

# Epocast<sup>®</sup> 1648 A/B

## Low Density Epoxy Adhesive



### Product Description

Epocast<sup>®</sup> 1648 A/B is a two component, low density, flame retardant syntactic adhesive which can be easily extruded through a 1/8 in. (3mm) nozzle orifice and is non-flowing after application. Epocast<sup>®</sup> 1648 A/B Adhesive can be applied using mix metering dispensing equipment, Semco<sup>™</sup> cartridge, or hand mixing. Epocast<sup>®</sup> 1648 A/B Adhesive sets quickly at room temperature and is qualified to BMS 5-28, Type 18, Class 1. Epocast<sup>®</sup> 1648 A/B Adhesive does not contain any SVHC (substance of very high concern) as defined under REACH.

### Applications

Epocast<sup>®</sup> 1648 A/B low density epoxy adhesive is suitable for aerospace application, requiring high strength and low density, such as fastener potting, edge filling / sealing, ditch pot fold, tab / slot joining, and honeycomb core reinforcing.

### Features

- Meets FST requirements
- Quick setting
- High mechanical performance
- Can be dispensed by meter mix machines
- Easy to apply and clean
- Qualified to BMS5-28 Type 18 Class 1
- No SVHC as defined under REACH

### Typical Properties as Supplied

Property	1648 A	1648 B	1648 A/B	Test Method
Appearance	Off white paste	Amber paste	Off white paste	Visual
Density, g/cm <sup>3</sup>	0.59 - 0.64	1.05 - 1.15	0.65 - 0.70	ASTM D1875
Viscosity at 77°F (25°C), cP	Paste	Soft Paste	Paste	ASTM D2196
Gel time, 60g at 77°F (25°C), min	--	--	18	ASTM D2471
Extrusion rate at 10 min, g/min	--	--	180 - 220	OEM
Slump, in (mm)	--	--	≤ 0.3 (7.6)	ASTM D2202

### Processing

#### Mix ratio

Product	Parts by weight
Epocast® 1648 A	100
Epocast® 1648 B	20

#### Curing

Parameter	Value
Gel time, 60g at 77°F (25°C), min	18
Typical cure cycles	3 days at 77°F (25°C), or
	Gel at 77°F (25°C) + minimum of 5 hours at 125°F (52°C)

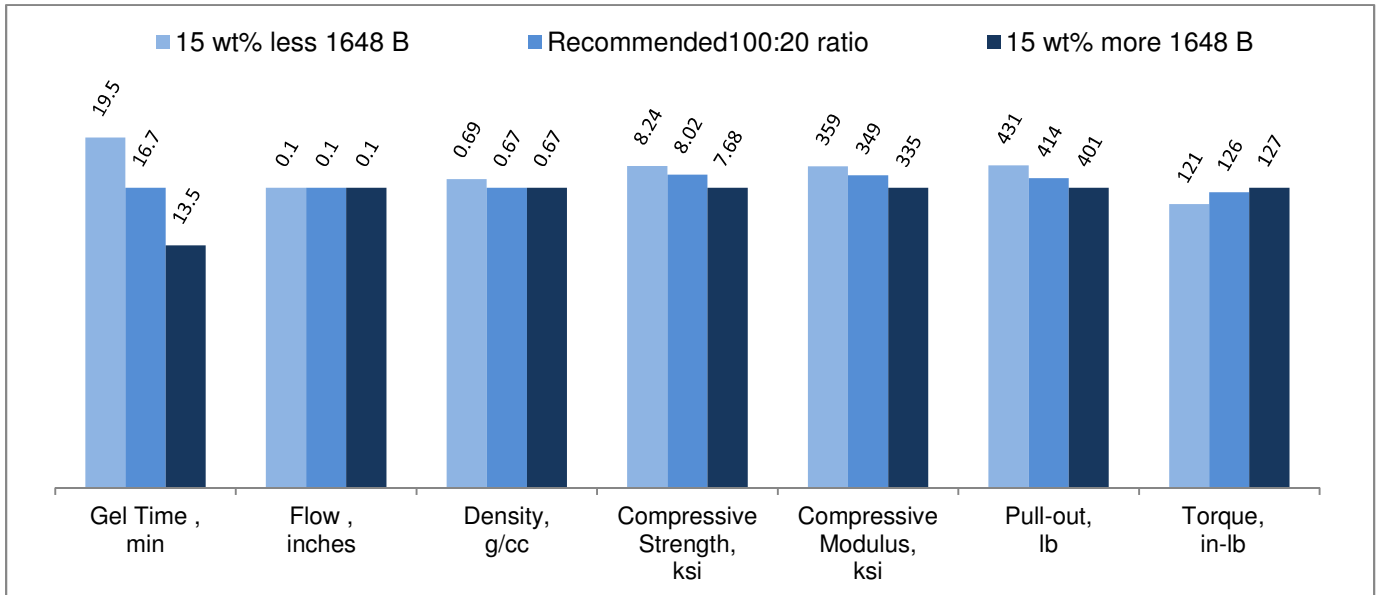
### Typical Physical Properties After Cure

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	
Density, g/cm <sup>3</sup> (lb/ft <sup>3</sup> )	ASTM D1622	0.68 ± 0.02 (42.5 ± 1.2)	
Compressive strength, psi (MPa) at 73°F (23°C) after hot/wet exposure <sup>†</sup> , at 73°F (23°C)	ASTM D695	7,250 ± 750 (50 ± 5.2) 6,750 ± 80 (46.5 ± 0.6)	
Compressive modulus, ksi (GPa) at 73°F (23°C) after hot/wet exposure <sup>†</sup> , at 73°F (23°C)	ASTM D695	350 ± 50 (2.4 ± 0.3) 290 ± 10 (2.0 ± 0.1)	
Tensile lap shear strength, psi (MPa) at 73°F (23°C), Al-Al after hot/wet exposure <sup>†</sup> , at 73°F (23°C), Al-Al	ASTM D1002	2,050 ± 150 (14.1 ± 1.0) 1900 ± 60 (13.1 ± 0.4)	
Insert pull-out strength, lb (kN)	OEM	400 ± 50 (1.8 ± 0.2)	
Insert torque strength, in·lb (Nm)	OEM	120 ± 20 (13.6 ± 2.3)	
Self-extinguishing time (12s vertical), second	FAR 25.853	< 5	
Smoke density at 4 minutes	FAR 25 Appendix F V(b)	160	
Decomposition byproducts	ABD0031 / AITM 3-0005	HCN: < 5	PASS
		CO: 200	PASS
		NO <sub>x</sub> : 60	PASS
		SO <sub>2</sub> : 8	PASS
		HF: < 5	PASS
		HCl: < 5	PASS

<sup>†</sup> Hot / Wet exposure: 7 days at 25°C (77°F) followed by 14 days at 71°C (160°F) / 95% relative humidity

### Mix Ratio Tolerance\*



\* While the above chart shows that small mix ratio deviations occurring during the processing of Epocast® 1648 A/B will have a minimal impact on the system performance properties, the system will only perform optimally when used at the recommended mix ratio.

### Effect of Mix Ratio on Flammability

	15 wt% less 1648B	Recommended 100:20 ratio	15 wt% more 1648B
Extinguish Time, sec	Avg: < 1.0	Avg: < 1.0	Avg: < 1.0
Burn Length, inch (mm)	0.2 (5.1)	0.3 (7.6)	0.3 (7.6)
Drip Extinguishing Time, sec	No drip	No drip	No drip

### Storage

Epocast® 1648 A/B 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). The product should not be exposed to direct sunlight. Under these storage conditions, and when supplied under Huntsman standard certification, this product has a shelf life of 6 months from the date of shipment from Huntsman or ASN (Authorized Service Network) distributor.

Material temperatures should be above 18°C (65°F) when mixing. Unused mixed material should be stored in tightly sealed containers.

### 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**

**FOR PROFESSIONAL AND INDUSTRIAL USE ONLY**

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