



Product Data

RenCast™ 6470/Ren® 6470/DT 082 Filler

CASTING POLYURETHANE AND MASS-CASTING POLYURETHANE SYSTEM

DESCRIPTION: RenCast 6470(Resin)/Ren 6470(Hardener) is a hard, 86D, polyurethane casting system. RenCast 6470 when used with DT 082 Filler is useful for mass casting applications requiring low cost, toughness, low shrinkage and low exotherm during cure.

APPLICATIONS: Sheet metal forming tools, duplicate milling models, foundry pattern plates, vacuum forming tools, negative molds and fixtures, and large volume molds for the ceramics industry.

MIX RATIO:

RenCast 6470 System By weight: 80 to 100 Resin to Hardener
RenCast 6470 with DT 082 Filler By weight: 80 to 100 to 360-410* Resin to Hardener to Filler

RenCast 6470 Mixing Instructions: Stir resin and hardener thoroughly before use. Weigh resin and hardener 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.

RenCast 6470 with DT 082 Filler Mixing Instructions: After mixing RenCast 6470 system, add the proper amount of DT 082 Filler slowly, while mixing, to the resin and hardener blend. Mix until all filler lumps have disappeared. Whenever possible, de-air the mixture before casting to remove unwanted air bubbles using a suitable vacuum pump and chamber (vacuum>26 inches mercury).

*If lower mixed viscosity is desired, adjust filler level of DT 082 Filler to a lower level.

TYPICAL HANDLING PROPERTIES: Tested @ 77°F (25°C) unless otherwise noted.

Property	Criteria	ASTM Test Method	Test Value
RenCast 6470 System			
Color	Resin Hardener Mixed	Visual	Clear amber Cloudy amber Off-white
Viscosity, cP	Mixed	D-2393	250-500
Gel Time, minutes	4 fl.oz.	D-2471	60-80
RenCast 6470 with DT 082 Filler			
Color	Resin Hardener Mixed	Visual	Clear amber Cloudy amber Off-white
Viscosity, cP	Mixed	D-2393	13,000
Gel Time, minutes	14 fl.oz.	D-2471	72

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.

**RECOMMENDED
CURE SCHEDULE:**

Temperature
77°F (25°C)

Demold Time
24 hours

Full Cure Time
7 days

TYPICAL CURED PROPERTIES:

Tested @ 77°F (25°C) unless otherwise noted.

RenCast 6470 System

Property	ASTM Test Method	Test ¹ Value	Test ² Value
Specific Gravity	D-792	1.23	1.23
Hardness (Shore D)	D-2240	86	88
Ultimate Flexural Strength, psi	D-790	14,000*	15,500*
Flexural Modulus, psi	D-790	410,000	440,000
Ultimate Tensile Strength, psi	D-638	4,700	9,000
Tensile Modulus, psi	D-638	423,000	427,000
% Elongation	D-638	1.3	3.4
Tg by DMA, °F (°C)	D-4065	155(68)	181(83)
Deflection Temperature, °F(°C) 66 psi 264 psi	D-648	127(53) 124(51)	140(60) 133(56)
Linear Shrinkage, in/in ** Mold #1	D-2566	0.0017	0.0069
Ultimate Compressive Strength, psi	D-695	12,200	12,500
Compressive Modulus, psi	D-695	251,000	255,000
Izod Impact, notched, ft-lb./in	D-256	0.36	0.45
Coefficient of Thermal Expansion, in/in/°F(°C) -22° to 86°(-30 to +30°C)	D-3386	38.6 x 10 ⁻⁶	37.8 x 10 ⁻⁶

¹Cured 7 days at 77°F(25°C)

²Cured 14 hours at 176°F (80°C”)

RenCast 6470 with DT 082 Filler

Property	ASTM Test Method	Test ³ Value	Test ⁴ Value
Specific Gravity	D-792	1.84	1.89
Hardness (Shore D)	D-2240	91	95
Ultimate Flexural Strength, psi	D-790	8,400	7,200
Flexural Modulus, psi	D-790	1,410,000	1,446,000
Ultimate Tensile Strength, psi	D-638	4,700	4,420
Tensile Modulus, psi	D-638	1,660,000	1,567,000
% Elongation	D-638	0.6	0.6
Tg by DMA, °F (°C)	D-4065	214(101)	165(74)
Linear Shrinkage, in/in ** Mold #1	D-2566	0.001	0.001
Ultimate Compressive Strength, psi	D-695	13,900	12,850
Compressive Modulus, psi	D-695	1,340,000	1,336,000
Izod Impact, notched, ft-lb./in	D-256	0.42	0.30
Coefficient of Thermal Expansion, in/in/°F(°C) -22° to 86°(-30 to +30°C)	D-3386	20.7 x 10 ⁻⁶	20.2 x 10 ⁻⁶

³Cured 7 days at 77°F(25°C), 80R:100H: 360Filler

*Stress at peak; samples did not break

⁴Cured 7 days at 77°F(25°C), 80R:100H: 410Filler

**Radius Depth 0.875” Length 10”

PACKAGING:

<u>Unit</u>	<u>RenCast 6470</u>	<u>Weight</u>
A package	RenCast 6470 System	14.4 lb.
Pail	RenCast 6470 Resin	32 lb.
	Ren 6470 Hardener	40 lb.
Pail	DT 082 Filler	33 lb.

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

STORAGE: 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.

CONDITIONING:

RenCast 6470 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 6470 Stir well before use. This material will separate.

HANDLING: 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: Provided materials are stored under the recommended storage conditions in their original containers, they will remain in useable condition for six months from date of shipping.

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

RenCast 6470

WARNING! Harmful if inhaled. Causes skin and eye irritation. Causes allergic skin and respiratory 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.

Ren 6470

DANGER! CORROSIVE – Causes skin burns. Causes eye irritation. Harmful if absorbed through skin.

Do not get in eyes, on skin, or on clothing.

Avoid breathing vapor or mist.

Keep container closed.

Use with adequate ventilation.

Wash thoroughly after handling.

FIRST AID: In case of contact with:

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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