

Advanced Materials**RenInfusion[®] 8605 Resin
Ren[®] 8605 Hardener****EPOXY RESIN SYSTEM****Description**

RenInfusion[®] 8605 Resin/Ren[®] 8605 Hardener epoxy system is a two-component, low-viscosity epoxy system developed for use in the production of advanced composites using vacuum-assisted resin transfer molding (VARTM), resin transfer molding (RTM), Seemans Composite Resin Injection Molding Process (SCRIMPSM), or other infusion processes. The low-mixed viscosity and wet-out potential of RenInfusion[®] 8605/Ren[®] 8605 enhance processability parameters.

RenInfusion[®] 8605/Ren[®] 8605 has intermediate to high temperature performance. Composites produced with this product can achieve a glass transition of over 300°F (149°C) following a postcure.

Typical Properties

(Tested at 77°F/25°C unless otherwise noted)

Property	Criteria	ASTM Test Method	Test Value
Color		Visual	Transparent
Specific Gravity		D-792	1.2
Viscosity, cP	@ 77°F (25°C) @ 125°F (52°C)	D-2393	5,000 400

NOTE: 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.

Mix Ratio:

By weight: 100 to 35 Resin to Hardener

Mixing Instructions: Measure each component accurately ($\pm 5\%$) into clean containers. Thoroughly mix resin and hardener together (minimum 2 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	Mixed		Transparent
Specific Gravity	Resin Hardener	D-792	1.1 0.94
Viscosity, cP	Resin Hardener Mixed	D-2393	1,200 100 700
Gel Time, minutes	100 gram mass	D-2471	480-580

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.

Recommended Cure Schedule:

24 hours @ 77°F (25°C) plus 2 hours @ 250°F (121°C) plus 3 hours at 350°F (177°C), unless noted otherwise.

Please note that other cure schedules may be used to obtain comparable physical properties. Please contact Huntsman to discuss your application.

NOTE: Material will cure to a hardened, non self supporting, brittle state after 24 hrs. @ R.T. cure. Before demolding, a minimum self-support cure must be applied of 16 Hrs. @ 125°F. After this, the infused tool or part can be pulled off the master model or tool if needed and post-cured with partial or full substructure support. In some cases, depending on infused tool or part configuration and application, no substructure may need to be built in before post-curing.

Neat System**Typical Cured Properties**

Cured 24 hours @ 77°F (25°C) plus 2 hours @ 250°F (121°C) plus 3 hours @ 350°F (177°C). Tested @ 77°F(25°C) unless otherwise noted

Property	ASTM Test Method	Test Value
Specific Gravity	D-792	1.06
Cubic Inch per Pound		26
Hardness (Shore D)	D-2240	89
Ultimate Flexural Strength	D-790	12,200
Ultimate Flexural Modulus	D-790	380,000
Ultimate Tensile Strength, psi	D-638	6,921
Tensile Modulus, psi		366,555
% Elongation		2.5
Tg by DMA, E' onset, dry, °F (°C)	D-4065	307 (153)
Tg by DMA, E' onset, wet, °F (°C)	D-4065	270 (132)

NOTE: All properties are of neat product form (non-composite).

Laminate System**Typical Cured Properties:**

Tested @ 77°F(25°C) unless otherwise noted.

Property	ASTM Test Method	Test ¹ Value	Test ² Value
Hardness (Shore D)	D-2240	89	~
Ultimate Flexural Strength, psi	D-790	34,520	59,425
Flexural Modulus, psi	D-790	0.879 x 10 ⁶	2.26 x 10 ⁶
Ultimate Tensile Strength, psi	D-638	48,133	—
Tensile Modulus, psi		2.50 x 10 ⁶	~
Tg by DMA, E' onset, dry, °F (°C)	D-4065	301 (150)	317 (159)
Ultimate Compressive Strength, psi	D-695	36,575	~
Compressive Modulus, psi		2.87 x 10 ⁶	~
Coefficient of Thermal Expansion in/in/°F -22° to 86°F(-30° to 30°C) in/in/°F, 77° to 212°F(25° to 100°C)	D-3386	7.5 x 10 ⁻⁶	7.2 x 10 ⁻⁶

Lay-Up Process:

Panel Type: Cloth Type: Cloth Rotation: Approximately 3 ft. x 2 ft. flat panel
 Procedure: Laminate Resin Content: 8 layers 1581 glass cloth
 0, 90 degrees
 Vacuum bagged, flat panel
 32.3%

¹ Cured 24 hours at 77°F (25°C) plus 1 hour at 176°F (80°C) plus 8 hours at 284°F (140°C).

² Cured 24 hours at 77°F (25°C) plus 1 hour at 176°F (80°C) plus 2 hours at 250°F (121 °C) plus 2 hours at 300°F (149°C) plus 2 hours at 351 °F (177°C).

Packaging:	Unit		Weight
	5 gallon	<i>Resin</i>	40 lb.
	5 gallon 2	<i>Hardener</i>	31.5 lb.
	x gallon package	<i>Hardener</i>	14 lb.
	Drum Drum	<i>Resin</i>	450 lb.
		<i>Hardener</i>	315 lb.

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

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.

RenInfusion® 8605

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

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

Ren 8605

DANGER! CORROSIVE - Causes eye burns and skin burns. Harmful if inhaled, or if absorbed through skin.

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.

Caution:

Huntsman Advanced Materials Americas Inc. maintains up-to-date Material Safety Data Sheets (MSDS) on all of its products. These sheets contain pertinent information that you may need to protect your employees and customers against any known health or safety hazards associated with our products. Users should review the latest MSDS to determine possible health hazards and appropriate precautions to implement prior to using this material. Copies of the latest MSDS may be requested by calling our customer service group at 888-564-9318 or emailing your request to advanced_materials@huntsman.com.

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