



FULL METAL JACKET (FMJ)TM

SPRAY POLYUREA TRUCK BED LINER

Revised 11.06.13

DESCRIPTION

FULL METAL JACKETTM is an economical state-of-the-art, pure polyurea thermoplastic elastomer. It is designed for processing through medium pressure, heated, plural-proportioning equipment. FULL METAL JACKETTM provides a resilient, tough, abrasion resistant monolithic membrane with water and chemical resistance.

This product is ideal as a protective liner for pick up truck beds, truck trailers, and similar applications.

FEATURES

- 100% solids. No solvents. No VOCs.
- Fast-set: handle in one minute or less.
- It can be sprayed in temperatures as low as 40°F (4°C).
- High dry temperature stability to 250° F (121 °C) with intermittent temperatures to 300° F (148 °C).
- Fast gel time allows high build on overhead and vertical surfaces.

RECOMMENDED USES

- Bed liners for pickups, trailers, etc.
- Abrasion resistant coatings for dump trucks
- Automotive undercoating material
- Theatrical and themed EPS props protection
- Encapsulation of flotation foams
- Temporary building repair
- Rust encapsulation on barges and tanks
- Sound deadening material
- Low cost rigid mold making material
- Non-potable water containment applications
- FRP alternative for structural molded parts
- Horse trailer or animal transportation walls and floors

COLORS

FULL METAL JACKETTM is available in SPI high pigment Black. Custom colors will be quoted upon request. It should be noted that FULL METAL JACKETTM is an aromatic polyurea; therefore, as with all aromatic, color change and superficial oxidation will occur.

Aliphatic urethane, polyurea, and other suitable aliphatic topcoats can be used when long-term color stability and increased longevity in full sun exposure are of critical importance.

WET PROPERTIES @ 77°F (25°C)

Solids by Volume	100%
Solids by Weight	100%
Volatile Organic Compounds	0 lbs/gal (0g/l)
Theoretical Coverage DFT	100 sq. ft. @ 16mils/gal
Weight per gallon (approx.)	8.55 lbs. (3.87 kg)
Number of Coats	1-2
Mix Ratio	1 "A": 1 "B"
Viscosity (cps) @ 77° F (25 °C)	A: 500 approx. B: 550 approx.
Shelf Life Unopened Containers @ 60-90°F (15-32°C)	Six months

Minimum material/container temperature for spray application is 70°F (21 °C).

DRY PROPERTIES @ 25 mils (0.63 mm)*

Tensile Strength ASTM D 412	2800 psi (19.5 mpa)
Elongation	360%
Hardness (Shore D)	58

DRY PROPERTIES @ 1/8 inch (3.1 mm) with texture*

Tensile Strength ASTM D 638	1950 psi (13.5 mpa)
Elongation ASTM D 638	190%
Hardness (Shore D)	59
100% Modulus ASTM D 412	1620 psi (11.2 mpa)
300% Modulus ASTM D 412	1925 psi (13 mpa)
Tear Resistance ASTM D 624	470 PLI (82 KN/m)
Service Temperature	-60°F – 300°F (-50°C - 148°C)
Abrasion Resistance ASTM D4060 1 kg, 1000 rev.	H-22 wheel 62 mg. lost
Weatherability QUV	No evidence after 3000 hrs.

**All cured film properties are approximate since processing parameters, ad-mixture types, and quantities change physical properties of the cured elastomer. All samples for above tests were force cured or aged for more than three weeks. It is recommended that the user perform their own independent testing.*

CURING SCHEDULE

Gel	±8 sec.
Tack Free	±12 -18 sec.
Post Cure**	12 hours
Recoat	0-12 hours

***Complete polymerization to achieve final strength can take up to several weeks depending on a variety of conditions.*

The samples for tests were sprayed with SPI/Gusmer 25/25 HP @ 2400 psi (16.68 mpa). Primaries/Hose Heat 170°F (76°C) GX7-400 Gun w/#453 module and 212 PCD.

GENERAL APPLICATION INSTRUCTIONS

Apply FULL METAL JACKETTM only to clean, dry, sound surfaces free of loose particles or other foreign matter. A primer may be required depending on type and/or condition of the substrate. Consult technical service personnel for specific primer recommendations and substrate preparation procedures.

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FULL METAL JACKET™ can be sprayed over a broad range of ambient and substrate temperatures. Contact technical service personnel for specific recommendations, pricing, and availability of spray and auxiliary equipment.

It is recommended that FULL METAL JACKET™ be sprayed in multi-directional (north-south/east-west) passes to ensure uniform thickness.

The polyol "B" component must be thoroughly power mixed each day, prior to use. Contact a SPI technician regarding proper mixing equipment.

Follow the instructions attached to "A" and "B" containers.

RECOMMENDED EQUIPMENT AND SETTINGS

- Standard 1:1 ratio, heated, plural-component equipment developing a minimum of 2000 psi (10.4 mpa) dynamic pressure with heating capabilities to 175° F (79 °C) will adequately spray FULL METAL JACKET™. These include Graco 20/35, 20/35 Pro, H-2000, H/3500, Reactor A-20, E-20, E-XP1, E-XP2, H-25, H-40, H-XP2, H-XP3, SPI 18/18, and SPI Gusmer 25/25. Gun models include Fusion MP, Gap Pro, Glass Craft P2, P2 Elite "C", Gusmer D7, GX-7 DI, GX-8 Pro, and SPI D7 gun.
- Pre-heater temperature should be at 160-170°F (71-76 °C).
- Hose temperature should be at 160 -170° F (71-76°C). A hose thermometer inserted under the insulation near the gun should read a minimum of 145-155°F (63-68°C).
- Physical properties will be enhanced when sprayed at higher pressure (3000 psi or more) (20.8mpa), utilizing an impingement mix gun such as MP Fusion or GX7-DI.

MIXING AND THINNING

Using any thinner may adversely affect product performance.

GENERAL SAFETY, TOXICITY & HEALTH DATA

Material Safety Data Sheets are available for this coating material. Any individual who may come in contact with these products should read and understand the M.S.D.S. **CHEMTREC EMERGENCY NUMBER 1-800-424-9300**

WARNING: Contact with skin or inhalation of vapors may cause an allergic reaction. Avoid eye contact with the liquid or spray mist. Hypersensitive persons should wear protective clothes, gloves and use protective cream on face, hands and exposed areas.

CLEAN UP: Use DPM, NMP, and Polyclean.

EYE PROTECTION: Safety glasses, goggles, or a face shield are recommended.

SKIN PROTECTION: Chemical resistant gloves are recommended. Cover as much of the exposed skin area as possible with appropriate clothing.

RESPIRATORY PROTECTION: Use a respirator approved for isocyanates and organic vapors. If you are not sure or not able to monitor levels, or if you are spraying in an enclosed/indoor area, use MSHA/NIOSH approved supplied air respirator. Consider the application and environmental concentrations when deciding if additional protective measures are necessary.

INGESTION: Do not take internally. It is believed that ingestion of polymeric isocyanates would not be fatal to humans, but may cause inflammation of mouth and stomach tissue.

LIMITATIONS

- This product is for professional use only.
- FULL METAL JACKET™ must be stored at temperatures between 60° F to 90° F (15 °C to 30 °C).
- Liquid temperature in drums during application 70°F (21°C) – 100°F (38°C).
- Apply FULL METAL JACKET™ when surface and air temperatures are above 40°F (5°C) and rising, and 7°F (-13°C) above dew point.
- Minimum material/container temperature for spray application is 70°F (21 °C).
- Avoid moisture contamination in containers. Containers should not be resealed if contamination is suspected, CO₂ created pressure can develop. Do not attempt to use contaminated material.
- Undried air exposed to liquid components will reduce physical properties of the cured coating.

Note: The material supplied is two components (Component "A"/Component B™) used to formulate FULL METAL JACKET™. The quality and characteristics of the finished polymer is determined by the mixture and application of the two components.

WARRANTY & DISCLAIMER

Specialty Products, Inc. has no role in the manufacture of the finished polymer other than to supply its two components. It is vital that the person applying this product understands the product, and is fully trained and certified in the use of plural-component equipment.

Specialty Products, Inc., an Alaska corporation, warrants only that the two components of this product shall conform to the technical specifications published in the product literature.

The quality and fitness of the product are dependent upon the proper mixture and application of the components by the applicator. There are no warranties that extend beyond the description on the face of this instrument.

Failure to apply the product within the parameters stated on this document shall void the warranty.

SPECIALTY PRODUCTS, INC. MAKES NO WARRANTY OF MERCHANTABILITY OF THE PRODUCT OR OF FITNESS OF THE PRODUCT FOR ANY PARTICULAR PURPOSE.

Specialty Products, Inc. makes no warranty as to the quality of any product modified, supplemented, tinted, or altered in any way after it leaves the manufacturing plant.

Specialty Products, Inc. does not warrant that this product is suitable for use as a liner for potable water containers. Use of this product in a potable water container could be hazardous to health if it is improperly processed or applied.

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The data presented herein is intended for professional applicators or those persons who purchase or utilize this product in the normal course of their business.

The potential user must perform any pertinent tests in order to determine the product's performance and suitability in the intended application, since final determination of fitness of the product for any particular use is the responsibility of the buyer.

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