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## Advanced Materials

# RenCast® 6400-1/Ren® 6400-3 Resin and Hardener

RENCAS<sup>®</sup>T POLYURETHANE ELASTOMER  
A RESILIENT SHORE 52 ± 7A ELASTOMER FOR FLEXIBLE MOLDS

### DESCRIPTION :

RenCast® 6400-1/Ren® 6400-3 R/H is an off-white, low viscosity, two-component polyurethane elastomer offering superior strength and toughness without containing MOCA<sup>1</sup> or TDI<sup>2</sup>. The flexibility of RenCast® /Ren® 6400-1 R/H permits easy stripping of molds from detailed parts and undercuts. The low viscosity allows reproduction of fine detail with a minimum of air entrapment. RenCast® 6400-1 /Ren® 6400-3 R/H develops high strengths with only a room temperature cure.

### APPLICATIONS :

- Flexible molds
- Resilient parts
- Polyurethane foaming molds
- Stripped and pads

### MIXING INSTRUCTIONS :

Reaction Ratio        10R to 100H (by wt.)

**Mixing** : Stir each component thoroughly before use. Weight each component accurately (± 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 <sup>3</sup>
Get time and Viscosity Profile (110g)	<u>Time (min.)</u>	<u>Viscosity (cP)</u>
	5	1,700
	15	4,000
	20	gelled
Color	Resin        Visual	Amber
	Hardener	Off-white
Viscosity	Resin        D-2393	50 cP
	Hardener	1,300 cP
Demold time (for most applications)		24 hours
Cure time (for ultimate properties)		3 - 7 days

<sup>1</sup> MOCA – 4,4' methylene bis (2-chloroaniline)

<sup>2</sup> TDI – toluene diisocyanate

<sup>3</sup> Tested @ 77 °F (25 °C)

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**TYPICAL CURED PROPERTIES :**

<b>Property</b>	<b>ASTM Test Method</b>	<b>Test Values <sup>(1)</sup></b>
Density (g/cc)	D-792	1.04
Hardness (Shore A)	D-2240	52 ± 7
Ultimate Tensile Strength (psi)	D-638 @ 20"/min.	1,143 (7.88 MPa)
Ultimate Elongation (%)	D-638 @ 20"/min.	251
Tear Strength (ppi)	D-624 @ 20"/min.	132 (23.1 kN/m)
Linear shrinkage (in/in)	D-2566 Mold #1	0.001

<sup>(1)</sup> Cure Schedule – 7 days @ 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.

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**CURING INSTRUCTIONS :**

Although room temperature polyurethane 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.

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**STORAGE/HANDLING INFORMATION:**

RenCast<sup>®</sup> 6400-1 / Ren<sup>®</sup> 6400-3 System should be stored in a dry place, in the sealed original containers, at temperatures between 20°C and 40°C (68F and 104°F). Under these storage conditions, the shelf life is 2 years. The product should not be exposed to direct sunlight.

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 ratio. Mix together thoroughly and use immediately after mixing. Material temperature should not be below 68 °F (20 °C) when mixing.

Exercise reasonable care and caution. Avoid breathing vapor. Store in cool place. The vapor of this product is heavier than air and will collect in low areas such as pits, degreasers, storage tanks, and other confined areas. Do not enter these areas where the vapor of this product is suspected unless special breathing apparatus is used and an observer is present for assistance. Do not pressure product out of vessel or transport container with air.

**RENCAS<sup>®</sup> 6400-1 Resin**

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.

**REN<sup>®</sup> 6400-3 Hardener**

This product upon storage will form a hard precipitate on the bottom of container. Stir well before use.

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**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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**PRECAUTIONARY NOTE :**

Thermosetting systems generate heat when curing. The amount of heat and the period of time in which heat is released vary significantly between systems. Additionally, ambient or compound temperature, amount of material mixed, and construction and shape of the mold or container can also be factors in the temperature profile of a mixed system.

In some cases, the thermosetting reaction can be vigorous, generating heat sufficient to cause decomposition of the system with subsequent liberation of large volumes of acrid smoke.

A good rule of thumb is never mixing more material than can be applied during the stated pot life or gel time. Also take care when using materials in applications other than stated on the Product Data Sheet, i.e., a laminating resin for casting.

Please feel welcome to call our Product Information Department or your local Ren<sup>®</sup> representative for instructions before you start your job.

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**IMPORTANT LEGAL NOTICE**

Huntsman Advanced Materials warrants only that its products meet the specifications agreed with the user. Typical properties, where stated, are to be considered as representative of current production and should not be treated as specifications.

The manufacture of materials is the subject of granted patents and patent applications; freedom to operate patented processes is not implied by this publication.

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