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Product Data

ARALDITE[®] AW 136 Resin Hardener HY 994 EPOXY LAMINATING ADHESIVE

DESCRIPTION: Araldite AW 136 resin/Hardener HY 994 epoxy adhesive is a two-part laminating system used for fabricating skis, snowboards and other composite parts. A heat cure is recommended for optimal results.

APPLICATIONS:

- Ski and snowboard lamination
- Archery limb lamination
- Honeycomb core facings

ADVANTAGES: Outstanding adhesion to many materials commonly used in the ski industry. Excellent strength under static and dynamic loading. Good environmental resistance to water, ice and tropical conditions.

TYPICAL PROPERTIES:	<u>Typical Properties</u>	<u>Test Values</u>
	Reaction Ratio (by weight)	100R/40H
	Reaction Ration (by volume)	100R/55H
	<u>Araldite AW 136 Resin</u>	
	Color, Visual	Black
	Specific Gravity, g/cc, ASTM D-792	1.39
	Viscosity, cP @ 77°F (25°C), ASTM D-2393	50,000
	<u>Hardener HY 994</u>	
	Color, Visual	Amber
	Specific Gravity, g/cc, ASTM D-792	0.93
	Viscosity, cP @ 77°F (25°C), ASTM D-2393	1700
	<u>Mixed System</u>	
Color, Visual	Black	
Viscosity, cP @ 77°F (25°C), ASTM D-2393	7500	
Gel Time, minutes ASTM D-2471 @ 77°F (25°C), 4 fluid ounces	75	

CURE SCHEDULE:	<u>Temperature</u>	<u>Minimum Cure Time</u>
	140°F (60°C)	60 minutes
	176°F (80°C)	15 minutes
	212°F (100°C)	10 minutes
	248°F (120°C)	5 minutes

APPLICATION OF ADHESIVE: 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 surfaces to ensure proper cure.

STANDARD LAP TEST: Unless otherwise stated, the figures given below were all determined by testing standard specimens made up by lap-joint 4-inch x 1-inch x 0.06-inch (10-cm x 2.5-cm x 1.5-mm) strips of degreased and 100-grit abraded aluminum. The joint area was 0.5 x 1 inch (12.5 mm x 2.5 cm) in each case. Samples were cured at 176°F (80°C) for 30 minutes, unless otherwise noted.

**TYPICAL CURED
PROPERTIES:**

Tested at 77°F (25°C) unless otherwise noted.
Not for specification purposes.

Lap Shear Strength, psi (MPa)
ISO 4578

Test Values

Effect of Test Temperature

Cured at 212°F (100°C) for 15 minutes. Load applied 10 minutes after specimens reach test temperature.

Test Temperature

-76°F (-60°C)	2990 (20.6)
-40°F (-40°C)	2990 (20.6)
-4°F (-20°C)	2990 (20.6)
77°F (25°C)	3410 (23.5)
104°F (40°C)	3840 (26.5)
140°F (60°C)	3980 (27.4)
176°F (80°C)	2840 (19.6)
212°F (100°C)	1280 (8.8)

Tropical Exposure

Exposed to 104°F (40°F) and 92% RH.

Exposure

Standard - As Prepared	3410 (23.5)
10 days	3410 (23.5)
30 days	3130 (21.6)
60 days	3270 (22.5)
90 days	3130 (21.6)

Heat Aging at 176°F (80°C)

Exposure

Standard - As prepared	3410 (23.5)
10 days	3130 (21.6)
30 days	3130 (21.6)
60 days	3130 (21.6)
90 days	2160 (14.9)

Hardness, Shore D,
ASTM D-2240

85

Ultimate Tensile Strength,
psi (MPa), ASTM D-638

6660 (45.9)

Elongation %, ASTM D-638

6

Tg per DMA, °F (°C)

164 (74)

ASTM D-4065, cured 15 minutes at 212°F (100°C)

**NOTE ON 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.

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 800-367-8793 or emailing your request to adhesives_group@huntsman.com.

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

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