

Advanced Materials**RenCast® 4036 / Ren® 1500 Casting System****HEAT RESISTANT CASTING SYSTEM****DESCRIPTION :**

RenCast® 4036 (Resin) can be used with Ren® 1500 (Hardener) to provide an aluminum-filled casting system intended for continual use to 300 °F (149 °C). Intermittent use to 350 °F (177 °C) is possible. RenCast® 4036 casting system can be cast to 2.5 cm (1") thick in nonconductive molds when used with Ren® 1500 Hardener. Bulk fillers such as Ren® RP 38 and RP 39 aluminum grain or RP 37 aluminum "puffs" can be added to the RP 4036 system to reduce shrinkage and exotherm while reducing the total tool cost.

APPLICATIONS :

- Vacuum form molds
- Compression and injection molds
- Tools used at elevated temperatures up to 300 °F

MIXING INTRUSCTIONS :

Reaction Ratio 100R to 6H by weight
 100R to 10H by volume

Mixing: Stir each component thoroughly before use. Weigh each component accurately (\pm 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 (4 fl. oz.)	D-2471	60 min.
Color Resin	Visual	Gray
Hardener		Amber
Mixed		Gray
Viscosity, mixed	D-2393	20,000 cP

⁽¹⁾ Tested @ 77 °F (25 °C)

TYPICAL CURED PROPERTIES :

Property	ASTM Test Method	Test Values⁽¹⁾
Specific Gravity (cast)	D-792	1.69
Cubic inch per pound	D-792	16.5
Hardness (Shore D)	D-2240	90
Ultimate Compressive Strength (psi)	D-695	
@ 77 °F		30,000
@ 250 °F		21,000
@ 300 °F		18,000
@ 350 °F		13,000
Ultimate Flexural Strength (psi)	D-790	7,500
Flexural Modulus (psi)	D-790	1.0 x 10 ⁶
Ultimate Tensile Strength (psi)	D-638	6,500
Tg per DMA (°F)	D-4065	350
Coefficient of Thermal Expansion (in/in/°F)	D-3386	1.90 x 10 ⁻⁵
Shrinkage (in/in)	ERF Mold #1	0.0044

⁽¹⁾ Cure Schedule – 24 hrs. at RT, 2 hrs. at 150 °F (66 °C) + 2 hrs. at 200 °F (93 °C) + 2 hrs. at 250 °F (121 °C) + 2 hrs. at 300 °F (149 °C), tested @ 77 °F unless otherwise stated.

NOTE : Typical Properties – These physical properties are reported as typical test values obtained by our test laboratory. If assistance is needed establishing product specifications, please consult with our Quality Control Department.

CURING INSTRUCTIONS :

After gelling at room temperature, the following post cure schedule is recommended : two hours at 150 °F (66 °C), plus two hours at 200 °F (93 °C), plus two hours at 250 °F (121 °C), plus two hours at 300 °F (149 °C).

Temperature limitations of the mold or model dictate whether it can be used as the supporting structure during the post cure cycle. If the tool must be pulled from the mold for the post cure, a supporting frame must be provided.

STORAGE/HANDLING INFORMATION :**RenCast[®] 4036 / Ren[®] 1500**

Store at 60 - 100 °F in a dry place. After use 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® 4036

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.

Stir well before use. This material will separate.

SHELF LIFE :

Provided materials are stored under the recommended storage conditions in their original containers, they will remain in useable condition for at least one year from date of shipping.

PACKAGING :

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

Small Preweighed Units : 6 quart resin / 6 preweighed hardener

Pail Units : Pail resin with appropriate hardener

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® 4036

DANGER. Causes severe skin irritation. Causes eye irritation. May cause skin burns and allergic skin reaction. Avoid contact with eye, skin, or clothing. Avoid prolonged or repeated contact with skin. Wash thoroughly after handling.

Ren® 1500

DANGER CORROSIVE – Causes skin and eye burns. Harmful if absorbed through skin. May cause allergic skin and respiratory reactions.

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.

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

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.

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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