

**Advanced Materials****RenLam®/Ren® 1710 System****EPOXY LAMINATING SYSTEM**

---

**DESCRIPTION :**

RenLam®/Ren® 1710 system contains 100% reactive, liquid resin ingredients to provide the most desirable stability and performance characteristics in room temperature laminates.

RenLam®/Ren® 1710 laminating system allows faster and more uniform cloth wet-out during application. Up to 18 layers can be applied at one time. Its controller viscosity holds the cloth in place and does not drain out of vertical surfaces, providing excellent glass cloth penetration.

---

**ADVANTAGES :**

- Fast demold time (normally eight hours)
- Rigid cure
- Batch-to-batch uniform quality
- Dimensional stability
- Machinable

---

**MIXING INSTRUCTIONS :**

Reaction Ratio            100R to 16H by weight  
                                  100R to 23H by volume

**Mixing** : Stir each component thoroughly before use. Weight 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 :**

<b>Property</b>	<b>ASTM Test Method</b>	<b>Test Values <sup>(1)</sup></b>
Gel time (4 fl. Oz.)	D-2471	22 minutes
Color	Visual	White
Viscosity (mixed)	D-2393	3,500 cP

<sup>(1)</sup> Tested @ 77 °F (25 °C)

---

**TYPICAL CURED PROPERTIES :**

<b>Property</b>	<b>ASTM Test Method</b>	<b>Test Values <sup>(1)</sup></b>
Specific Gravity	D-792	1.71
		1.35 (cast)
Cubic inch per pound	D-792	18.8
Hardness (Shore D)	D-2240	90
Ultimate Compressive Strength (psi)	D-695	23,000
Ultimate Flexural Strength (psi)	D-790	30,000
Flexural Modulus* (psi)	D-790	1.84 x 10 <sup>6</sup>
Ultimate Tensile Strength (psi)	D-638	25,000
Tg per DMA (°F)	D-4065	164
Deflection Temperature (°F) @ 264 psi (cast)	D-648	129
Coefficient of Thermal Expansion (in/in/°F)	D-3386	1.20 x 10 <sup>-5</sup>

<sup>(1)</sup> Properties are in a 10 oz. Laminate rotated 90° and cured for 7 days at 77 °F (25 °C), tested at 77 °F

**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 150 °F for a minimum of six 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 :****RenLam<sup>®</sup>/Ren<sup>®</sup> 1710 Resin and Hardener**

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.

**RenLam<sup>®</sup>/Ren<sup>®</sup> 1710 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.

---

**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 sizes:

Preweighed kits, 6 per kit (14.09# total), pails of resin at 38#  
Hardener pails at 6.08#, resin drums at 500#, and hardener pails at 40#

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.

**RenLam<sup>®</sup>/Ren<sup>®</sup> 1710 Resin**

**WARNING** Causes eye and skin irritation. May cause allergic skin reaction.  
Avoid contact with eyes, skin and clothing. Avoid prolonged or repeated contact with skin. Wash thoroughly after handling.

**RenLam<sup>®</sup>/Ren<sup>®</sup> 1710 Hardener**

**DANGER CORROSIVE** – causes eye burns and skin irritation.

Do not get in eyes. Avoid contact with skin and 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 :**

**Ingestion:** Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Seek immediate medical attention.

**Skin:** Immediately wash with soap and water. Remove contaminated clothing and launder before reuse. Destroy contaminated shoes. Seek immediate medical attention.

**Inhalation:** Remove to fresh air. Seek immediate medical attention.

**Eyes:** Immediately flush eyes with water for at least 15 minutes. Seek immediate medical attention.

---

**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<sup>®</sup> representative for instructions before you start your job.

**Caution**

Avoid any contact with the uncured materials, people with particularly sensitive skin may be affected. Wear eye protection and impervious gloves when handling. Wash thoroughly after handling. Adequate ventilation in the working area is recommended.

---

**IMPORTANT LEGAL NOTICE**

Huntsman Advanced Materials warrants only that its products meet the specifications agreed with the user. Typical properties, where stated, are to be considered as representative of current production and should not be treated as specifications.

The manufacture of materials is the subject of granted patents and patent applications; freedom to operate patented processes is not implied by this publication.

While all the information and recommendations in this publication are, to the best of Huntsman Advanced Material's knowledge, information and belief, accurate at the date of publication, NOTHING HEREIN IS TO BE CONSTRUED AS A WARRANTY, WHETHER EXPRESS OR IMPLIED, INCLUDING BUT WITHOUT LIMITATION, AS TO MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. IN ALL CASES, IT IS THE RESPONSIBILITY OF THE USER TO DETERMINE THE APPLICABILITY OF SUCH INFORMATION AND RECOMMENDATIONS AND THE SUITABILITY OF ANY PRODUCT FOR ITS OWN PARTICULAR PURPOSE.

The behaviour of the products referred to in this publication in manufacturing processes and their suitability in any given end-use environment are dependent upon various conditions such as chemical compatibility, temperature, and other variables, which are not known to Huntsman Advanced Materials. It is the responsibility of the user to evaluate the manufacturing circumstances and the final product under actual end-use requirements and to adequately advise and warn purchasers and users thereof.

Products may be toxic and require special precautions in handling. The user should obtain Safety Data Sheets from Huntsman Advanced Materials containing detailed information on toxicity, together with proper shipping, handling and storage procedures, and should comply with all applicable safety and environmental standards.

Hazards, toxicity and behaviour of the products may differ when used with other materials and are dependent on manufacturing circumstances or other processes. Such hazards, toxicity and behaviour should be determined by the user and made known to handlers, processors and end users.

Except where explicitly agreed otherwise, the sale of products referred to in this publication is subject to the general terms and conditions of sale of Huntsman Advanced Materials LLC or of its affiliated companies including without limitation, Huntsman Advanced Materials (Europe) BVBA, Huntsman Advanced Materials Americas Inc., and Huntsman Advanced Materials (Hong Kong) Ltd.

Huntsman Advanced Materials is an international business unit of Huntsman Corporation. Huntsman Advanced Materials trades through Huntsman affiliated companies in different countries including but not limited to Huntsman Advanced Materials LLC in the USA and Huntsman Advanced Materials (Europe) BVBA in Europe.

RenLam/Ren is a registered trademark of Huntsman Corporation or an affiliate thereof in one or more, but not all, countries.

Copyright © 2007 Huntsman Corporation or an affiliate thereof. All rights reserved.

Main Offices :

**Huntsman Corporation**  
10003 Woodloch Forest Dr.  
The Woodlands  
Texas 77380  
(281) 719-6000

**Huntsman Advanced Technology  
Center**

8600 Gosling Rd.  
The Woodlands  
Texas 77381  
(281) 719-7400  
Website :

[www.huntsman.com/advanced\\_materials](http://www.huntsman.com/advanced_materials)