
Color	Tan	Tan/Blue
Specific Gravity	0.92	0.93
Flashpoint (°F)	498	529
Viscosity @ 375°F (190°C) cps(1)	3000-5000	2500-4500
Application Temperature	350-385°F (177-196°C)	350-385°F (177-196°C)
Open Time1 Surface Foam to PVC(2)	1 minute	3 minutes
Open Time 2 Surface Foam to Foam(3)	6 minutes	8 minutes

1. Brookfield Thermocel Viscometer in Centipoise using a #27 Spindle @ 20 RPM
2. 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 sec of firm pressure. After standing for 24 hrs, bonds were pulled apart by hand. The criterion for open time is 100% foam tear.
3. Two pieces of 3/4 in. thick, 2-lb. density polyester urethane foam were sprayed and bonded using 5 sec of firm pressure. After 24 hrs, bonds were pulled apart by hand. The criterion for open time is 100% foam tear.

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Suggested Adhesive Coverage – Starting Points:

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.

	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

Typical Adhesive Performance Characteristics

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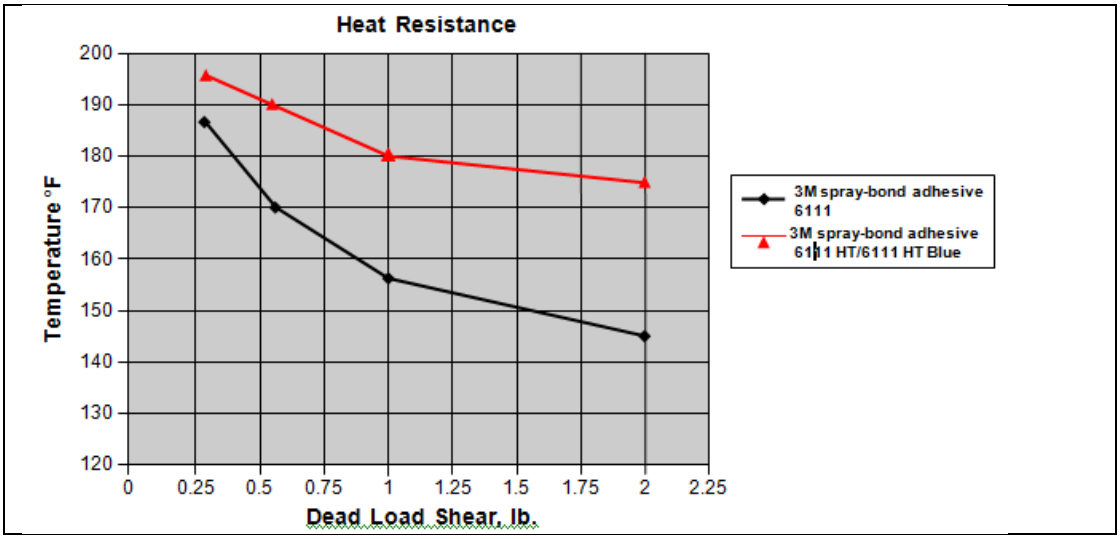
A. **Heat Resistance, Dead Load Shear**

Load, psi	3M™ Sprayable Hot Melt Adhesive 6111Temperature	3M™ Sprayable Hot MelAdhesive 6111 HT/6111 HT Blue Temperature
2 lb.	145°F (63°C)	175°F (79°C)
1 lb.	155°F (69°C)	180°F (82°C)
0.55 lb. (250 grams)	170°F (77°C)	190°F (88°C)
0.33 lb. (150 grams)	185°F (85°C)	195°F (91°C)



B. **Peel Adhesion (PIW)**

Peel Adhesion: Peel bonds of cotton duck (canvas to various substrates) were tested at a peel angle of 180° at two inches per minute separation rate at a temperature of 73°F (23°C). The value listed is the average force required to peel the canvas from the substrates in pounds per inch of bond width (PIW).

Substrate	3M Sprayable Hot Melt Adhesive 6111 Peel Strength (PIW)	3M Sprayable Hot Melt Adhesive 6111 HT/ 6111HT Blue Peel Strength (PIW)
Fir	34.4	25.6
ABS	12.1	16.5
Polypropylene	46.3	14.4
PVC	9.9	16.3
Cold Rolled Steel	16.5	29.9
High Density Polyethylene	8.2	3.5

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Typical Adhesive Performance Characteristics *(continued)*

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C. **Foam Tear**

Foam Tear: Polyurethane foam of 1.2 lb./cu. ft. density was bonded to various substrates. After 24 hours at ambient temperature an effort was made to pull the foam from the surface of the substrate. It was noted if the adhesive released from the substrate or if there was tearing of the foam.

Substrate	3M™ Sprayable Hot Melt Adhesive 6111Foam Tear	3M™ Sprayable Hot Melt Adhesive 6111 HT/6111 HT Blue Foam Tear
Fir	yes	yes
ABS	yes	yes
Polypropylene	yes	yes
PVC	yes	yes
Cold Rolled Steel	yes	yes
High Density Polyethylene	no	no

Product Size/available Package size

	6111	6111HT	6111HT Blue
Product format	Chip	Chip	Chip
Size (approximate)	0.5" dia x 0.5" Long	0.75"dia. x 0.75"Long (1.9cm x 1.9cm)	0.75"dia. x 0.75"Long (1.9cm x 1.9cm)
	22 pound boxes	22 pound boxes 850 pound Gaylord	22 pound boxes 850 pound Gaylord

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 or MEK (methyl ethyl ketone) for metal will aid in removing oil and dirt.*

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

2. **Application:** 3M™ Sprayable Hot Melt Adhesive is designed for spray application using either a hand held applicator or a "bulk" hot melt system designed for use with a sprayable hot melt adhesive.

Definitions

Open Time[1]: Is the maximum time between the application of the adhesive and when the parts must be joined together. This information is based on 1/8" bead on non-metallic substrates at 75°F (20°C).

Set up time[1]: After bond is made, there is immediate strength and no clamping is necessary.

1-Higher environmental temperatures will lengthen open times and set times, while lower environmental temperatures will shorten open times and set times.

Lot Code Information

Example of lot number: 8023K4

Code Description

8 Last digit of year manufactured 023 Julian date (day number 0 – 366)

K4 Alpha-numeric lot code (random not sequential)

In this example, the date of manufacture is January 23, 2008.

Storage

Best storage temperature is 60-80°F (15-27°C). Do not store above 120°F (49°C).

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Shelf Life

Is the period of time, after 3M ships the product to a customer or distributor, the product will continue to satisfy applicable 3M manufacturing and quality standards. The shelf life stated applies only to product that is stored in the original, unopened container under specified storage conditions.

The stated shelf life of all 3M™ Sprayable Hot Melt Adhesives is 24 months

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.

Technical Information

The technical information, recommendations and other statements contained in this document are based upon tests or experience that 3M believes are reliable, but the accuracy or completeness of such information is not guaranteed.

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ISO 9001

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