

RenCast[™] 6444/Ren[®] 6444

Ren[®] Polyurethanes Semi-Rigid, Shore 60 ± 5 D Polyurea Elastomer

DESCRIPTION: Ren 6444(Resin) and Ren 6444(Hardener) system is an extremely effective semi-rigid, amber, two-component polyurea elastomer for applications in which wear resistance is critical. RenCast 6444 R/H develops excellent physical properties when cured at room temperature without containing MOCA, TDI or MDA. The low viscosity and good working life allows easy handling and release of entrapped air.

APPLICATIONS:

- Foundry patterns
- Core boxes
- Tough wear-resistant parts
- Nest and holding fixtures for assembly equipment
- Repair of metal tooling
- Can be applied by casting, surface casting, or roto-molding

ADVANTAGES:

- Low mixed viscosity
- Very low moisture sensitivity when mixing and pouring
- Long pot life
- Excellent wear resistance
- Tough, impact resistant

ACCESSORIES: Use Ren[®] PIM Color Pastes for the best coloring results. It may be difficult to obtain very light shades due to the amber color of the hardener component. Other coloring materials may not be compatible with this product and yield undesirable results.

Moldmaking Silicone: RenCast 6473 Si clear silicone rubber

MIX RATIO:

| | | |
|------------|-----------|-------------------|
| By weight: | 100 to 60 | Resin to Hardener |
| By Volume: | 100 to 60 | Resin to Hardener |

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

| Property | Criteria | ASTM Test Method | Test Value |
|-----------------------------|----------------------------|------------------|--------------------------------|
| Color | Resin Hardener Cured | Visual | Light yellow Amber Amber |
| Specific Gravity | Resin Hardener | D-1963 | 1.04 1.06 |
| Viscosity, cP | Mixed | D-2393 | 2,500 |
| Gel time, 4 fl.oz., minutes | | D-2471 | 27 |

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.

| DEMOLD TIME: | Temperature | Time |
|--------------|-------------|---------------|
| Thickness | 77°F (25°C) | 24 hours 1/8" |

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

Curing Instructions: Room temperature polyurethanes will normally set up to a rigid, demoldable state within 24 hours at room temperature. These systems reach their full cure after seven days at room temperature.

An elevated temperature cure will increase the shrinkage compared to a room temperature cure.

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

| Property | ASTM Test Method | Test Values |
|--|------------------|--|
| Density, lb./ft ³ (g/cm ³) | D-792 | 67 (1.08) |
| Cubic inch per pound | D-792 | 25.6 |
| Hardness, Shore D | D-2240 | 60±5 |
| Flexural Strength, at yield, psi | D-790 | 1,800 |
| Flexural Strength, 5% strain, psi | D-790 | 1,500 |
| Flexural Modulus, psi | D-790 | 42,000 |
| Ultimate Tensile Strength, psi | D-638 | 3,400 |
| % Elongation | D-638 | 325 |
| Deflection Temperature, °F (°C) 66 psi 264 psi | D-648 | 154 (68) 122 (50) |
| Compressive Strength, 0.2% offset, psi | D-695 | 1,100 |
| Compressive Modulus, psi | D-695 | 39,000 |
| Izod Impact, notched, ft-lb./in | D-256 | 14 |
| Coefficient of Thermal Expansion -22° to 86°F, in/in/°F -30° to 30°C, in/in/°C | D-3386 | 1.04 x 10 ⁻⁶ 18.7 x 10 ⁻⁶ |
| Tear Strength, ppi | D-624 | 550 |
| Linear Shrinkage, in/in *Mold #1 | D-2566 | 0.001 |
| Wear Test, % | Vantico Method | 0.21 |

* Molds are half round steel, 10 inches long, 0.875 inches deep

| PACKAGING: | <u>Unit</u> | <u>System</u> | <u>Weight</u> |
|-------------------|-------------|-----------------|---------------|
| | A package | <i>System</i> | 11.2 lb. |
| | 5 gallon | <i>Resin</i> | 40 lb. |
| | 5 gallon | <i>Hardener</i> | 24 lb. |
| | Drum | <i>Resin</i> | 460 lb. |
| | Drum | <i>Hardener</i> | 276 lb. |

Please call Customer Service (800) 376 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: *RenCast 6444*

Product may crystallize if exposed to freezing temperatures. If the resin appears thick, lumpy, or gummy, and does not flow smoothly, it may be crystallized. We recommend letting the container sit at room temperature until liquefied.

If absolutely necessary, warm the material at 104°F (40°C) to 122°F (50°C) until the crystallized material melts. **DANGER!** Avoid breathing vapors released from heated material. Harmful if inhaled.

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. It may be necessary for the customer to remelt crystallized resin if cold or freezing temperatures have been encountered during shipping or storage. See Conditioning statement.

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

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DANGER! CORROSIVE – causes eye burns and skin irritation. Harmful if inhaled. May cause allergic skin and respiratory reaction. 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 6444

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.

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

IMPORTANT: The following supersedes Buyer's documents. SELLER MAKES NO REPRESENTATION OR WARRANTY, EXPRESS OR IMPLIED, INCLUDING WARRANTIES AND CONDITIONS OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. No statements herein are to be construed as inducements to infringe any relevant patent. Under no circumstances shall Seller be liable for incidental, consequential, or indirect damages for alleged negligence, breach of warranty, strict liability, tort, or contract arising in connection with the product(s). Buyer's sole remedy and Seller's sole liability for any claims shall be Buyer's purchase price. Data and results are based on controlled or lab work and must be confirmed by Buyer by testing for its intended conditions of use. The product(s) has not been tested for, and is therefore not recommended for, uses for which prolonged contact with mucous membranes, abraded skin, or blood is intended; or for uses for which implantation within the human body is intended.

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