



Product Data

RenGel™ 6411/Ren® 6411

URETHANE SURFACE COAT

DESCRIPTION: Ren 6411(Resin)/Ren 6411(Hardener) is a two-component, aluminum filled, brushable urethane surface coat. It is easily mixed and applied, giving excellent surface detail. This system does not contain MDA (methylene dianiline). Cured hardness is Shore D 65 ± 5.

APPLICATIONS: RenGel 6411 is recommended for use in constructing foundry patterns and core boxes or where the need for an impact and wear resistant surface is required.

MIXING INSTRUCTIONS: Reaction Ratio: 70R to 100H by weight
100R to 100H 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 (4 fl.oz.)	D-2471	24 min.
Color Resin Hardener Mixed	Visual	Clear Gray Gray
Work time (200 grams)		20 min.
Tack time (30 mil)		35 min.
Viscosity (after 2 min.)	D-2393	10,500 cP

⁽¹⁾Tested @ 77°F (25°C)

TYPICAL CURED PROPERTIES:

Property	ASTM Test Method	Test Values ⁽¹⁾
Specific gravity	D-792	1.28
Cubic inch per lb.	D-792	21.6
Hardness (Shore D)	D-2240	65 ± 5
Ultimate Tear Strength (lb/in)	D-624	500
Ultimate Tensile Strength (psi)	D-638	1,800
% Elongation to break	D-412	150
Shrinkage (in/in) (cast)	D-2566 Mold #0	0.0005

⁽¹⁾Cure Schedule – 7 days @ 77°F (25°C), tested @ 77°F

Two surface coats are recommended. The first coat should be applied in a thin film to eliminate entrapped air bubbles and ensure surface detail. The second coat can be applied thicker.

Batch size of approximately 200 grams is recommended due to limited work time of 24 minutes.

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

STORAGE/HANDLING INFORMATION:

RenGel 6411 and Ren 6411

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 ratio. Mix together thoroughly and use immediately after mixing. Material temperature should not be below 65°F (18°C) when mixing.

Ren 6411

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 six months from date of shipping.

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

- Kit of Resin/Hardener (total weight 4.6#)

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.

RenGel 6411

DANGER! CORROSIVE. Causes eye burns and skin irritation. Harmful if inhaled. May cause allergic skin and respiratory reactions.

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.

SAFETY/HANDLING (continued)

Ren 6411

DANGER! CORROSIVE. Causes eye burns and skin irritation. Harmful if swallowed, if absorbed through skin, or if inhaled. May cause allergic skin 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.
Nuisance dust may be generated when sanding or sawing cured material.

Please note: This product contains dibutyl phthalate which may cause adverse reproductive effects in laboratory animals. The relevance to humans is not known.

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.

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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