Rhino Linings®

Rhino Cast™ 11-80 Series
Data Sheet

Part A – Rhino Cast™ 11-80 Iso
Part B – Rhino Cast™ 11-80 Resin

DESCRIPTION:

Rhino Cast™ 11-80 Series, a two component urethane can be formulated as a low durometer (25 – 90 Shore A), potting, casting and encapsulating compound with gel times from 40 seconds to 10 minutes. The material is engineered to provide excellent hydrolytic stability and low moisture permeability. It has outstanding thermal cycling properties, low glass transition temperatures and low embedment stress to sensitive electronic components.

This unique urethane formulation will maintain its integrity over a wide operating temperature range, -40°C to 100°C. The low glass transition temperature of -40°C makes this urethane ideal for low temperature potting applications.

FEATURES & BENEFITS:

- Maintains flexibility at low temperatures
- Excellent electrical insulation
- Low stress on sensitive components
- Unaffected by moisture at high temperatures
- Thermal cycling stability
- Chemical resistance
- Hydrolytic stability
- No shrinkage

CHEMICAL PROPERTIES:	Isocyanate	Resin	Test
Specific Gravity (grams/cc)	1.1	1.05	ASTM D-792
Viscosity, CPS at 77°F (25°C)	750 ± 150	1800 ± 200	
Weight per Gallon	9.17	8.76	
Mix Ratio, Parts per Volume	1	1	
Mix Ratio, Parts per Weight	105	100	
Solids by Volume	100%	100%	
Solids by Weight	100%	100%	
Volatile Organic Compounds	0 lbs/gal	0 lbs/gal	
Shelf Life - Unopened Containers	12 months	6 months	
Base Color	straw yellow	opaque	

TYPICAL PHYSICAL PROPERTIES:	Result	Test
Hardness (Shore A)	80±5	ASTM D-2240
Tensile Strength (psi)*	>1000	ASTM D-412
Elongation (%)*	>200	ASTM D-412
Glass transition temperature (°C)	-40	
Taber Abrasion Resistance (mg of loss/1000 cycles) CS17 Wheel; 1000 grams weight	10 – 15	ASTM D-4060
Dielectric Strength (volts/mil)	300	ASTM D-149
Volume Resistancy (ohm/cm)	6 X 10^{16}	ASTM D-257
Surface Resistancy (ohm/cm)	1 X 10^{16}	ASTM D-257
Coefficient of Thermal Expansion (per °C)	2.28 X 10^{-4}	ASTM D-257
Dielectric Constant (MHz)	4.5	ASTM D-150
Dissipation Factor (MHz)	0.058	ASTM D-150
Cathodic Disbonding	Pass	ASTM G-8

*Properties were checked on Rhino Cast polyurethane sample, 1/8" (125 mils), (3.18 mm) thick stock.

PROCESSING CHARACTERISTICS OF RHINO CAST™ 11-80 Series at 77°F (25°C):

	Hand Mix	Static Mix	Mechanical Mix
Gel Time, sec	40 to 600	40 to 600	10 to 300
Tack Free, min	10 to 45	10 to 45	3 to 45

APPLICATIONS:

- Stable from -40°F (-40°C) to 257°F (125°C)
- Elastomeric properties allow for application to surfaces subject to vibration, expansion, contraction, movement, flexing, abrasion and impact.
- Casting material for material handling equipment such as chutes, hoppers, rollers, etc.

STORAGE:

Store both components at 75 – 85°F in original containers. If the containers are opened and the contents partially used, the material left in the container should be blanketed with dry nitrogen before sealing.

CHEMICAL RESISTANCE:

Good resistance to many routine chemicals such as: weak acids, weak alkalies, oils and cleaning agents. For specific applications and/or information, consult with a Rhino Linings® representative.

SUBSTRATES:

Metals, wood, concrete, fiberglass and geotextiles.

CASTING THICKNESS RANGE:

Varies based on application. Thickness can vary from a minimum of 1/16" (62.5 mils; 1.5mm) to unlimited thickness.

COLOR OPTIONS:

Full color range available. Pigments sold separately.

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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