



Product Data

RenCast™ 6442/Ren® 6442

Polyurea Elastomer

A Low Moisture Sensitive Shore 85 ± 5A Elastomer

DESCRIPTION: RenCast 6442(Resin)/Ren 6442(Hardener) is an amber, two-component casting elastomer designed for tooling applications. RenCast 6442 cures fully at room temperature without containing MOCA⁽¹⁾, TDI⁽²⁾ or MDA⁽³⁾. The low viscosity, excellent working life and convenient one-to-one mixing ratio makes RenCast 6442 easy to handle.

APPLICATIONS:

- Vibration damping
- Production and prototype parts
- Pads and strippers

MIXING INSTRUCTIONS:

Reaction Ratio

100R to 100H (by wt.)

100R to 94H (by vol.)

Mixing: Stir each component thoroughly before use. 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 ⁽⁴⁾	
Gel time and Viscosity Profile (4 fl.oz.)	<u>Time (min.)</u>	<u>Viscosity (cP)</u>	
	5	1,610	
	15	2,350	
	25	4,350	
	28	20,000	
Color	Resin Hardener	Visual	Light Yellow Light Amber
Viscosity	Resin Hardener	D-2393	8,000-12,000 cP 80-130 cP
Demold time (for most applications)			Within 24 hours

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

⁽²⁾TDI – toluene diisocyanate

⁽³⁾MDA – 4,4'-methylene dianiline

⁽⁴⁾Tested 7 days @ 77°F (25°C)

TYPICAL CURED PROPERTIES:

Property	ASTM Test Method	Test Values ⁽¹⁾
Density (g/cc)	D-792	1.09
Hardness (durometer) (Shore A)	D-2240	85 ± 5
Tensile Strength (psi)	D-638 @ 20"/min.	2,100 psi (14,500 kPa)
Ultimate Elongation (%)	D-638 @ 20"/min.	525
Tear Strength (ppi)	D-624 @ 20"/min DIE C	290 ppi 50.8 KN/m
Taber Wear Index	D-4060 Wheel H-18	2.1mg/100 cycles
Compression set* (%)	D-395 B	52
Linear shrinkage Mold #1 (in/in)	D-2566	<0.001

⁽¹⁾Cure Schedule – 7 days @ 77°F (25°C), tested @ 77°F

* Compression set ASTM D-395 Method B

The percent of permanent deformation resulting from constant deflection/pressure required to compress samples 25%.

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 slightly increase the shrinkage compared to a room temperature cure.

STORAGE/HANDLING INFORMATION: RenCast 6442 and Ren 6442

Store at 70-90°F. 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 ratio. Mix together thoroughly and use immediately after mixing. Material temperature should not be below 65°F (18°C) when mixing.

SHELF LIFE: Providing this material is stored under the recommended storage conditions in their original containers, it will remain in useable condition for six months from date of shipping.

PACKAGING: This product is available in the following package size(s):

- “A” Package: Small pail resin/small pail hardener (total weight 13.8#)
- Pail Units: Pail resin (40#) with hardener pail (40#)
- Drum Units: Drum resin (393#), drum hardener (393#)

Please call Customer Service (800 367 8793) for price and availability.

SAFETY/HANDLING PRECAUTIONS: Do not use or handle this product until the Material Safety Data sheet has been read and understood.

RenCast 6442

DANGER! CORROSIVE – causes eye burns and skin irritation. Harmful if inhaled. May cause allergic skin and respiratory reactions.

Do not get in eyes. Avoid contact with skin and clothing. Avoid breathing vapor or mist. Avoid prolonged or repeated contact with skin. Keep container closed. Use with adequate ventilation. Wash thoroughly after handling.

Ren 6442

WARNING! Causes eye, skin and respiratory irritation. May cause allergic skin reaction.

Avoid contact with eyes, skin, and clothing. Avoid breathing vapor or mist. Avoid prolonged or repeated contact with skin. Keep container closed. Use with adequate ventilation. Wash thoroughly after handling.

NOTICE! Overexposure may cause liver damage.

Nuisance dust may be generated when sanding or sawing cured material.

FIRST AID: In case of contact

Skin: Immediately wash with soap and water. Remove contaminated clothing and launder before reuse. Destroy contaminated shoes.

Eyes: Immediately flush with water for at least 15 minutes. Call a physician.

Ingestion: If conscious, give plenty of water to drink. Do not induce vomiting. Call a physician.

Inhalation: Remove to fresh air. Administer oxygen or artificial respiration if necessary. Call a physician.

Other: Referral to physician is recommended if there is any question about the seriousness of any injury.

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 mix 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 representative for instructions before you start your job.

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