

DESCRIPTION

PTU™ UB pure polyurea is a new generation of high-performance polyurea coating and is the result of six years of development and field testing. This chemical resistant coating provides high-ductility, allowing it to move with expanding and contracting surfaces. Unlike most spray-applied polyureas, PTU™ UB is available with SPI's cutting-edge ULTRA BOND™ technology. SPI's advanced ULTRA BOND™ chemistry is coined "the duct tape molecule". ULTRA BOND™ has the unique advantage of adhering to most properly prepared organic and inorganic (new and aged) surfaces without requiring a primer. Like duct tape, PTU™ UB with Ultra Bond™ gains adhesion over time.

FEATURES

- Liquid components can be shipped non-hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
- An elastomer with chemical resistance; comparable to many epoxies.
- Self-priming in most instances, with strong adhesion.
- Return to service within hours not days (foot traffic 1 hour, vehicle traffic 4 hours).
- Typically applied in a single 'multi-pass' application.
- Eco-friendly, 100% solids, and no VOCs.

RECOMMENDED USES

- Primary and secondary containment.
- Steel tanks, concrete tanks, and silos.
- Barge and ship holds.
- Oil and gas pipelines.
- Waste water treatment facilities.
- Chemical transportation.
- Industrial flooring.
- Pulp and paper industry.
- Asbestos and lead encapsulation.

COLORS

PTU™ UB is available in SPI standard colors. Custom colors will be quoted upon request. It should be noted that PTU™ UB is an aromatic polyurea; therefore, as with all aromatics, color change and superficial oxidation will occur.

PACKAGING

This product sold in standard 110 gallon drum and 550 gallon tote sets. Available in other container sizes, contact sales representative for further information. Non-standard containers may require a longer lead time.

DRY PROPERTIES*

Tensile Strength ASTM D638	± 2,500 psi (17 mpa)
Elongation ASTM D638	± 88%
Hardness (Shore A) ASTM D2240	98 ± 5
Hardness (Shore D) ASTM D2240-81	52 ± 5
Permeance ASTM D96-80	Perms-inch 0.007
Service Temperature	-40° - +200°F (-45° - +93°C)

*All cured film properties are approximate since processing parameter, ad-mixture types, and quantities change physical properties of the cured elastomer. All samples for above tests were force cured 48 hours or aged for more than three weeks. It is recommended that the user perform their own independent testing.

It is recommended that oxidized surfaces be power washed with 2500—3500 psi water pressure to achieve maximum adhesion of PTU™ UB. If there is a possibility of surface contamination, scrub with a solution of 1/4 tsp. Dawn detergent plus 1 tbsp. of vinegar, per 1 gallon of warm water, followed by a thorough water rinse. If oxidation on existing surface is unable to be removed with pressure washing, mechanical abrading may be required.

Note: Currently, this product is manufactured exclusively in our Lakewood, Washington facility. Therefore, please allow additional transit time and additional transportation charges to certain geographic areas.

WET PROPERTIES

Solids by Volume	100%
Solids by Weight	100%
Volatile Organic Compounds	0 lbs/gal (0 g/l)
Theoretical Coverage DFT	100 sq. ft. @ 16 mils/gal
Weight per gallon (approx)	9.6 lbs. (4.35 kg)
Number of coats	1 or more
Mix Ratio	1 "A" : 1 "B"
Viscosity @77°F (25°C)	A: 650 ± 50 cps B: 900 ± 100 cps
Shelf Life Unopened Containers @ 60 - 90°F (15 - 32°C)	Six Months

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

CURING SCHEDULE

Gel	± 4 sec
Tack Free	± 10 sec
Post Cure**	12 - 24 hour
Recoat	0 min - 6 hours

**Complete polymerization to achieve final strength can take up to several days or weeks, depending on a variety of conditions or product type. The samples for tests were sprayed with Graco HXP3P @ 2700 psi dynamic. Primaries/Hose Heat 170°F (77°C,) MP Fusion gun with 29/29 40 mixing chamber and .040 ceramtip. Test results from SPI.

TEST INFORMATION

Mandrel Bend Test ASTM D522-93a	Passed	Mandrel Size 1" Test Temp - 60°F (-51°C)
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IMMERSION

CHEMICAL	WEIGHT GAIN %	
Acetic 50%	9.75%	11 months
Diesel	0.1%	3 years
Gasoline (unleaded)	4.75%	17 months
Sulphuric Acid 14% Phosphoric Acid 30%	-0.86%	2 years
Jet Fuel JP-1,2,3	1.4%	5 years
Methanol	9.12%	19 months
Skydrol	16.5%	1 year
Sulphuric Acid 50%	6.15%	1 year

Immersion samples were 'free films' (6 sides exposed). In service, containment liners have only one side of liner exposed to reagents. To calculate approximate chemical absorption, divide the weight gain percentage indicated

on the adjacent chart by two. All tests performed at SPI location at room temperature. Certified free film samples are available for immersion evaluation.

MIXING & THINNING

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

Thinning is not required. Using any thinner may adversely affect product performance.

GENERAL APPLICATION INSTRUCTIONS

Apply PTU™ UB only to clean, dry, sound surfaces free of loose particles or other foreign matter. PTU™ UB can be sprayed over a broad range of ambient and substrate temperatures.

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

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

Contact technical service personnel for specific recommendations and pricing. As well as the availability of spray and auxiliary equipment.

RECOMMENDED EQUIPMENT SETTINGS

- Standard 1:1 ratio, heated, plural-component equipment developing a minimum of 2500 psi dynamic pressure (13.90 mpa) with heating capabilities to 165° F (74 °C) will adequately spray PTU-UB™. These include Graco HXP3, HXP2, EXP2 and PMC PHX-40. Gun models include Graco Fusion MP, GX7-DI and Gusmer GX7-400.
- 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 the MP Fusion or GX7-DI.

LIMITATIONS

This product is for professional use only.

This product must be stored at temperatures between 60 – 90F (15 – 32C).

Apply product when surface and air temperatures are above 40°F (5°C) and the surface temperature is at least 5°F (3°C) above dew point and rising.

Note: The material supplied is a two component system (Component "A"/Component "B", which is used to formulate this product. The quality and characteristics of the finished

polymer is determined by the mixture and application of the two components.

Avoid moisture contamination in containers. Containers should not be resealed if contamination is suspected. CO₂ pressure can develop. Do not attempt to use contaminated material.

GENERAL SAFETY, TOXICITY, & HEALTH

Safety Data Sheets are available for this coating material. Any individual who may come in contact with these products should read and understand the 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 eye wear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield.

SKIN PROTECTION: Personal protective equipment for the body should be selected based on the task being performed; the risks involved, and should be approved by an industrial hygiene specialist before handling this product. Chemical resistant gloves are recommended. Cover as much of the exposed skin area as possible with appropriate clothing.

RESPIRATORY PROTECTION: Harmful if inhaled and may cause allergy or asthma symptoms. 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.

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