

Advanced Materials**RenCast[®] 178-59-1 / Ren[®] 178-59-1**

POLYURETHANE CASTING SYSTEM

DESCRIPTION:

RenCast[®] 178-59-1(Resin) / Ren[®] 178-59-1(Hardener) is a two-component, liquid polyurethane casting system. When cured it forms a very hard, tough, heat resistant compound.

APPLICATIONS:

For use in foundry applications with sand conditions, as well as a tough, general purpose casting resin for tooling applications such as holding and checking fixtures. RenCast[®] 178-59-1 can be cast up to 1.5 inches thick.

MIXING INSTRUCTIONS:

Reaction Ratio 36R to 100H by weight
 50R to 100H by volume

Mixing: Stir each component thoroughly before use. Weigh each component accurately ($\pm 5\%$) into clean containers. Thoroughly mix resin and hardener together (minimum 3 minutes) scraping container sidewalls, bottom and mixing stick several times to assure a uniform mix.

TYPICAL MIXED PROPERTIES:

Property	ASTM Test Method	Test Values ⁽¹⁾
Gel time (4 fl. oz.)	D-2471	22 min
Color	Visual	Reddish brown
Viscosity	D-2393	4,000 cP

⁽¹⁾Tested @ 77°F (25°C)

TYPICAL CURED PROPERTIES:

Property	ASTM Test Method	Test Values ⁽¹⁾
Density (g/cc)	D-792	1.61
Izod Impact (ft-lb/in)	D-256	0.35
Hardness (Shore D)	D-2240	88 ± 5
Ultimate Compressive Strength (psi)	D-695	14,500
Ultimate Flexural Strength (psi)	D-790	9,000
Flexural Modulus (psi)	D-790	835,000
Ultimate Tensile Strength (psi)	D-638	5,500
Tensile Modulus (psi)	D-638	905,000
Taber Wear Index, H-22	D-1044	40mg/100 cycles
Tg per DMA	D-4065	201°F (94°C)
Deflection Temperature (264 psi)	D-648	136°F (58°C)
Coefficient of Thermal expansion	D-3386	(in/in °F)
		(in/in °C)
Shrinkage	D-2566	Mold #1 (in/in) (cast)
		Mold #2 (in/in) (cast)

⁽¹⁾Cure Schedule - 7 days at 77°F (25°C), tested @ 77°F.

NOTE: Typical Properties – These physical properties are reported as typical test values obtained by our test laboratory. If assistance is needed in establishing product specifications, please consult with our Quality Control Department.

CURING INSTRUCTIONS:

Although room temperature epoxies will normally set up to a rigid, demoldable state within 24 hours at room temperature (75°F ± 5°F), these systems reach their full cure after seven days at room temperature. A full cure can be accelerated by applying heat after the part has set rigid. We recommend a postcure of 176°F for a minimum of 16 hours. (Add to this adequate time to bring the part to the postcure temperature.) After cure, the part should be cooled at a slow rate so as not to shock the part thermally.

Uniform heat distribution is also required during postcure, concentrated heat, such as that directed from a lamp, can cause warp. An elevated temperature cure will slightly increase the shrinkage compared to a room temperature cure.

HANDLING:**RenCast® 178-59-1 / Ren® 178-59-1**

This product is moisture-sensitive and packaged under a blanket of dry nitrogen. Maintain factory seal, after use, reblanket with dry nitrogen and tightly reseal.

Work in a well ventilated area and use clean, dry tools for mixing and applying. For two component system, combine the resin and hardener according to mix ration. Mix together thoroughly and use immediately after mixing. Material temperature should not be below 18 °C (65 °F) when mixing.

RenCast® 178-59-1

This product may crystallize upon storage. If crystallized, vent container and heat to 125 – 145 °F until crystals dissolve. Stir well after product has liquefied.

Stir well before use. This material will separate.

Ren® 178-59-1

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STORAGE:

RenCast® 178-59-1(Resin) / Ren® 178-59-1(Hardener) should be stored in a dry place, in the sealed original container, at temperatures between +2°C and +40°C (+35.6°F and 104°F). Under these storage conditions, the shelf life is 1 year. The product should not be exposed to direct sunlight.

PRECAUTIONARY STATEMENT:

Huntsman Advanced Materials Americas LLC maintains up-to-date Material Safety Data Sheets (MSDS) on all of its products. These sheets contain pertinent information that you may need to protect your employees and customers against any known health or safety hazards associated with our products. Users should review the latest MSDS to determine possible health hazards and appropriate precautions to implement prior to using this material.

First Aid!

Refer to MSDS as mentioned above.

KEEP OUT OF REACH OF CHILDREN**FOR PROFESSIONAL AND INDUSTRIAL USE ONLY**

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