

Advanced Materials**RenCast® 6401-1 / Ren® 6401-3 System**

POLYURETHANE ELASTOMER
 A TOUGH RESILIENT SHORE 65 ± 10A ELASTOMER FOR FLEXIBLE
 MOLDS

**DESCRIPTION:**

RenCast® 6401-1(Resin) / Ren® 6401-3 (Hardener) is an off-white, two-component polyurethane elastomer that develops superior physical strengths without containing MOCA⁽¹⁾ or TDI⁽²⁾. The low viscosity liquids are easily mixed and cast with a minimum of air entrapment to produce surfaces with fine detail reproduction. Physical properties are excellent compared to RTV silicone. The flexibility of RenCast® 6401-1/Ren 6401-3 allows easy removal of complex parts.

APPLICATIONS:

- Flexible molds
- Resilient parts
- Rollers
- Strippers and pads

MIXING INSTRUCTIONS:

Reaction Ratio 25R to 100H (by wt.)

Mixing: Weigh 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 ⁽³⁾
Gel time and Viscosity Profile (125g)	<u>Time (min)</u>	<u>Viscosity (cP)</u>
	5	1,200
	10	1,800
	15	4,400
	20	gelled (20,000 cps)
Color Resin Hardener	Visual	Amber Off-white
Viscosity Resin Hardener	D-2393	50 cP 1,300 cP
Demold time (for most applications)		16 - 24 hours
Cure time (for ultimate properties)		3 - 7 days

⁽¹⁾ MOCA – 4,4' methylene bis (2-chloroaniline)

⁽²⁾ TDI – toluene diisocyanate

⁽³⁾ Tested @ 77°F (25°C)

TYPICAL CURED PROPERTIES:

Property	ASTM Test Method	Test Values ⁽¹⁾
Density (g/cc)	D-792	1.07
Hardness (Shore A)	D-2240	65 ± 10
Ultimate Tensile Strength (psi)	D-638 @ 20"/min.	1,720 (11.86 MPa)
Ultimate Elongation (%)	D-638 @ 20"/min.	270
Tear Strength (ppi)	D-624 @ 20"/min. DIE C	214 (37.4 kN/m)
Linear shrinkage (in/in)	D-2566 Mold #1	0.0005

⁽¹⁾ 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.

CURING INSTRUCTIONS:

Although room temperature polyurethanes 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 increase the shrinkage compared to a room temperature cure.

STORAGE/HANDLING INFORMATION:

RenCast[®] 6401-1 / Ren[®] 6401-3 System should be stored in a dry place, in the sealed original containers, at temperatures between +2°C and +40°C (+35.6°F 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 systems, combine the resin and hardener according to mix ratio. Mix together thoroughly and use immediately after mixing. Material temperature should not be below 65°F (18°C) when mixing.

RenCast[®] 6401-1 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[®] 6401-3 Hardener

This product upon storage will form a hard precipitate on the bottom of the container. Do not attempt to mix back in as this is normal and does not affect the quality of the product. However, do stir the liquid portion well before use.

SAFETY/HANDLING PRECAUTIONS:

Do not use this product until the MSDSs have been read and understood. To protect against any potential health risks presented by our products, the use of proper personal protective equipment (PPE) is recommended. Eye and skin protection is normally advised. Respiratory protection may be needed if mechanical ventilation is not available or is insufficient to remove vapors. For detailed PPE recommendations and exposure control options consult the product MSDS or a Huntsman EHS representative.

PRECAUTION 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.

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