



Product Data

RenInfusion™ 8603/Ren® 8603

EPOXY RESIN SYSTEM

DESCRIPTION: RenInfusion 8603 (Resin)/Ren 8603 (Hardener) 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 8603/Ren 8603 enhance processability parameters.

RenInfusion 8603/Ren 8603 has intermediate temperature performance and maintains excellent toughness. Composites produced with this product can achieve a glass transition of 180°F (82°C) without a postcure.

MIX RATIO: By weight: 100 to 15 Resin to Hardener
By volume: 100 to 19 Resin to Hardener

Mixing Instructions: Measure each component accurately (±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	D-792	1.10
	Hardener		1.00
Viscosity, cP	Resin	D-2393	680
	Hardener		20
	Mixed		240
Gel Time, minutes	4 fl.oz.	D-2471	160
	14 fl.oz.		78

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 minimum @ 77°F (25°C).

NEAT SYSTEM

TYPICAL CURED PROPERTIES: Cured 24 hours minimum @ 77°F (25°C)
Tested @ 77°F(25°C) unless otherwise noted.

Property	ASTM Test Method	Test Value
Hardness (Shore D)	D-2240	82
Cured Density	D-792	1.18 g/cc
Ultimate Flexural Strength, psi	D-790	14,200
Flexural Modulus, psi	D-790	0.4 x 10 ⁶
Ultimate Tensile Strength, psi	D-638	8,500
Tensile Modulus, psi		0.4 x 10 ⁶
Tg by DMA, E' onset, °F (°C)	D-4065	166 (74)
Ultimate Compressive Strength, psi	D-695	16,904
Compressive Modulus, psi		438,158
Linear Shrinkage (ERF #0.Mold)	D-2566	0.0021 inches per inch
Heat Deflection	D-648	78°C at 66 psi
% Elongation	D-638	2.6
Izod Impact, notched, ft.lb./in	D-256	0.459

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

INFUSION PROCESS

TYPICAL CURED PROPERTIES:

Cured 7 days @ 77°F (25°C)
Tested @ 77°F(25°C) unless otherwise noted.

Property	ASTM Test Method	Test ¹ Value	Test ² Value
Hardness (Shore D)	D-2240	90	92
Ultimate Flexural Strength, psi	D-790	48,200	93,700
Flexural Modulus, psi	D-790	3.2 x 10 ⁶	5.8 x 10 ⁶
Ultimate Tensile Strength, psi	D-638	43,450	79,700
Tensile Modulus, psi		3.2 x 10 ⁶	8.2 x 10 ⁶
Tg by DMA, E' onset, °F (°C)	D-4065	180 (82)	180 (82)
Ultimate Compressive Strength, psi	D-695	31,916	55,887
Compressive Modulus, psi		3.7 x 10 ⁶	6.9 x 10 ⁶
% Elongation	D-638	1.5	1.0

LAY-UP PROCESS:

	Glass Laminate¹	Graphite Laminate²
Panel Type:	Approx. 2 ft.x 2 ft. flat panel	Approx.2 ft.x 2 ft. flat panel
Cloth Type:	8 layer, Volan A 7500, 10 oz.	8 layer, 3K, 70P
Cloth Rotation:	0 degrees	0 degrees
Procedure:	VARTM, flat panel	VARTM, flat panel
Laminate Thickness:	0.080"	0.078"
Laminate Resin Content:	36%	--

PACKAGING:

<u>Unit</u>		<u>Weight</u>
5 gallon	<i>Resin</i>	43 lb.
1 gallon	<i>Hardener</i>	6.5 lb.
Drum	<i>Resin</i>	467 lb.
5 gallon	<i>Hardener</i>	35 lb.
Drum	<i>Hardener</i>	350 lb.

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.

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

SAFETY/HANDLING PRECAUTIONS (continued)

Ren 8603

DANGER! CORROSIVE – Causes eye burns and skin 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.

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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