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## Advanced Materials

# Araldite® LY 8604 System / Aradur® 8604 System

## EPOXY RESIN SYSTEM

### DESCRIPTION :

Araldite® LY 8604 System / Aradur® 8604 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 (SCRIMP<sup>SM</sup>), or other infusion processes. The low-mixed viscosity and wet-out potential of Araldite® LY 8604 System / Aradur® 8604 System enhance processability parameters.

Araldite® LY 8604 System / Aradur® 8604 System has enhanced temperature performance after only a room temperature cure and maintains excellent toughness. Composites produced with this product can achieve a glass transition of 176°F (80°C) without a post cure.

### ADVANTAGES :

- Exceptionally long work life
- Excellent high-heat resistance with a room temperature cure
- Superior properties
- Remains transparent after cured

### MIX RATIO :

By weight:	100 to 15	Resin to Hardener
By volume:	100 to 19	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	D-792	1.14
	Hardener		0.90
Viscosity, cP	Resin	D-2393	750
	Hardener		20
	Mixed		370
Gel Time, minutes	4 fl.oz.	D-2471	220
	14 fl.oz.		120

**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.

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**ACCESSORIES :**

The following sealer and release agent have been specifically identified for use with the Araldite® LY 8604 System to achieve maximum results.

*Mold Sealer:* RenShape High Performance Sealer  
*Release Agent:* Frekote® 700-NC

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**PROCESSING :****Mold Preparation:**

- Clean mold with acetone or ethanol solvent.
- Apply two coats of sealer allowing time to dry to touch between each coat.
- Apply five coats of release agent allowing time to dry to touch between each coat.

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**RECOMMENDED CURE SCHEDULE :**

24 hours minimum @ 77°F (25°C).

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**NEAT SYSTEM**

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**TYPICAL CURED PROPERTIES :**

Cured 7 days @ 77°F (25°C)

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

<b>Property</b>	<b>ASTM Test Method</b>	<b>Test* Value</b>
Density, lb./ft <sup>3</sup> (g/cm <sup>3</sup> )	D-792	71 (1.14)
Cubic inch per Pound	D-792	24.3
Hardness (Shore D)	D-2240	81
Ultimate Flexural Strength, psi	D-790	11,411
Flexural Modulus, psi	D-790	0.41 x 10 <sup>6</sup>
Ultimate Tensile Strength, psi	D-638	7,600
Tensile Modulus, psi		0.45 x 10 <sup>6</sup>
Tg by DMA, E' onset, °F (°C)	D-4065	164 (73)
Ultimate Compressive Strength, psi	D-695	17,790
% Elongation	D-638	2.0

\*All properties are of neat product form (non-composite).

**INFUSION PROCESS**

<b>TYPICAL CURED PROPERTIES :</b>			
	Cured 7 days @ 77°F (25°C)		
	Tested @ 77°F(25°C) unless otherwise noted.		
<b>Property</b>	<b>ASTM Test Method</b>	<b>Test<sup>1</sup> Value</b>	<b>Test<sup>2</sup> Value</b>
Hardness (Shore D)	D-2240	92	91
Ultimate Flexural Strength, psi	D-790	47,324	88,467
Flexural Modulus, psi	D-790	2.3 x 10 <sup>6</sup>	5.6 x 10 <sup>6</sup>
Ultimate Tensile Strength, psi	D-638	48,386	73,253
Tensile Modulus, psi		0.89 x 10 <sup>6</sup>	7.9 x 10 <sup>6</sup>
Tg by DMA, E' onset, °F (°C)	D-4065	176 (80)	176 (80)
Ultimate Compressive Strength, psi	D-695	29,031	34,400
Compressive Modulus, psi		3.2 x 10 <sup>6</sup>	--
% Elongation	D-638	--	1.0

**LAY-UP PROCESS :**

	<b>Glass Laminate<sup>1</sup></b>	<b>Graphite Laminate<sup>2</sup></b>
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:	0.085"	0.080"
Laminate Resin Content:	36%	38%

**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>	33.75 lb.
Drum	<i>Hardener</i>	350 lb.

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**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 ration. Mix together thoroughly and use immediately after mixing. Material temperature should not be below 18 °C (65 °F) when mixing.

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**STORAGE :**

Araldite® LY 8604/ Aradur® 8604 System should be stored in a dry place, in the sealed original container, at temperatures between +2°C and +40°C (+35.6°F and +104°F). Under these storage conditions, the shelf life is 2 years. The product should not be exposed to direct sunlight.

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**PRECAUTIONARY STATEMENT :**

Huntsman Advanced Materials Americas LLC 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.

**First Aid!**

Refer to MSDS as mentioned above.

**KEEP OUT OF REACH OF CHILDREN**

**FOR PROFESSIONAL AND INDUSTRIAL USE ONLY**

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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)