

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

Part B – HiChem™ 11-70 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 11-70 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 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 and wet wells
  - water and wastewater treatment facilities
  - immersion service
- Spray-on application creates a monolithic, seamless lining which conforms to any shape and size.
- Stable from 20° F to 170° F (-6.7° to 76.7° C)

**FEATURES & BENEFITS:**

- Excellent corrosion resistance
- Excellent chemical resistance
- Complies with 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, including metals, woods, concrete and fiberglass



Meets the Requirements of  
NSF/ANSI 61-5

<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	1.05
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

<b>TYPICAL PHYSICAL PROPERTIES:</b>	<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	9,00 – 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) CS17 Wheel; 1000 grams weight	ASTM D-4060	35

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

(continued)

**HICHEM™ 11-70 (continued):**

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

Equipment Used	Process Pressure	Spray Gun	Mix Module
Graco Reactor E-XP2	2300 psi (static)	Fusion - Air Purge or Mechanical Purge	AR2929 or greater

Process Temperatures and Relative Humidity

Iso Component	Resin Component	Hoses
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 15%	Sulfuric Acid to 20%
Hydrogen Peroxide to 3%	

**SUBSTRATES:** Concrete, fiberglass, metals and wood

**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 and Safety Manual 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 ultimate end-users and processors. Because of numerous factors affecting results, **Rhino Linings Corporation makes no warranty of any kind, express or implied**, other than that the material conforms to its applicable current Standard Specifications. Rhino Linings Corporation hereby disclaims any and all other warranties, including but not limited to those of merchantability or fitness for a particular purpose. No statements made herein may be construed as a representation or warranty. The liability of Rhino Linings Corporation for any claims arising from or sounding in breach of warranty, negligence, strict liability, or otherwise shall be limited to the purchase price of the material.

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**Rhino Linings Corporation**  
9747 Businesspark Avenue, San Diego, CA 92131  
858-450-0441 • Fax 858-450-6881  
1-800-422-2603  
www.rhinolinings.com