

EPIBOND® 115 A/B High Temperature Epoxy Structural Adhesive

Product Description

EPIBOND® 115 A/B is an extrudable, two-component, heat curing epoxy structural adhesive designed for service temperatures up to 300°F (149°C). This product is suitable for bonding a wide variety of materials such as metals, composites, and many other similar substrates. The combination of high strength and high Tg performance makes this adhesive well suited for aerospace and other demanding applications. EPIBOND® 115 A/B contains 5 mil (125 micron) spacer beads to help provide a uniform bond line required in high stress areas.

Features

- Service temperature up to 300°F (149°C)
- High tensile shear strength on metal and composites substrates
- High bond-line thickness tolerance
- Good chemical and environmental resistance
- Gap-filling thixotropic paste
- 2:1 mix ratio by volume

Typical Properties*

Property	EPIBOND® 115 A Resin	EPIBOND® 115 B Hardener	Mixed Adhesive	Test Method
Appearance	Off-white	Amber	Off-white	Visual
Density g/cm ³	1.13	1.0	1.12	ASTM D1875
Viscosity at 77°F (25°C), cP	Semi-Paste	Paste	Thixotropic Paste	ASTM D2196

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

Processing

Pretreatment

Substrates to be bonded should be properly surface treated and be free from contaminants.

Mixing

Mix both components thoroughly for several minutes until a homogeneous mixture is obtained or dispense from a 400 mL. For 400 mL cartridges, use a Static mixer 10.13mm diameter x 18 element spiral mixing nozzle (INFINITY MIX MCH-10-18T) or equivalent.

Under normal temperature conditions according to the standard mix ratio this material has a working time of approximately 120 - 180 minutes.

Mix Ratio

Product	Parts by weight	Parts by volume
EPIBOND® 115 A Resin	100	2
EPIBOND® 115 B Hardener	44	1

Application

The mixed adhesive should be spread with a spatula to the suitably pretreated dry joint surfaces. A layer of adhesive 0.004 to 0.012 inches (0.1 to 0.3 mm) thick will normally provide the maximum lap shear strength. This adhesive, however, has been designed to be effective in layers up to 0.12 in. (3 mm). Components to be bonded should be assembled and clamped as soon as the adhesive has been applied. Even contact pressure throughout the joint area during cure will ensure optimum performance.

Processing Data

Parameter	Value
Gel time, 100 g, @ 77°F, >	180
Typical Cure Cycle	1 h at 150-158 °F + 3 - 5 h at 200-275°F or 1 h at 210-220 °F +1 h at 250-260 °F

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 following Lapshear properties were determined on a substrate of phosphoric acid anodized and primed aluminum. The cure schedule was 1 hour at 150°F (65°C) plus 5 hours at 200°F (93°C).

Property	Test Method	Value
Tensile lap shear strength, psi at 77°F (25°C) at 200°F (93°C) at 350°F (177°C) at -85°F (-65°C)	ASTM D1002	4,740 3,975 924 4,520
T-Peel strength, pli (N/mm)	ASTM D1867	10 (1.75)
Tg by DMA Dry Tg as cured Wet Tg after 42-day at 145°F at 85% RH	ASTM D-7028	°F (°C) 295 (128) °F (°C) 253 (123)
Tensile Strength at 77°F (25°C), psi	ASTM D-638	5,000
Flexural Strength at 77°F (25°C), psi	ASTM D-790	11,000
Compressive Strength at 77°F (25°C), psi	ASTM D-695	13,000

Handling strength

Measured by lap shear strength on composite substates at room temperature psi. The cure schedule was 1 hour at 150°F (65°C) plus 5 hours at 200°F (93°C).

Time to handling strength	Value (psi)
16 hours at RT	730
1 hour at 155°F	3725
1 hour at 155°F + 5 hours at 200°F	4740

Bondline Thickness Control

Measured by lap shear strength on composite substates at room temperature psi. The cure schedule was 1 hour at 150°F (65°C) plus 5 hours at 200°F (93°C).

Bond thickness (inches)	Value (psi)
0.010	4,740
0.020	4,000
0.040	3,000
0.080	2,000

Storage

EPIBOND® 115 A/B should be stored in a dry place in its original sealed container at a temperature between **2°C and 40°C (36°F and 104°F)**. Tightly reseal containers after each use. Under these storage conditions, the product has a shelf-life of **12 months** (from date of manufacture). The components should not be exposed to direct sunlight.

Precautionary Statement

Huntsman Advanced Materials Americas LLC maintains up-to-date Safety Data Sheets (SDS) on all 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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