



## Product Data

# RenGel™ 177-148/Ren® 1500

## POLISHABLE, STYRENE-RESISTANT, EPOXY-BASED SURFACE COAT

**DESCRIPTION:** RenGel 177-148(Resin) when used with Ren1500(Hardener) yields a thixotropic, polishable, styrene-resistant and heat-resistant, epoxy-based surface coat. Gloss readings of greater than 90 (Gardner) have been obtained on polished surfaces of this system.

It should be backed with a heat and chemical resistant epoxy laminating system such as RenLam 4005 or RenLam 4014 with either Ren 1500 or Ren 1510.

This system is non-staining and does not contain VCHD or MDA.

**APPLICATIONS:** RenGel 177-148 with Ren 1500 with a suitable epoxy laminate backup can be used in the construction of high gloss molds for styrene-containing parts.

**MIXING INSTRUCTIONS:** Reaction Ratio 100R to 12H by weight with Ren1500

**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 <sup>(1)</sup>
Gel time (4 fl.oz.)	D-2471	45 mins.
Color Mixed Resin Hardener Mixed	Visual	Dark gray Amber Dark gray
Sag Resistance, Mixed		Pass 3/8" Fail 1/2"
Tack time at 77°F		Approximately 2 hours

<sup>(1)</sup>Tested @ 77°F (25°C)

**TYPICAL CURED PROPERTIES:**

Property	ASTM Test Method	Test Values <sup>(1)</sup>
Specific Gravity	D-792	1.39
Cubic inch per lb.	D-792	19.9
Hardness (Shore D)	D-2240	90
Ultimate Compressive Strength (psi)	D-695	24,900
Ultimate Flexural Strength (psi)	D-790	10,500
Flexural Modulus (psi)	D-790	4.9 x 10 <sup>5</sup>
Ultimate Tensile Strength (psi)	D-638	7,100
Tg per DMA	D-648	268°F (131°C)
Coefficient of Thermal Expansion (in/in/°C) 77 to 212°F	D-3386	5.65 x 10 <sup>-5</sup>
Shrinkage (in/in) Cast Mold # 0	D-2566	.004

<sup>(1)</sup>Cure Schedule – 24 hours at 77°F (25°C) + 2 hours at 150°F (66°C) + 2 hours at 200°F(93°C) + 2 hours at 250°F (121°C) + 2 hours at 300°F (149°C).

**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:** After gelling at room temperature for 16 to 24 hours, the following postcure schedule is recommended: Two hours at 150°F (66°C) on the mold if possible, 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 postcure cycle. If the tool must be pulled from the model for the postcure, a supporting frame must be provided.

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.

**POLISHING PROCEDURE: \***

1. Fabricate and postcure tool.
2. Hand wet sand with 400-grit emery cloth until surface is uniform.
3. Wet sand with progressively smaller grit, 600, 800, 1000, 1200, and 2000, until a uniform surface is obtained.
4. Buff with electric or air operated buffer and machining glaze until a uniform surface is obtained at 1000-1400 rpm.
5. Polish with final glaze polishing compound at 1000-1400 rpm.

\* Gloss readings greater than 90 have been obtained using this procedure.

**STORAGE/HANDLING INFORMATION:**

RenGel 177-148 and 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 ratio. Mix together thoroughly and use immediately after mixing. Material temperature should not be below 65°F (18°C) when mixing.

**STORAGE/HANDLING INFORMATION** (continued)

RenGel 177-148

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):

6-Quart units (11# total) with appropriate 6-pint hardener (1.44# total)  
Pail Units = Pail resin (60#) with RP 1500 hardener (gal.) (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 177-148

**DANGER!** Causes severe skin irritation. Causes eye irritation. May cause skin burns and allergic skin reaction.

Avoid contact with eyes, skin, and 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.

**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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