

Araldite® EP 1000 A/B Epoxy Adhesive

Product Description

Araldite® EP 1000 A/B epoxy adhesive is a two-part system for service up to 300°F (150°C). This high-temperature-performing, nano-toughened, structural epoxy adhesive cures at temperatures ranging from ambient to 100°C. It achieves a stable maximum T_g after a room temperature pre-gel, under mild heat cure conditions, requiring no autoclave.

Araldite® EP 1000 A/B exhibits very high lap shear strength and moderate peel strength at room temperature. Greater than 90% of that strength is retained after exposure to aviation fuels and hydraulic fluids, and at least 25-30% is retained at as high as 300°F (150°C).

Araldite® EP 1000 A/B comes in a convenient 2:1 mix ratio that is extrudable when dispensed from a dual-barrel cartridge mixing kit. As a relatively low viscosity, non-flow paste, it is well suited for bonding metals, composites, and many other dissimilar materials.

Features

- Nano-toughened
- High tensile shear strength to 300°F (150°C)
- Non-autoclave curable from ambient to 212°F (100°C)
- Thixotropic paste in 2:1 volume mix packs
- Ambient storage

Typical Properties*

Property	Araldite® EP 1000 A Resin	Araldite® EP 1000 B Hardener	Mixed Adhesive
Appearance	Translucent	Amber	Translucent
Density, g/cm ³	1.2	1.0	1.1
Viscosity at 25°C, cP	35,000	15,000	30,000

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

Processing

For pretreatment, use epoxy primer over anodized Alclad 2024-T3 aluminum.

Mix Ratio

Product	Parts by weight	Parts by volume
Araldite® EP 1000 A Resin	100	2
Araldite® EP 1000 B Hardener	43	1

The open time for a 0.008" film is 90 minutes. For application of the adhesive, mix both components thoroughly for several minutes until a homogeneous mixture is obtained, or dispense from 2:1 dual barrel cartridge and mixing nozzle with 18-24 elements.

All tools should be cleaned with hot water and soap before adhesive residues have had time to cure. The removal of cured residues is a difficult and time-consuming operation. If solvents such as acetone are used for cleaning, operatives should take the appropriate precautions as described in the applicable MSDS.

Processing Data

Parameter	Value
Gel time, 20 g at 25°C, min	40
Typical cure cycles	7-10 days at 77°F (25°C) or 3 hours at 77°F + 3 hours at 160°F (71°C) or 3 hours at 77°F + 1 hour at 212°F (100°C)

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.

Property	Test Method	Value
Tensile lap shear strength ¹ , psi at 77°F (25°C) at 180°F (82°C) at 300°F (150°C)	ASTM D1002	5,200 4,600 500
Tensile lap shear strength ² , psi at -67°F (-55°C) at 77°F (25°C) at 180°F (82°C) at 250°F (121°C)	ASTM D1002	5,100 5,000 3,800 1,300
Tensile lap shear strength ³ , psi at 77°F (25°C) at 300°F (150°C)	ASTM D1002	1,500 700
Peel strength, at 77°F (25°C), pli Bell- (roller-) peel T-peel	ASTM D3167 ASTM D1876	26 17
Glass transition temperature ⁴ , T _g , °F Dry Wet	ASTM D7208	225 165

¹Variation with temperature, anodized and primed Al / Al. Tested on sample after 10 day cure at RT.

²Variation with temperature, anodized and primed Al / Al. Tested on sample after 3 hr gel at RT plus 3 hr heat cure at 160°F (71°C).

³Variation with temperature, abraded & nitrogen treatment PEEK / PEEK. Tested on sample after 3 hr gel at RT plus 3 hr heat cure at 160°F (71°C).

⁴The T_g onset (storage modulus curve of DMA). Tested on sample after 0.5-1.0 hr cure at 176°F (80°C). Wet condition: at 120°F (~49°C) and 100% RH for 30 days.

Storage

Araldite® EP 1000 A Resin and **Araldite® EP 1000 B Hardener** should be stored in a dry place, in the sealed original containers, and may be stored at ambient temperature. Under these storage conditions, the products have a shelf life of **2.5 years** from date of manufacturing. The products 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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