

Advanced Materials

Araldite[®] AW 8680 / Hardener HW 8685-1 Adhesive

RAPID, HIGH-STRENGTH, BLACK POLYURETHANE ADHESIVE

DESCRIPTION :

Araldite[®] AW 8680 / Hardener HW 8685-1 polyurethane adhesive is a black, two-part rapid-curing system that is specifically formulated for bonding plastics including polycarbonate, ABS, nylon, and Telene[®] as well as painted metals. It features good environmental stability and impact resistance.

* Telene is a registered trademark of Cymetech LLC

APPLICATIONS :

Araldite[®] AW 8680 / Hardener HW 8685-1 polyurethane adhesive is well suited for bonding :

- Polycarbonate
- ABS
- Telene
- SMC and FRP
- Primed metals
- Nylon and other plastics

ADVANTAGES :

- Tough and resilient
- Convenient mix ratio
- Bonds to a wide variety of materials
- Instant thixotropy after mixing

TYPICAL PROPERTIES :

<u>Property</u>	<u>Test Method</u>	<u>Test Values ⁽¹⁾</u>	
		<u>Resin</u>	<u>Hardener</u>
Color / appearance	Visual	White viscous liquid	Black viscous liquid
Specific Gravity	ASTM D-792	1.10	1.36
Viscosity, cP @ 77 °F (25 °C)	ASTM D-2393	48,000	33,000

⁽¹⁾ Tested @ 77 °F (25 °C)

TYPICAL MIXED PROPERTIES :

<u>Property</u>	<u>Test Method</u>	<u>Test Values ⁽¹⁾</u>
Reaction Ratio (by weight)		80R/100H
Reaction Ratio (by volume)		100R/100H
Pot Life, minutes @ 77 °F (25 °C), 4 fl. oz. mass	ASTM D-2471	7 – 9
Mixed viscosity, cP @ 77 °F (25 °C)	ASTM D-2393	2,500 – 3,000

⁽¹⁾ Tested @ 77 °F (25 °C)

RECOMMENDED CURE SCHEDULES :

<u>Temperature</u>	<u>Handling Strength (150 psi)</u>	<u>Minimum Cure Time (1500 psi)</u>
77 °F (25 °C)	2 hour	9 hours

<u>Cure Cycle</u>	<u>Substrate</u>	<u>Test Temperature</u>	<u>Average Test Values (psi)</u>
24 hours @ 77 °F (25 °C)	Etched Aluminum	77 °F (25 °C)	2016
4 hours @ 140 °F (60 °C)	Etched Aluminum	77 °F (25 °C)	TBD
24 hours @ 77 °F (25 °C)	Primed Aluminum	77 °F (25 °C)	1905
24 hours @ 77 °F (25 °C)	Etched Aluminum	176 °F (80 °C)	TBD

TYPICAL CURED PROPERTIES :**Application of Adhesive**

The resin/hardener mix is applied to the pretreated and dry joint surfaces.

A layer of adhesive 0.002 to 0.004-inches (0.05 to 0.10-mm) thick will normally impart the greatest lap shear strength to a joint.

The joint components should be assembled and clamped as soon as the adhesive has been applied. Even contact throughout suffices to ensure proper cure.

Standard Test Specimens

Unless otherwise stated, the figures given below were all determined by testing standard specimens made up by lap-jointing 4-inch x 1-inch x 0.06-inch (10-cm x 2.5-cm x 1.5-cm) strips of aluminum. The joint area was 0.5 x 1 inch (12.5 mm x 2.5 cm) in each case.

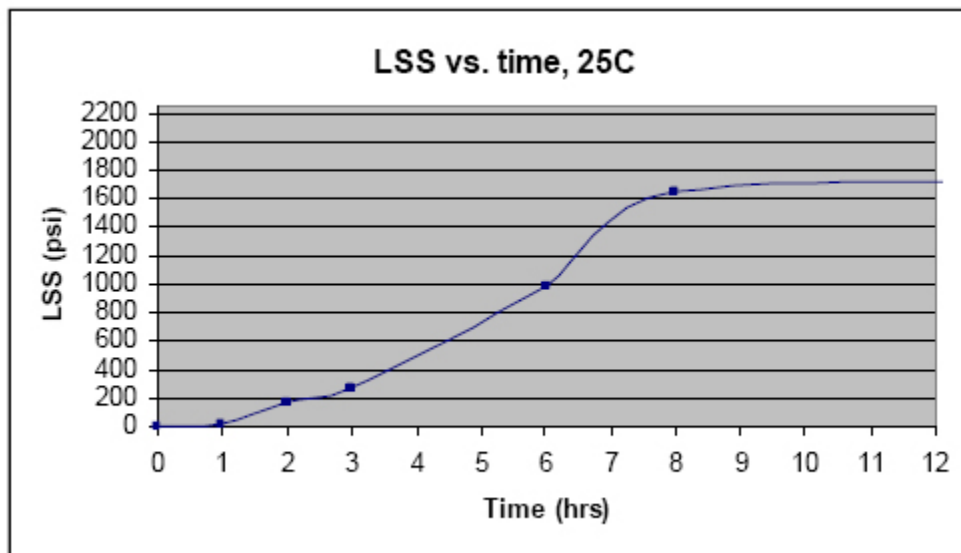
TYPICAL CURED PROPERTIES :

(Not for specification purposes)
Cured for 16 hours @ 104 °F (40 °C)

<u>Property</u>	<u>Test Method</u>	<u>Test Values</u>
Glass Transition Temperature, °F (°C)	TMA (-13 °F to 212 °F/-25 °C to 100 °C @ 9 °F/5 °C/min) DIN 53283	~129 °F (54 °C)

Lap Shear Strength, psi (MPa)
Effect of cure time and temperature

<u>Cure Cycle</u>	<u>Substrate</u>	<u>Test Values</u>
7 days @ 77 °F (25 °C)		TBD
24 hours @ 77 °F (25 °C)	Primed Aluminum	1950
30 min @ 176 °F (80 °C)		TBD
4 hours @ 140 °F (60 °C)		TBD

**NOTE :**

The test data and results set forth herein are based on laboratory work and/or field testing and does 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.

STORAGE AND SHELF LIFE :

Araldite[®] polyurethane adhesive components should be stored in their original, sealed containers at room temperature. Keep containers closed to prevent moisture absorption and contamination. These products are moisture sensitive and packaged under a blanket of dry nitrogen. If a container is opened, re-blanket with dry nitrogen and then tightly reseal.

When stored at temperatures from 59 – 77 °F (15 – 25 °C), Araldite[®] 8683 resin and hardener will remain in useable condition for 6 months from date of shipping from Huntsman.

CAUTION :

Huntsman Advances Materials Americas Inc. maintains up-to-date Material Safety Data Sheet (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 800-367-8793 or emailing your request to adhesives_group@huntsman.com

To protect against any potential health risks presented by our products, the use of proper personal protective equipment (PPE) is recommended. Eye and skin protection is normally advised. Respiratory protection may be needed if mechanical ventilation is not available or is insufficient to remove vapors.

For detailed PPE recommendations and exposure control options consult the product MSDS or a Huntsman EHS representative.

FIRST AID :

Eyes and skin : Flush eyes with water for 15 minutes. Contact a physician if irritation persists. Wash skin thoroughly with soap and water. Remove and wash contaminated clothing before reuse.

Inhalation : Remove subject to fresh air.

Swallowing : Dilute by giving water to drink and contact a physician promptly. Never give anything to drink to an unconscious person.

KEEP OUT OF REACH OF CHILDREN**FOR PROFESSIONAL AND INDUSTRIAL USE ONLY**

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.

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