

Araldite[®] 5863 A/B Epoxy Adhesive

Product Description

Araldite[®] 5863 A/B Epoxy Adhesive is a two-component paste for bonding electrical insulating materials. It gels at ambient temperatures and has good thermal endurance up to 180°C (356°F). Araldite[®] 5863 A/B is chemical resistant to most common substances including electrical insulating oils. Araldite[®] 5863 A/B epoxy adhesive is suitable for use in applications up to 180°C (356°F) after post curing at temperatures up to 150°C (302°F), in accordance with UL testing.

Applications

- Electrical insulation materials
- Porcelain ceramics
- Nomex[®] honeycomb core
- Plastics
- Vulcanized rubber
- Metal

*Nomex is a registered trademark of Du Pont.

Features

- Non-flowing paste for ease of application
- Gap filling
- Good resistance to most common chemicals including transformer oils
- Bonds to a wide range of substrate materials used in electrical applications
- Cures at room temperature - post cure recommended for optimal properties

Typical Properties*

Property	Araldite [®] 5863 A	Araldite [®] 5863 B	Mixed System	Test Method
Appearance	White/beige paste	Black paste	Black paste	Visual
Density at 25°C, g/cm ³	1.55 - 1.65	1.55 - 1.65	1.55 - 1.65	ASTM D-792
Viscosity at 25°C, cPs	90,000 - 140,000	50,000 - 70,000	80,000 - 140,000	ASTM D-2393
Flash Point, °C (°F)	200 (392)	200 (392)	--	ASTM D-56
Pot Life, 100 g, at 25°C, min	--	--	90	ASTM D2471

*Typical properties are based on Huntsman's test methods. Copies are available upon request.

Processing

The strength and durability of a bonded joint are dependent on proper pretreatment of the surfaces to be bonded. The bonding surfaces should be cleaned with a degreasing agent such as acetone in order to remove all traces of oil, grease and dirt. Alcohol, gasoline or paint thinners are not recommended. The strongest and most durable joints are obtained by either mechanically abrading or chemically etching the degreased surfaces. Abrading should always be followed by a second degreasing step.

Mix Ratio

Product	Parts by weight	Parts by volume
Araldite [®] 5863 A	100	100
Araldite [®] 5863 B	50	50

Resin and hardener should be mixed together at room temperature with thorough stirring.

Recommended Cure Cycles

Temperature, °C (°F)	40 (104)	60 (140)	100 (212)
Cure to lap shear of >1 N/mm ² (145 psi)	50 minutes	15 minutes	5 minutes

Typical Physical Properties

Unless otherwise stated, the data were determined with typical production batches using standard test methods. They are typical values only, and do not constitute a product specification. The values given below were all determined by testing samples cured for 24 hours at 23°C/73°F + 1 hour at 130°C/266°F.

Property	Value	Test Method
Lap shear strength on metal substrates, ¹ psi (MPa) Aluminum Alloy, 1.5 mm thick Steel 37/11, 1.0 mm Stainless Steel, 2.0 mm Galvanized Steel, 0.8 mm Copper, 1.5 mm Brass, 1.5 mm	2400 (16.6) 1450 (10) 1740 (12) 1740 (12) 580 (4) 580 (4)	ISO 4587
Lap shear strength on plastic substrates, ¹ psi (MPa) PVC, 3.0 mm thick Acrylic, 3.0 mm ABS, 4.0 mm SMC, 4.0 mm Polycarbonate, 3.0 mm	300 (2) 362 (2.5) 725 (5.0) 870 (6.0) 362 (2.5)	ISO 4587
Lap shear strength, ² psi (MPa) Standard – as prepared Acetone Gasoline Ethyl Acetate Acetic Acid, 10% Methanol Lubricating Oil Sulfuric Acid, 10% 1,1,1-trichloroethane Water at 20°C (68°F) Water at 90°C (194°F)	2465 (17) 2320 (16) 2175 (15) 2175 (15) 870 (6) 2610 (18) 2320 (16) 1305 (9) 2465 (17) 2465 (17) 2755 (19)	ISO 4587
Lap shear strength, ³ psi (MPa) exposed for As made 30 days 60 days 90 days	2465 (17) 2465 (17) 2465 (17) 2610 (18)	DIN 53283
Glass transition temperature, T _g , °C (°F)	148 - 153 (298 - 307)	ASTM E-381
Hardness, Shore D	87 - 92	
Coefficient of thermal expansion, ppm/°C	25 - 30	ASTM E-381

¹Tested at 23°C (73°F).

²Effects of immersion in various media: immersion for 90 days in media listed. Aluminum alloy substrates. Tested at 23°C (73°F).

³Effects of tropical weathering: (40°C/104°F/92% R.H.) Tested at 23°C (73°F).

Typical Electrical Properties

Property	Value	Test Method
Dielectric constant, 60 Hz at 25°C (77°F) at 50°C (122°F) at 100°C (212°F) at 125°C (257°F)	4.96 5.06 4.26 5.48	ASTM D-150
Dissipation factor, 60 Hz at 25°C (77°F) at 50°C (122°F) at 100°C (212°F) at 125°C (257°F)	0.0066 0.0059 0.0097 0.0319	ASTM D-150
Dielectric strength, at 3mm, V/mil	375	ASTM D-149
Volume resistivity, Ω·cm at 25°C (77°F) at 50°C (122°F) at 100°C (212°F) at 125°C (257°F)	1.2 x10 ¹⁶ 4.2 x10 ¹⁵ 3.2 x10 ¹³ 2.3 x10 ¹²	ASTM D-257

Storage

Araldite® 5863 A/B Epoxy Adhesive 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 **1 year** (from date of manufacture). The product should not be exposed to direct sunlight

Precautionary Statement

Huntsman Advanced Materials Americas LLC maintains up-to-date Safety Data Sheets (SDS) 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 SDS as mentioned above.

KEEP OUT OF REACH OF CHILDREN

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Main Offices:

Huntsman Corporation
10003 Woodloch Forest Dr
The Woodlands, TX 77380
888-564-9318

Huntsman Advanced Technology Center
8600 Gosling Rd.
The Woodlands, TX 77381
281-829-7400