

## RenCast<sup>®</sup> 6410-1 Resin / Ren<sup>®</sup> 6410-3 Hardener



### Product Description

The RenCast<sup>®</sup> 6410-1 Resin / Ren<sup>®</sup> 6410-3 Hardener system is one of the most flexible polyurethane systems of the Rencast<sup>®</sup> product line. Its high flexibility allows an easy stripping of the mold from undercuts and complex parts. The low viscosity and convenient one-to-one (by weight) mix ratio makes the RenCast<sup>®</sup> 6410-1 Resin / Ren<sup>®</sup> 6410-3 Hardener system easy to process and handle. Complete cure can be achieved at room temperature or can be accelerated by heating at 176 °F (80 °C) for 16 hours after the material has gelled.

### Applications

- Flexible molds
- Resilient parts
- Strippers and pads

### Features

- High Resilience
- High Flexibility
- One to one mix ratio by weight

### Typical Properties

Property	RenCast <sup>®</sup> 6410-1 Resin	Ren <sup>®</sup> 6410-3 Hardener	Test Method
Color	Milky white	Clear amber	Visual
Density, g/cm <sup>3</sup>	1.71 - 1.77	1.85 - 1.90	--
Viscosity @ 77°F (25°C), cP	10,000 - 14,000	120 - 130	ASTM D-2393

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## Processing

### Mix ratio

Product	Parts by weight	Parts by volume
RenCast <sup>®</sup> 6410-1 Resin	100.0	93.0
Ren <sup>®</sup> 6410-3 Hardener	100.0	100.0

**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 ensure a homogenous mix.

### Typical Mixed Properties

Property	
Gel Time @ 77 °F (25 °C), 150 g, min.	~24
Initial Mixed Viscosity @ 77 °F (25 °C), cp	900 - 1,650
Viscosity 5 min. after mixing, cp	1,300 - 2,500
10 min.	1,700 - 3,200
15 min	3,300 - 5,200

### Curing Instructions

Although ambient curing polyurethane systems will normally set up to a rigid, de-moldable state within 24 hours at room temperature (75 °F  $\pm$  5 °F), these systems only reach their full cure after seven days at room temperature. Curing may be accelerated by applying heat after the part has set rigid. A post cure of 176 °F for a minimum of 16 hours is recommended after the part has been allowed to reach the post cure temperature. After completing the curing cycle, the part should be allowed to cool slowly in order to avoid any thermal shock.

Uniform heat distribution is also required during post cure; concentrated heat, such as that directed from a lamp, can cause warp. Curing at an elevated temperature will slightly increase the shrinkage compared to a part cured at ambient temperature.

**Demold time** (for most applications) ~ 16 hours

**Cure time** (for ultimate properties) ~ 7 days

### Typical Physical Properties

Cure Schedule: 7 days @ 77 °F (25°C), Tested @ 77 °F (25 °C)

Property	Test Method	Value
Density, g / cm <sup>3</sup>	ASTM D-792	1.04
Hardness (Shore A)	ASTM D-2240	42 ± 5
Tensile Strength, psi	ASTM D-412 (*)	> 500
Ultimate Elongation, %	ASTM D-412 (*)	> 340
Tear Strength (lb.f / in)	ASTM D-624, Die C (*)	> 85
Linear Shrinkage	ASTM D-2566 Mold #1	0.003

(\*) tested at 20 inch / minute

Unless otherwise stated, the data were determined with typical production batches using standard test methods. They are typical values only, and do not constitute a product specification.

### Handling

The Rencast<sup>®</sup> 6410-1 Resin and Ren<sup>®</sup> 6410-3 Hardener System is moisture-sensitive and packaged under a blanket of dry nitrogen. Container should be purged with a dry nitrogen blanket and tightly resealed after each use.

Work in a well-ventilated area and use clean, dry tools for mixing and applying the Rencast<sup>®</sup> 6410-1 Resin and Ren<sup>®</sup> 6410-3 Hardener System. Material temperature should not be below 65 °F (18 °C) when mixing.

If a crust is formed in the Rencast<sup>®</sup> 6410-1 Resin, the material is no longer usable and should be disposed of in accordance to local and State regulations.

### Storage

When stored in a dry place in their original sealed containers at a temperature between +2°C and +40°C (+35.6°F and 104°F), the RenCast<sup>®</sup> 6410-1 Resin and Ren<sup>®</sup> 6410-3 Hardener have a 24 months shelf life. The product should not be exposed to direct sunlight.

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## **Precautionary Statement**

Huntsman Advanced Materials Americas LLC maintains up-to-date Safety Data Sheets (SDS) 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 SDS as mentioned above.

**KEEP OUT OF REACH OF CHILDREN**

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