



Rhino Linings®

PREMIUM PROTECTION



Rhino HiChem 1170

SIDE-A – ISO

SIDE-B - Resin

Revised Date: 22/05/2020

This TDS Replaces All Previous Versions

DESCRIPTION

Rhino HiChem™ 1170 is a two-component, 100% solids (no VOCs, no solvents), exothermic, rapid curing, elastomeric polyurea-based lining system specifically designed for excellent chemical resistance. Rhino HiChem 1170 has passed the rigorous testing requirements of the NSF/ANSI 61 Section 5 (2012) potable water standard and is Truesdail Laboratories listed.

FEATURES & BENEFITS

- Excellent corrosion resistance
- Excellent chemical resistance
- Complies with NSF/ANSI 61 Sections 5 (2012) potable water standard
- Dense chemical structure imparts high impermeability
- Bonds to virtually all substrates of any dimension, including metals, woods, concrete, geotextiles and fibreglass
- Stable from -6.7°C to 76.7°C

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

NOT RECOMMENDED FOR

- Sustained temperatures below -6.7°C or above 76.7°C
- Concrete substrates subject to high impact
- Application to high density polyethylene or thermo plastics
- Do not apply to concrete with curing or sealing membranes
- Do not apply to substrates affected by moisture content in excess of 5%
- Do not apply to concrete less than 28 days old
- Avoid applying in conditions with high humidity
- **NOTE** – Substrate temperature **must** be 3°C above the dew point prior to application

TYPICAL PHYSICAL PROPERTIES

	Test	Result
Gel Time, seconds at 25°C	3 – 4	
Tack-free, seconds	4	
Theoretical Coverage (dft)	1m ² /L @1mm thick	
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	7000 - 8000
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 at ,3.18 mm thick

CHEMICAL RESISTANCE

Rhino 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 Contact Rhino Linings technical/sales department for details.

Properties were checked of Rhino 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	Kerosene
Alkyphenol Detergents	Motor Oil
Muriatic Acid	Sodium Hypochlorite
Plasticiser	Treated Effluent
Diesel	Sodium Hydroxide
Hydrochloric Acid	Sulfuric Acid
Hydrogen Peroxide	Raw Sewerage
Ammonium Hydroxide	Sodium Chloride
Sea Water	Hydrogen Sulphide
Methane Gas	

Please contact Rhino Linings for further information.

CHEMICAL PROPERTIES

	Test	Isocyanate (A)	Resin (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 grams/litre	0 lbs/gal / 0 grams/litre
Mix Ratio, Parts per volume		1	1
Mix Ratio, parts per weight		93	100

COMMON SUBSTRATES

Concrete, fiberglass, metals and wood

VOLATILE ORGANIC COMPOUND

Zero VOC

DRY FILM THICKNESS RANGE

Varies based on application, typically 2 mm to 4 mm

STORAGE AND PACKAGING

Components should be stored in sealed containers, in a dry area away from direct sunlight at 15°C – 30°C. **Constant 25°C recommended.**

Available in 200L drums only.

Part A –215kg Isocyanate: 12 months, unopened; stored properly.

Part B – 197kg Resin: 12 months, unopened; stored properly.

BASE MATERIAL COLOUR

Straw / Cream

COLOUR OPTIONS

Limited colour range available

RE-APPLICATION PROCEDURES

Clean old Polyurea so it is free from contaminants, cleaning with biodegradable foaming agents or similar if necessary. Once cleaned and dry, abrade surface to gain a rough scratched profile (80 Grit sandpaper or nylon cup brush). Remove all dust with air and wipe substrate with acetone then prime using RhinoPrime 251 primer to TDS.

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	Spray Pressure	Process Temperature	Spray Gun	Mix Module
Graco EXP-1; E-XP2	2000psi – 3500psi	55°C - 65°C	Fusion – Air Purge	AR2929 or Greater
Graco E-10HP	1500psi – 2500psi	55°C - 65°C	Fusion – Air Purge	AR2020 – AW2222

NOTE - Processing temperatures are a guide only, please contact Rhino Linings Technical department for further details.

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.

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