

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 with proper surface preparation, including metals, woods, concrete and fiberglass and geotextiles.



| CHEMICAL PROPERTIES: | Standard Test | Isocyanate (A) | Resin (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: | Test | Result |
|---|----------------|-------------------|
| 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% | Sodium Hypochlorite to 13% |

SURFACE PREPARATION: Apply Rhino HiChem™ 11-70 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 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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