



Product Data

Provisional Data Sheet

Polyurethane Elastomers

RenCast™ 6432-1/Ren® 6432-1

GENERAL PURPOSE, HAND CASTABLE, QUICK DEMOLD POLYURETHANE

DESCRIPTION: RenCast 6432-1(Resin)/Ren 6432-1(Hardener) is a non-mercury, hard 72D polyurethane casting system. The low viscosity of RenCast 6432-1 aids the production of finely detailed parts. The combination of rapid curing with a gel time of 5 to 6 minutes assists in rapid production of parts without the use of meter-mix equipment.

This product does not contain mercury.

APPLICATIONS: Prototype parts and short-run production parts.

MIX RATIO: By Weight: 100 to 50 Resin to Hardener
By Volume: 100 to 50 Resin to Hardener

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 1 minute) scraping container sidewalls, bottom, and mixing stick several times to assure a uniform mix.

Whenever possible, de-air the mixture before casting to remove unwanted air bubbles using a suitable vacuum pump and chamber.

DEMOLD TIME: Temperature 77° F (25°C) Time 1-2 hours Thickness 1/8"

RECOMMENDED FULL CURE SCHEDULE: Temperature 77°F (25°C) Time 7 days

TYPICAL HANDLING PROPERTIES:

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

Table with 4 columns: Property, Criteria, ASTM Test Method, Test Value. Rows include Color, Specific Gravity, Viscosity, cP, and Gel Time, minutes.

NOTE: 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.

TYPICAL CURED PROPERTIES:

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

| Property | ASTM Test Method | Test ¹ Value | Test ² Value |
|--|------------------|---|---|
| Density, lb./ft ³ (g/cm ³) | D-792 | 71 (1.13) | 70 (1.12) |
| Cubic Inch per Pound | | 24.5 | 24.7 |
| Hardness, Shore D | D-2240 | 72 | 75 |
| Ultimate Flexural Strength, psi | D-790 | 8,600 | 9,700 |
| Flexural Modulus, psi | D-790 | 234,000 | 237,000 |
| Ultimate Tensile Strength, psi | D-638 | 5,900 | 5,700 |
| % Elongation | D-638 | 27 | 25 |
| Tg by DMA, °F(°C) | D-4065 | 153 (67) | 192 (89) |
| Deflection Temperature ° F(° C) 66 psi 264 psi | D-648 | 163 (73) 145 (63) | 198 (92) 178 (81) |
| Ultimate Compressive Strength, psi | D-695 | 7,200 | 9,800 |
| Compressive Modulus, psi | D-695 | 240,000 | 275,000 |
| Izod Impact, notched, ft-lb./in | D-256 | 0.6 | 0.7 |
| Coefficient of Thermal Expansion -22° to 86°F, in/in/°F -30° to 30°C, in/in/°C | D-3386 | 60 x 10 ⁻⁶ 108 x 10 ⁻⁶ | 61 x 10 ⁻⁶ 110 x 10 ⁻⁶ |
| Linear Shrinkage, in/in *Mold #1 | D-2566 | 0.005 | - |

¹ Cured 7 days at 77°F (25°C) ² Cured 24 hours at 77°F (25°C) plus 16 hours at 176°F (80°C)

* Radius Depth 0.875" Length 10"

| | | | |
|-------------------|--------------------|--------------------|----------------------|
| PACKAGING: | <u>Unit</u> | | <u>Weight</u> |
| | A Package | System | 13.8 lb. |
| | Pail | Resin (2 required) | 37.5 lb. |
| | Pail | Hardener | 37.5 lb. |

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

STORAGE: Store at 70 to 90°F. This product is moisture-sensitive and packaged under a blanket of dry nitrogen. Maintain factory seal, after use re-blanket with dry nitrogen and tightly reseal.

CONDITIONING:

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This product may crystallize upon storage. If crystallized, vent container and heat to 125 to 145°F until crystals dissolve. Stir well after product has liquefied.

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Stir well before use. This material will separate.

RenCast 6432-1 System

If heating of products in plastic packaging is necessary, heat in a ventilated oven to 145° F maximum. Before heating loosen the container lid slightly to relieve any pressure buildup and place container to be heated into a metal bucket of sufficient volume to contain the product should the container tip over or leak.

HANDLING: Work in a well ventilated area and use clean, dry tools for mixing and applying. For a 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 this material is stored under the recommended storage condition in the original container, it will remain in useable condition for six months from date of shipping.

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

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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.

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

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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