

Advanced Materials**Araldite[®] EP1000 A/B Epoxy Adhesive****Aerospace Adhesives****KEY PROPERTIES**

- 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

DESCRIPTION

Araldite[®] EP1000 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 RT pre-gel, under mild heat cure conditions, requiring no autoclave.

Araldite[®] EP1000 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[®] EP1000 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.

TYPICAL PRODUCT DATA

Property	Araldite [®] EP1000 A resin	Araldite [®] EP1000 B hardener	Mixed adhesive
Color (visual)	Translucent	Amber	Translucent
Specific gravity (g/cc)	1.2	1.0	1.1
Viscosity at 25°C (cp)	35,000	15,000	30,000
Gel time, 20 gm mix at 25°C (mins)	-	-	40

PROCESSING

Pretreatment: Epoxy primer over anodized Alclad 2024-T3 aluminum

Mix ratio	Parts by weight	Parts by volume
Araldite® EP1000 A Resin	100	2
Araldite® EP1000 B Hardener	43	1

Open time (0.008" film): 90 minutes

Application: Mix both components thoroughly for several minutes until a homogeneous mixture is obtained, or dispense from 2:1 dual barrel cartridge with xx element mixing head.

Recommended cure cycle: Seven to 10 days at 77°F (25°C), or 3 hours at 77°F plus 3 hours at 160°F (71°C), or 3 hours at 77°F plus 1 hour at 212°F (100°C).

TYPICAL CURED PROPERTIES

	Test	Units	Results	Test method
After 10-day cure @RT	Tensile lap shear strength (variation with temperature, anodized and primed Al / Al)			ASTM D-1002
	Tested at 77°F (25°C)	psi	5200	"
	Tested at 180°F (82°C)	psi	4600	"
	Tested at 300°F (150°C)	psi	500	"
After 3-hr gel @RT plus 3-hr heat cure @160°F (71°C)	Tensile lap shear strength (variation with temperature, anodized and primed Al / Al)			"
	Tested at -67°F (-55°C)	psi	5100	"
	Tested at 77°F (25°C)	psi	5000	"
	Tested at 180°F (82°C)	psi	3800	"
	Tested at 250°F (121°C)	psi	1300	"
	Tensile lap shear strength (variation with temperature, abraded & nitrogen treatment PEEK / PEEK)			"
	Tested at 77°F (25°C)	psi	1500	"
	Tested at 300°F (149°C)	psi	700	"
	Peel strength, tested at 77°F (25°C)			
	Bell- (roller-) peel	pli	26	ASTM D-3167
T-peel	pli	17	ASTM D-1876	

After 0.5- or 1-hr
cure @176°F (80°C)

**Tg onset (storage modulus curve of
DMA)**

ASTM D-7208

Dry	°F	225
Wet	°F	165

Wet condition: at 120°F (~49°C) and 100% RH for 30 days

STORAGE

Araldite[®] EP1000 Resin and Araldite[®] EP1000 Hardener may be stored for up to 912 days (or 2.5 years) from date of manufacturing at ambient temperature provided the components are stored in unopened containers.

**HANDLING
PRECAUTIONS****Caution!**

Do not mix or otherwise accumulate more than 20-gram quantities at a time. Spread mixed material out into a thin bondline configuration as quickly as possible to avoid development of an exothermic reaction which can overheat the material to emit noxious fumes. Use a hood if possible, or personal respiratory protection. Do not use this product until the MSDSs have been read and understood. 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.

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