



K5-UB™

ABRASION RESISTANT SPRAY APPLIED ELASTOMER

Preliminary

Revised 09.17.12

DESCRIPTION

K5-UB™ is an ultra high-strength, high-elongation polyurea, originally developed as a resilient blast resistant polymer. Soon after, it was discovered that K5-UB™ is exceptionally resistant to abrasion, compared to other spray applied coatings. K5-UB™ adheres to many polymeric substrates, both new and aged, typically without the use of primers or extensive surface preparation. K5-UB™ can be sprayed on to virtually any surface configuration, at any thickness. Therefore, it can be selectively applied to high wear areas.

FEATURES

- Self-priming on most substrates
- Impact absorbing properties
- Sound dampening noise control properties
- Low temperature flexibility
- Seamless, monolithic application
- Light-weight
- Compliant with FDA/USDA for incidental food contact

RECOMMENDED USES

Abrasion resistant liner for:

- Chutes and Hoppers
- Silos
- Screw Conveyors
- Slurry Tanks, and Pipelines
- Truck Liners
- Cyclones
- Classifier and Shaker Screens

Use K5-UB™ with or without broadcast aggregate to provide a tough durable flooring system

COLOR

K5-UB™ is available in SPI standard colors (Sand, Medium Grey, and Black). Custom colors will be quoted upon request. It should be noted that K5-UB™ is an aromatic polyurea; therefore, as with all aromatics, 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. @ 16 mils/gal
Weight per gallon (approx.)	8.8 lbs. (3.99 kg)
Number of Coats	1-3
Mix Ratio	1 "A": 1 "B"
Viscosity (cps) @ 77° F (25 °C)	A: 900 approx. B: 230 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 @ 34 mils (0.8 mm)**	
Tensile Strength ASTM D 412	>5500 psi (34.75 mpa)
Elongation @77°F (25°C)	>300%
Hardness (Shore A)	96
Hardness (Shore D)	57
Modulus @100% ASTM D 412	>1800 psi (12.51 mpa)
Modulus @ 200% ASTM D 412	>3000 psi (20.85 mpa)
Modulus @ 300% ASTM D 412	>4700 psi (32.67 mpa)
Tear Resistance ASTM D 624	>690 PLI (120.82 KN/m) Avg
Abrasion Resistance 1kg. 1000 rev.	CS-17 wheel 2.0 mg lost
	H-18 wheel 33.0 mg lost
Service Temperature	-40°F - +200°F (-45°C - +93.3°C)

**All cured film properties are approximate since processing parameters, ad-mixture types, and quantities will 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	± 12 sec.
Tack Free	± 20 sec.
Post Cure***	24 hours
Recoat	2 min. - 12 hours

***Complete polymerization to achieve final strength can take up to several days depending on a variety of conditions. The samples for tests were sprayed with SPI/Gusmer 20/35 HP @ 2500 psi dynamic (172 bar). Primaries/Hose Heat 170°F (77°C) Gap Pro Gun with SPI 000 mixing module.



MSDS SHEETS



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GENERAL APPLICATION INSTRUCTIONS

Apply K5-UB™ 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.

K5-UB™ 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 K5-UB™ 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 2500 psi (10.4 mpa) dynamic pressure with heating capabilities to 175° F (79 °C) will adequately spray K5-UB™. These include Graco 20/35 Pro, H-3500, HV-20/35, Reactor E-XP1, E-XP2, H-XP2, H-XP3, and SPI Gusmer 25/25. Gun models include Fusion MP, Gap Pro, GX7-DI, and GX-8 Pro 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

Thinning is not required. 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.
- Liquid temperature in drums during application 70°F (21°C) – 100°F (38°C).
- This product must be stored at temperatures between 60° F to 90° F (15 °C to 32 °C).
- Apply K5-UB™ 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.
- Liquid components exposed to undried air will result in reduced physical properties of the cured coating.

Note: The material supplied is two components (Component "A"/Component "B") used to formulate this product. 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.

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