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Product Data

ARALDITE[®] 2043 A/B

(XD 4428 Resin/Hardener 4455)

90-SECOND, MULTI-PURPOSE EPOXY ADHESIVE

DESCRIPTION:

Araldite 2043 A/B epoxy adhesive is a multi-purpose, two-component system that cures very quickly at room temperature. It features a 90-second gel time. Araldite 2043 A/B epoxy adhesive is designed for rapid bonding of metals, ceramics, glass, rubbers and rigid plastics. It is a versatile adhesive that can be used by craftsmen and for industrial applications.

APPLICATIONS:

- Metals
- Ceramics
- Glass
- Vulcanized Rubber
- Wood
- Plastics

ADVANTAGES:

- Very rapid curing at room temperature
- Transparent bondline
- Bonds a wide variety of materials
- Produces flexible joints

**TYPICAL
PROPERTIES:**

<u>Property</u>	<u>Test Method</u>	<u>Test Values⁽¹⁾</u>	
		<u>Resin</u>	<u>Hardener</u>
Color/appearance	Visual	Transparent liquid	Pale Yellow liquid
Specific Gravity	ASTM D-792	1.16	1.14
Viscosity (cP) @ 77°F (25°C)	ASTM D-2393	25,000	15,000

**TYPICAL MIXED
PROPERTIES:**

<u>Property</u>	<u>Test Method</u>	<u>Test Values⁽¹⁾</u>
Resin/Hardener Ratio (by weight)	ASTM D-2471	100/100
Resin/Hardener Ratio (by volume)		100/100
Pot Life, seconds @ 77°F (25°C), 2.gram mass		90

CURE SCHEDULES:

<u>Temperature</u>	<u>Cure Time</u>	<u>Strength Development, psi (MPa)</u>
77°F (25°C)	5 minutes	150 (1)
	10 minutes	750 (5.2)
	2 minutes	1500 (10.3)

**TYPICAL CURED
PROPERTIES:****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 ensures 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-mm) strips of aluminum. The joint area was 0.5 inch x 1 inch (12.5 mm x 2.5 cm) in each case.

<u>Property</u>	<u>Test Method</u>	<u>Test Values</u> ⁽¹⁾
Lap Shear Strength, psi (MPa)	ISO 4578	

Effect of Test Temperature

(Load applied 10 minutes after specimens reach test temperature.)

<u>Cure Cycle</u>	<u>Test Temperature.</u>	
16 hours @ 104°F (40°C)	-40°F (-40°C)	2100 (14.5)
	68°F (20°C)	3100 (21.3)
	104°F (40°C)	2100 (14.5)
	140°F (60°C)	700 (4.8)
	176°F (80°C)	500 (3.4)

¹Tested @ 77°F (25°C), unless otherwise noted.

Lap Shear Strength, psi (MPa)

Effect of Immersion

(Cure cycle 16 hours @ 104°F (40°C). Immersion for 30 days in media listed.)

<u>Media</u>	<u>Test Values</u> ⁽¹⁾
Standard - As prepared	3100 (21.3)
Gasoline	3000 (20.6)
Acetic Acid (10%)	2400 (16.5)
Bleach (5%)	3000 (20.6)
Paraffin	3000 (20.6)
Water @ 68°F (20°C)	2600 (17.)
Water @ 194°F (60°C)	300 (2)

Property

Lap Shear Strength, psi (MPa)

Tested on Various Substrates

(Cure cycle 16 hours @ 104°F (40°C). Immersion for 30 days in media listed.)

<u>Material</u>	
Aluminum	3100 (21.3)
Stainless Steel	3700 (25.5)
Galvanized Steel	1800 (12.4)
Copper	3000 (20.6)
Brass	3600 (24.8)
SMC	1300 (8.9)
ABS	700 (4.8)
PVC	400 (2.7)
Polycarbonate	400 (2.7)
Polypropylene	300 (2)

¹Tested @ 77°F (25°C), unless otherwise noted.

Electrical Properties

Thermal Conductivity, W/mK	0.22
Surface Resistivity, ohms	2.4 E+14
Dielectric Strength, volt/mil	600
Volume Resistivity, ohms-cm	2.9 E+15
Dielectric Constant, at 50Hz/1KHz/10KHz	4.3/4.2/4.2
Loss Tangent, % at 50Hz/1KHz/10KHz	1.1/1.8/1.8

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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