

**Part #**

Part A – HiChem™ 11-70PW Iso – Part # 60218

Part B – HiChem™ 11-70PW Resin – Part # 60219


**DESCRIPTION:**

HiChem™ is a two-component, 100% solids (no VOCs, no solvents), exothermic, rapid curing, elastomeric polyurea-based lining system specifically designed for excellent chemical resistance. HiChem 11-70PW has passed the rigorous testing requirements of the NSF/ANSI 61 Section 5 standards for pipes with a diameter of 0.75" or larger, and tanks 5 gallons or larger and is ALS Truesdail Laboratories listed.

**TYPICAL USES:**

- Durable protective lining with excellent chemical resistance for applications such as: primary containment, chemical processing equipment, tank linings, pipe linings, wet wells, water and wastewater treatment facilities, and immersion service.
- Spray-on application creates a monolithic, seamless lining which conforms to any shape and size.
- Stable from 20° F - 170° F (-6.7° C - 76.7° C).

**FEATURES AND BENEFITS:**

- Excellent corrosion resistance
- Excellent chemical resistance
- Complies with ALS - NSF/ANSI 61 section 5 standards for pipes with a diameter of 0.75" or larger, and tanks 5 gallons or larger
- Dense chemical structure imparts high impermeability
- Bonds to virtually all substrates of any dimension with proper surface preparation, including metals, woods, concrete, fiberglass, and geotextiles

<b>CHEMICAL PROPERTIES:</b>	<b>Standard Test</b>	<b>Isocyanate (A)</b>	<b>Resin (B)</b>
Specific Gravity (grams/cc)	ASTM D-792	1.16	1.04
Viscosity, CPS at 77°F (25°C)		150 - 250	600 - 800
Solids by volume/weight		100%	100%
Volatile Organic Compounds, calculated		0 lbs/gal	0 lbs/gal
Mix Ratio, parts per volume		1	1
Mix Ratio, parts per weight		93	100
Gel Time, seconds at 77°F (25°C)		3 - 4	
Tack-Free, seconds		4	
Theoretical Coverage (dft)		1600 sqft/gal at 1 mil thick	
Base Color		clear to straw yellow	off-white to dark amber
Shelf Life - Unopened containers		12 months	12 months

**TYPICAL PHYSICAL PROPERTIES:**

	<b>Test</b>	<b>Result</b>
Hardness (Shore D)	ASTM D-2240	70±5
Tensile Strength (psi)*	ASTM D-412	4,600 - 5,000
Tear Resistance (pli)** Die C	ASTM D-624	900 - 1,000
Elongation (%)*	ASTM D-412	35 - 40
Flexural Strength (psi)	ASTM D-790	7,000 - 8,000
Flexural Modulus (psi)	ASTM D-790	100,000 - 115,000
Impact Resistance, 100 mil thickness sample (in-lbs)	Gardner Tester	160
Taber Abrasion Resistance (mg of loss/1000 cycles)	ASTM D-4060	35
CS17 Wheel; 1000 grams weight		

\*Properties were checked of HiChem lining, 1/8" (125 mils), (3.18 mm) thick stock.

**PROCESSING CHARACTERISTICS:**

The system settings required to achieve quality spray application will vary depending on environmental and substrate conditions. The following recommended parameters will help ensure optimum lining quality.

<b>Equipment Used</b>	<b>Process Pressure</b>	<b>Spray Gun</b>	<b>Mix Module</b>
Graco Reactor E-XP2	2,300 psi (static)	Fusion - Air Purge or Mechanical Purge	AR2929 or greater

**Process Temperatures and Relative Humidity**

<b>Iso Component</b>	<b>Resin Component</b>	<b>Hoses</b>
140° - 160° F (60° - 71° C)	140° - 150° F (60° - 66° C)	140° - 160° F (60° - 71° C)

**DRY FILM THICKNESS RANGE:**

Varies based on application, typically used at 80 mils (2 mm) to 160 mils (4 mm).

**NOT RECOMMENDED FOR:**

- Sustained temperatures below 20° F (-6.7° C) or Above 170° F (76.7° C)
- Concrete substrates subject to high impact
- Application to high density polyethylene or thermo plastics

**CHEMICAL RESISTANCE:**

HiChem has excellent resistance to a variety of commercial and industrial chemicals. Examples of some of the chemicals it can withstand are listed below. For further information and a more comprehensive list, please refer to our Chemical Resistance Chart found on our website or speak to a Rhino Linings® representative.

Properties were checked of HiChem polyurea-based lining, 1/8" (125 mils), (3.18 mm) thick stock at 75° F (24°C). Results may vary at elevated temperatures.

Acetic Acid to 10%	Kersone
Alkylphenol Detergents	Motor Oil
Bleach	Muriatic Acid
DI Water	Plasticizers
Diesel	Sodium Hydroxide to 20%
Hydrochloric Acid to 30%	Sulfuric Acid to 20%
Hydrogen Peroxide to 3%	Sodium Hypochlorite to 13%

**SURFACE PREPARATION:**

Apply Rhino HiChem 11-70PW to only clean, dry, sound surfaces free of loose particles, or other foreign matter. A primer may be required, subject to type and/or condition of the substrate. Consult technical service personnel for specific primer recommendations and substrate preparation procedures.

**COLOR OPTIONS:**

Limited color range available.

**SAFETY PRECAUTIONS:****HEALTH CONSIDERATIONS: Consult the Rhino Linings Safety Data Sheets (SDS)**

This chemical system requires the use of proper safety equipment and procedures. Please follow the Rhino Linings product SDS for detailed information and handling guidelines.

**FOR YOUR PROTECTION:**

The information and recommendations in this publication are, to the best of our knowledge, reliable. Suggestions made concerning the products and their uses, applications, storage, and handling are only the opinion of Rhino Linings Corporation. Users should conduct their own tests to determine the suitability of these products for their own particular purposes and of the storage and handling methods herein suggested. The toxicity and risk characteristics of products made by Rhino Linings Corporation will necessarily differ from the toxicity and risk characteristics developed when such products are used with other materials during a manufacturing process. The resulting risk characteristics should be determined and made known to end users and processors.

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**Contact Rhino Linings Technical Support at 858-450-0411 ext. 2 for additional questions.**

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