HUNTSMAN

Enriching lives through innovation

Advanced Materials

RenCast® 6430 / Ren® 6430

POLYURETHANE ELASTOMER
A RIGID HIGH STRENGTH SHORE 75 ± 3D ELASTOMER

DESCRIPTION :

Rencast® 6430 (Resin) / Ren® 6430 (Hardener) is a liquid, two-component polyurethane system that produces tough, rigid castings. Rencast® 6430 contains special moisture scavengers which assist in reducing voids in castings. Castings of Rencast® 6430 can be pigmented using Vantico coloring pastes.

APPLICATIONS :

Prototyping and short-run production.

MIXING INTRUSCTIONS :

Reaction Ratio	100 Resin to 50 Hardener by weight 100 Resin to 52 Hardener by volume

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**[(1)]
Gel Time and Viscosity Profile (150g)		Time (min.)	Viscosity (cP)
		5	200
		20	gelled
Color	Resin	Visual	Amber
	Hardener		White
Viscosity	Resin	D-2393	50 cP
	Hardener		1100 cP
Demold time (for most applications)			24 hours
Cure time (for ultimate properties)			7 days

(1) Tested - @ 77 °F (25 °C)

TYPICAL CURED PROPERTIES :

Property	ASTM Test Method	Test Values[1]	Test Values[2]
Density (g/cc)	D-792	1.14	1.14
Notched IZOD Impact Strength (ft-lb/in)	D-256	0.61	0.57
Hardness (Shore D)	D-2240	75 ± 3	75 ± 3
Ultimate Compressive Strength (psi)	D-695	6,400	13,000
Compressive Modulus (psi)	D-695	222,000	217,000
Ultimate Flexural Strength (psi)	D-790	9,600	10,700
Flexural Modulus (psi)	D-790	271,000	254,000
Ultimate Tensile Strength (psi)	D-412 @ 2"/min. DIE C	5,900	6,700
Elongation at break (%)	D-412 @ 2"/min. DIE C	13	11
Tear Strength (ppi)	D-624 @ 2"/min. DIE C	420	400
Tg per DMA	D-4065	161 °F (72 °C)	204 °F (96 °C)
Deflection Temp. (264 psi)	D-648	127 °F (53 °C)	160 °F (71 °C)
(66 psi)	D-648	131 °F (55 °C)	170 °F (77 °C)
Coefficient of Thermal Expansion (in/in °F)	D-3386	5.8×10^{-5}	5.7×10^{-5}
Linear Shrinkage (in/in) Mold #1, 0.875" deep	D-2566	0.0024	0.0047

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 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 posture of 176 °F for a minimum of 16 hours. (Add to this adequate time to bring the part to the posture 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 posture ; 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.

[1] Cure Schedule – 7 days @ 77 °F (25 °C) tested @ 77 °F
[2] Cure Schedule – 24 hours @ 77 °F (25 °C) + 16 hours @ 176 °F (80 °C)

STORAGE/HANDLING INFORMATION :

RenCast® 6430 and Ren® 6430
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 ration. Mix together thoroughly and use immediately after mixing. Material temperature should not be below 65 °F (18 °C) when mixing.

RenCast® 6430
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® 6430
Stir well before use. This material will separate.

SHELF LIFE :

Provided this material is stored under the recommended storage conditions in the 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) :

Pre-weighed kits (13.8#)
Resin containers of 37.5# and 420# (requires two per hardener)
Hardener containers of 37.5# and 420#

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® 6430

WARNING. Harmful if inhaled. Causes skin and eye irritation. 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.

Ren® 6430

CAUTION In accord with god industrial practice, handle with due care. Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling.

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.

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, generation 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.

Caution 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.

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Main Offices :
Huntsman Corporation
10003 Woodloch Forest Dr.
The Woodlands
Texas 77380
(281) 719-6000

Huntsman Advanced Technology Center
8600 Gosling Rd.
The Woodlands
Texas 77381
(281) 719-7400
Website :
www.huntsman.com/advanced_materials