



Flexel™ EM9002

Reactive Film Adhesive

Material Description

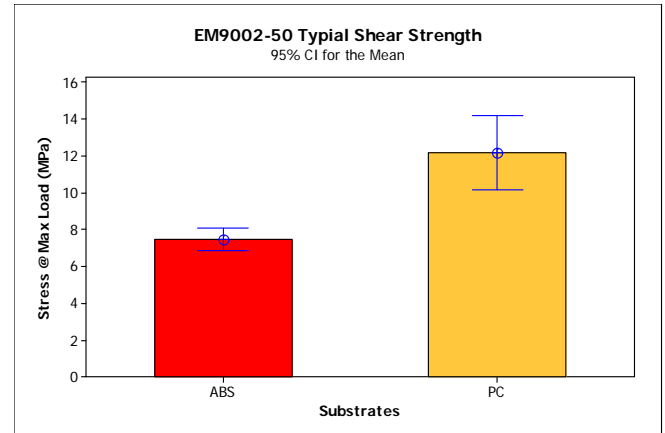
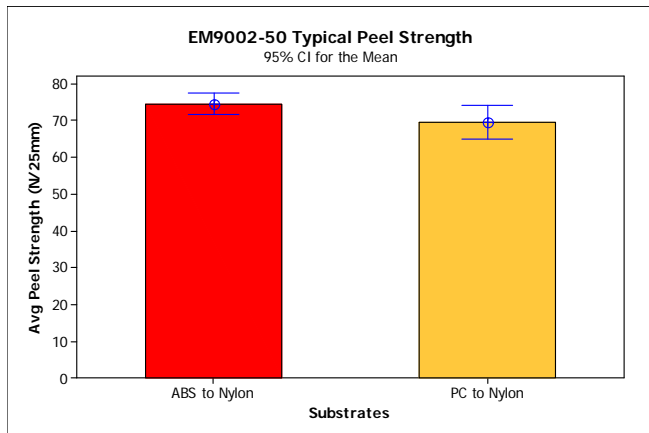
EM9002 is a reactive, low temperature heat-activated adhesive film for bonding plastic substrates like ABS, PC, pre-treated olefins, textiles, artificial and genuine leather.

Features & Benefits

- Low temperature, easy application method
- Excellent adhesion to plastics & textiles
- High fracture toughness, peel and shear strength, while maintaining flexibility
- High heat resistance and chemical resistance after cure
- Halogen free as defined by IEC 61249-2-21
- No added formaldehyde

Property	Typical Value
Base	Polyurethane
Color	Milky White
Specific Gravity	1.12
Solid Content %	100%
T _g by DSC	- 46 °C
Ave Tensile Stress*	26 MPa
Ave Tensile Strain*	550%
Young's Modulus*	180 MPa
Standard Film Thickness	25, 50, 75 100µm
Shelf life at temperature < 30 °C	9 months

*EM9002-100 films cured at 90 °C for 60 seconds



Note: Peeled at crosshead speed of 300 mm/min. Samples were pressed for 60 seconds at bond line temperature of 90°C and pressure of 22N/cm². Peel samples were conditioned for 24 hours at 23 °C and 50% relative humidity before testing.

Note: Pulled at crosshead speed of 30 mm/min. Shear area is 25 mm x 12 mm. Samples were pressed for 60 seconds at bond line temperature of 90°C and pressure of 22N/cm². Shear samples were conditioned for 24 hours at 23 °C and 50% relative humidity before testing.

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North America
+888-HBFULLER
+888-423-8553

inquiry@hbfuller.com
www.hbfuller.com



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Surface Prep

Surfaces must be clean and free from dust, fatty substances and release agents. For optimum adhesion, the surface tension of the substrates to be bonded should be more than 38 dynes/cm.

Recommended surface preparation for optimal adhesion is as follows:

PC, ABS, Glass:	IPA wipe
Nylon:	Plasma treatment

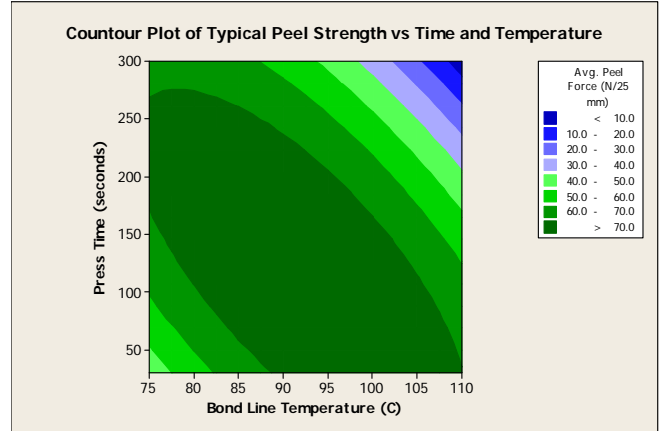
Application Instructions

- Place adhesive film between substrates.
- Cure Activation Conditions
 - Temperature: 75°C – 110°C
 - Activation Time: 30s – 90s at temperature
 - Pressure: 10 to 25 N/cm²

We recommend uniform pressure distribution for optimal bonding. Use the contour plot on the right as a guide to determine the optimum bonding conditions for your process.
- The glued materials can be further processed immediately after bonding and cooling down (handling, trimming, cutting, etc.).

Optional step: EM9002 adhesive film may be pre-tacked to a substrate prior to processing. To pre-tack EM9002 to a material, use the processing guide lines below:

- Bond Line Temperature: 45 to 50 °C
- Pressure: 5 to 20 N/cm²



Note: The chart above shows typical peel strength (N/25 mm width) when bonding polycarbonate coupons to nylon fabric with Flexel™ EM9002-50. This is 180° degree peel data, pulled at 300 mm/min. After the parts were bonded, they were allowed to condition at 23 °C and 50% relative humidity for about 24 hours.

Film Thickness

EM9002 is available in a range of thickness, which is noted by the product name extension:

- EM9002-25 = 25 µm film thickness
- EM9002-50 = 50 µm film thickness
- EM9002-75 = 75 µm film thickness
- EM9002-100 = 100µm film thickness

Storage & Shelf Life

EM9002 should be stored in a cool, dry place. Shelf life is 9 months from date of manufacture when stored below 30°C.

Health & Safety Precautions

Please see the Material Safety Data Sheet (MSDS) for proper handling and disposal instructions.



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