

**Advanced Materials****Epibond® 1559-1 A/B and C/D Epoxy Adhesives**

- **UL94 V-0 Flame Retardant**
- **Rapid cure**
- **Available in both off-white and gray**
- **Available in 50mL and 200mL cartridges**

**DESCRIPTION**

Epibond® 1559-1A/B and Epibond® 1559-1C/D are two-part, flame retardant epoxy adhesive pastes with good peel strength properties. These adhesives were designed with extremely quick set times, even at colder temperatures, making them ideal for fast repairs. At 77°F, handling strength of 50 psi is developed in as little as ten minutes, and after only one hour at room temperature a lap shear strength of 1200 psi is achieved. Epibond® 1559-1 epoxy adhesives bond well to metals, composite laminates, most thermoplastics, and dissimilar materials. Parts A and B are supplied in contrasting colors so that complete mixing is indicated by a uniform gray color. Parts C and D are both off-white for aircraft interior applications. Epibond® 1559-1 epoxy adhesives can be used to fabricate or repair aircraft interior parts, which fulfill the FAR 25.853, meets requirements of UL 94 V-0 and O.S.U. requirements when used in conjunction with other low combustible composite components.

**TYPICAL PROPERTIES**

Property	Test Method	1559-1 Resin	1559-1 Hardener	Mixed System
Color	Visual	A - Lt. Blue C - Off White	B - Gray D - Off White	Lt. Gray Off White
Density, g/cc	ASTM D792	1.25	1.25	1.25
Viscosity at 77°F (25°C), cP	ASTM D2196	60,000	70,000	65,000
Gel Time, 50g at 77°F (25°C), min	ASTM D2471	--	--	4-10

**MIX RATIO**

If crystallized, place containers in 120°F (49°C) oven for 15-30 minutes. Allow material to cool to room temperature before mixing. To mix by hand, add one part by weight or volume of Epibond® 1559-1 A or C resin, add one part by weight or volume of Epibond® 1559-1 B or D hardener, and mix thoroughly for 1 minute to achieve a uniform color. Due to the very fast setting properties of Epibond® 1559-1 adhesives, hand mixing of the components should be avoided. Epibond 1559-1 is available in 50mL and 200mL twin cartridges. For best results, Epibond® 1559-1 adhesives should be dispensed using manual or pneumatic dispensing equipment through a suitable mixing nozzle as shown below:

Cartridge Size	Width/Diameter, in	Number of Elements	Nordson EFD Part Number	Sulzer Mixpac Part Number
50mL	0.20	20	7701830	N/A
	0.25	20	7701488	N/A
200mL	0.34	24	7701385	MCQ 08-24T
	0.37	24	7700983	MCH 10-24T

For other mixing and application recommendations, please consult your local Huntsman Advanced Materials representative or one of our distributors.

**CURE SCHEDULE** (Epibond® 1559-1 A/B and C/D)

24 hours at 77°F (25°C) or 1 hour at 77°F (25°C) followed by 30 minutes at 158°F (70°C).

**TYPICAL CURED PROPERTIES** (Not for specification purposes)

Test	Test Method	Test Temperature	Result
Tensile lap shear, Al-Al, psi (MPa)	ASTM D1002		
Curing conditions:			
15 minutes at 77°F (25°C)		77°F (25°C)	260 (1.8)
1 hour at 77°F (25°C)		77°F (25°C)	1200 (8.2)
24 hours at 77°F (25°C)		77°F (25°C)	2,700 (18.6)
1 hr at 77°F (25°C) + 30 min at 158°F (70°C)		77°F (25°C)	3,800 (26.2)
		180°F (82°C)	400 (2.8)
7 days at 160°F (57°C)		75°F (23°C)	3,800 (26.2)
7 days at 160°F (57°C) / 95% RH		75°F (23°C)	3,500 (24.1)
T-Peel, Al-Al, lb <sub>f</sub> /in	ASTM D1876	77°F (25°C)	8.1
Glass transition temperature °F (°C)	ASTM D3418	--	131 (55.3)
Flammability, 60 seconds ignition, vertical	FAR 25.853		
Self-extinguish time, seconds		--	1
Burn length, inches			4

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**STORAGE**

Epibond® 1559-1 epoxy adhesives should be stored in a dry place, in its sealed original container, at temperatures between +2°C to +40°C (+35.6°F and 104°F). Under these storage conditions the shelf life is 1 year from date of shipment. The product should not be exposed to direct sunlight. Material temperatures should be above 65°F (18°C) when mixing. After use, tightly reseal containers.

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**PRECAUTIONARY STATEMENT**

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

**KEEP OUT OF REACH OF CHILDREN.**

**FOR PROFESSIONAL AND INDUSTRIAL USE ONLY.**

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