

## ARALDITE® CW 8703 / HARDENER HW 8703

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**APPLICATION:** Araldite® CW 8703/Hardener HW 8703 is a superior, overall room temperature curing epoxy system for potting and encapsulation of electrical and electronic components requiring flame retardancy. Targeted applications include ferrites, voltage regulators, relays and toroidal transformers.

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- FEATURES:**
- UL94-VO, **Yellow Carded**
  - High thermal conductivity
  - Semi-rigid
  - Multiple cure schedules possible
  - Very low large mass exotherm
  - Minimal shrinkage during cure
  - Excellent heat resistance
  - Excellent overall electrical performance
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**PROCESSING:** Room temperature cure; commercially available meter mixing equipment.

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**BENEFITS:** Araldite® CW 8703/Hardener HW 8703 offers the end-user a very user-friendly encapsulating system. The combination of processing characteristics allow a manufacturer to produce very large mass castings economically and of high-reproducible quality. The end performance of components protected with this system is maintained under severe environmental conditions. (Ciba's technical support group will assist in determining the maximum service life, under exposure to your environmental condition, of the protected component.)

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(continued)



**TYPICAL PROPERTIES:**

	<u>Property</u>	<u>Test Method</u>	<u>Test Values</u>
<b>Resin</b>	Color/Appearance	Visual	Black
	Viscosity @ 25°C (cP)	ASTM D-2393	13,000 - 17,000
	Specific Gravity	ASTM D-792	1.75 - 1.85
	Flash Point (°C)	--	252
<b>Hardener</b>	Color/Appearance	Visual	Amber
	Viscosity @ 25°C (cP)	ASTM D-2393	900 - 1100
	Specific Gravity	ASTM D-792	0.92 - 0.98
	Flash Point (°C)	--	>98
<b>Mixed</b>	Gel Time (300 gms) (minutes)	ASTM D-2471	45
	Initial Mixed Viscosity (cP)	ASTM D-2393	7500

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**RECOMMENDED**

**CURE SCHEDULES:**

- A. 24 hours @ 25°C
- B. 4 hours @ 60°C

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**SHELF LIFE:**

Provided this material is stored under the recommended storage conditions in their original containers, it will remain in useable condition one year from date of shipping.

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**MIXING INSTRUCTIONS:**

Reaction Ratio            100R to 30H (by weight)  
                                     100R to 55H (by volume)

a) Meter/mix dispensing equipment.

b) Manual mixing - Weigh the desired amount of Part A into mixing container whose weight has been tared. If material has been heated, allow to cool to 25 ± 5°C or 77 ± 41°F before continuing. The pot life of mixed material will be shortened considerably if warmed material is used.

Weigh the desired amount of Part B into mixing container with Part A. Mix thoroughly by means of mechanical mixer or manual stirring. Check for uniform color as a sign of complete mixing.

Vacuum deairing is recommended to remove any entrapped air from the mixing procedure. To deair most products, 1-2 minutes under full vacuum is recommended for each quart of volume of mixed material.

Quickly dispense potting material into cavity or channel to be sealed; be certain not to trap air bubbles as viscosity builds.

**TYPICAL CURED PROPERTIES:**

(Tested after curing 72 hours at 25°C)

<u>Property</u>	<u>Test Method</u>	<u>Test Values</u>
Hardness (Shore D)	ASTM D-2243	80
Linear Shrinkage (%)	ASTM D-792	0.47
Elongation at Break (%)	ASTM D-638	25
Tensile Strength at Break (psi)	ASTM D-638	1800
Tg (°C)	Perkin Elmer Application Case #20	50
Coefficient of Thermal Expansion (in/in/°C)	ASTM E-381	$7.6 \times 10^{-5}$
Water Absorption (% by wt.) (24 hrs. @ 25°C)	ASTM D-570	0.14

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**TYPICAL ELECTRICAL PROPERTIES:**

<u>Property</u>	<u>Test Method</u>	<u>Test Values</u>
Surface Resistivity	ASTM D-257	$1.1 \times 10^{14} \Omega\text{-cm}^2$
Volume Resistivity	ASTM D-257	$3.7 \times 10^{15} \Omega\text{-cm}$
Dielectric Strength (volts/mil)	ASTM D-149	550
Dielectric Constant		
60 Hz.	ASTM D-150	5.37
1 MHz.	ASTM D-150	3.01
Dissipation Factor		
60 Hz.	ASTM D-150	0.010
1 MHz.	ASTM D-150	0.030
Thermal Conductivity (cal-cm/cm <sup>2</sup> -sec-°C)	ASTM D-2214	$7.9 \times 10^{-4}$

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**PACKAGING:** Araldite CW 8703/Hardener HW 8703 is available in a variety of package sizes designed to fit most end-users' needs. These include:

1. Pre-weighed quart kits
2. Pre-weighed gallon kits, and
3. Five-gallon meter-mix ready pails.

This encapsulating system is also available, by special order, in 55-gallon drums.

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

**ENVIRONMENTAL INFORMATION:**

Spills should be contained with absorbent materials and transferred to a closed container for disposal. Unreacted components should be handled carefully. Observe all precautionary statements that appear on the product labels. Users should investigate all applicable waste regulations and follow them closely when disposing of these materials.

**CLEANLINESS AND SAFETY- GENERAL PRECAUTIONS:**

Work only in well-ventilated areas.  
Do not get in eyes, on skin or clothing.  
Wear safety glasses with side splash shields.  
Wear impervious gloves when handling.  
Avoid breathing vapors or mist.  
Keep containers closed when not in use.  
Do not take internally.  
Keep away from heat, sparks and flames.

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**SAFETY/HANDLING PRECAUTIONS:**

Do not use or handle this product until the Material Safety Data Sheet has been read and understood.

Araldite® CW 8703

**WARNING!** CAUSES SKIN AND EYE IRRITATIONS.  
MAY CAUSE ALLERGIC SKIN REACTION.

AVOID CONTACT WITH EYES, SKIN, AND CLOTHING.  
AVOID PROLONGED OR REPEATED CONTACT WITH SKIN.  
WASH THOROUGHLY AFTER HANDLING.

**NOTICE!** CANCER HAZARD BASED ON TESTS WITH  
LABORATORY ANIMALS. OVEREXPOSURE MAY CREATE  
CANCER RISK. CONTAINS CRYSTALLINE SILICA.  
MAY CAUSE CANCER AND DELAYED LUNG INJURY.

Hardener HW 8703

**DANGER!** CORROSIVE - CAUSES SKIN AND EYE BURNS.  
CAUSES RESPIRATORY IRRITATION. MAY CAUSE  
ALLERGIC SKIN REACTION.

DO NOT GET IN EYES, ON SKIN, OR ON CLOTHING.  
AVOID BREATHING VAPOR OR MIST.  
AVOID PROLONGED OR REPEATED CONTACT WITH SKIN.  
KEEP CONTAINER CLOSED.  
USE WITH ADEQUATE VENTILATION.  
WASH THOROUGHLY AFTER HANDLING.

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**FIRST AID:**

In case of contact, flush eyes with plenty of water for 15 minutes and get prompt medical attention; wash skin thoroughly with mild soap and water remove contaminated clothing and wash before reuse. Discard contaminated shoes and other articles made of leather. In case of inhalation, remove person to fresh air. In case of ingestion, do not induce vomiting, dilute with plenty of water and contact physician immediately. Never give anything by mouth to an unconscious person.

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The test data and results set forth herein are based on laboratory work and do not necessarily indicate results that the buyer or user will attain. Full-scale testing and product performance are the responsibility of the buyer and user.

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