



Preliminary Data Sheet

Ren<sup>®</sup> Epoxy

**REN-WELD<sup>®</sup> 103**  
**RenShape<sup>®</sup> BONDING / REPAIR ADHESIVES**

**DESCRIPTION:** Ren-Weld<sup>®</sup> 103 system is a liquid, brushable epoxy adhesive. Ren-Weld<sup>®</sup> 103 is a low viscosity and easy to mix yet contains flow control agents to prevent excessive run-out.

**APPLICATIONS:** For use as bonding and repair adhesive for RenShape<sup>®</sup> machinable modeling, styling, and tooling boards. It is a good general purpose material for applications not exposed to high-temperatures or needing critical bondline read-through.

**ADVANTAGES:**

- Low viscosity
- Easy to apply
- Excellent adhesion to most tooling materials

**MIXING INSTRUCTIONS:** Reaction Ratio By weight: 100 to 26 Resin to Hardener  
By volume: 100 to 28 Resin to Hardener

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

Property	Criteria	ASTM Test Method	Test Value
Color	Resin Hardener Cured	Visual	Light Blue Clear Amber Light Yellow
Specific Gravity	Resin Hardener	D-1963	1.10 1.04
Viscosity, cP	Resin Hardener Mixed	D-2393	2,500 1,600 2,100
Gel Time, minutes	160g	D-2471	20

**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.

**PROCESSING:** Laminate cut boards together using Ren-Weld® 103. Apply the adhesive to both sides of the glue joint.

Gently clamp the structure and cure overnight at room temperature. Avoid excessive clamping pressure that can induce stress in the finished model.

For a final tool used in applications where it will be exposed to heat or where bondline read-out is unacceptable, consult the Product Selector Guide or your technical sales representative for a suggestion of an adhesive with a more closely-matched thermal coefficient of expansion for your application and temperature range.

**RECOMMENDED CURE SCHEDULES:**

<b>Temperature</b>	<b>Full Cure Time</b>	<b>Handling Strength</b>
77°F (25°C)	48 hours	12 hours

**Curing Instructions:** Although room temperature epoxies will normally set up to machine within 24 hours at room temperature, these systems reach their full cure after seven days at room temperature.

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

<b><u>Unit</u></b>		<b><u>Weight</u></b>
Quart kit	<i>System</i>	2.10 lb.
C package	<i>System</i>	10.08 lb.
6-quart	<i>Resin</i>	9.786 lb.
6-pint	<i>Hardener</i>	2.82 lb.

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

**STORAGE:** Store at 60-100°F in a dry place. After use tightly reseal.

**CONDITIONING:** Ren-Weld® 103 Resin

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.

**HANDLING:** 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.

**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.

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

**Ren-Weld® 103 Resin**

**WARNING!** Causes skin and eye irritation. May cause allergic skin reaction.

Avoid contact with eyes, skin, and clothing.  
Avoid prolonged or repeated contact with skin.  
Wash thoroughly after handling.

**Ren-Weld® 103 Hardener**

**DANGER!** CORROSIVE – Causes eye burns and skin irritation.

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.

**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.

**DISTRIBUTED BY FREEMAN MFG & SUPPLY CO. 800-321-8511**

---