



LOCTITE EF 562SFR AERO

Foaming Core Splice Adhesive

(KNOWN AS Hysol MA 562SFR)

INTRODUCTION

LOCTITE EF 562SFR AERO is an expanding foam adhesive, which is supplied as a film for core splicing and closeout of honeycomb panels. LOCTITE EF 562SFR AERO offers the advantages of a fire retardant structural adhesive, which may be cured at 250°F (121°C) or 350°F (177°C).

FEATURES

- Fire retardant
- Non-Asbestos
- Dual Cure: 250°F (121°C) or 350°F (177°C)

USES

- Sealing, splicing or reinforcing honeycomb materials.

Typical Technical Data	LOCTITE EF 562SFR AERO
Type:	Unsupported Expanding Epoxy Film Adhesive
Thickness:	0.050" (0.127 cm)
Form:	1' x 2' sheets, rolls
Weight:	0.25 - 0.35 lbs/SF (0.050"/0.127cm thickness)
Adhesive Tack:	Moderate
Color:	Yellow
Material Sag:	Less than 0.1"/.254cm
Volatiles:	<1%
Expansion:	200-300% (ASTM E 990: EXP % = A/B x 100)
Cured Density:	25-35 lbs/cu. ft. (0.40-0.56g/cc)
Shelf Life:	12 months @ 0°F (-18°C)
Out Time:	10 days @ 77°F (25°C)

Application Method

Remove adhesive material from cold storage at least 12 hours prior to use to allow stabilization at room temperature. Keep the material wrapped to prevent moisture from condensing on the adhesive. If details are cut and replaced in cold storage, shorter stabilization times may be used.

Be sure parts to be bonded have been thoroughly cleaned and dried before bonding.

Cut adhesive to part size, remove the paper separator and apply to edge of honeycomb core. Remove the other paper and join to the other section of core or edge member. Assemble panel using desired adhesive. Panel is now ready for cure in a press, vacuum bag in an oven, or an autoclave. Follow recommended cure cycles.





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Curing Conditions

60 minutes @ 250°F (121°C) or 60 minutes @ 350°F (177°C), each with a 2-8°F (1-4°C) per minute heat up rate.

Clean-up

Uncured adhesive may be removed effectively with ketone solvents in well ventilated areas. Avoid contaminating uncured parts. Consult solvent container label/MSDS for proper safety and handling procedures.

Storage

The shelf life of LOCTITE EF 562SFR AERO is 6 months at 0°F (-18°C). This product has an out time of 10 days @ 77°F (25°C).

Physical Performance Properties

LOCTITE EF 562SFR 50M AERO

Adhesive Cure: 65 min. at 250°F(121°C) or 350°F(177°C)

<u>Test Property</u>	<u>Cure Temp.</u>	<u>Result</u>		
Areal Weight, lbs/ft ² (kg/m ²) ▪ 1 ply, ▪ 5.634"x5.634" (143.1mm ²)	-	0.32 (1.56)		
Volatile Content per ASTM E990 ▪ 1 ply, 1.5" (3.8cm) dia.	250°F (121°C)	0.49%		
	350°F (177°C)	0.57%		
Slump per ASTM E990, inches (cm) ▪ 2 plies, 1"x2" (2.5cm x 5.1cm)	250°F (121°C)	0.092 (0.23)		
Flammability per FAR 25.853a (1 ply) ▪ Burn Length, inches (cm) ▪ Self Extinguishing, seconds ▪ Drip Time to Extinguish, seconds	<u>Cured at</u> <u>250°F (121°C)</u>	<u>Cured at</u> <u>350°F (177°C)</u>		
	3.7 (9.4)	3.4 (8.6)		
	<1	<1		
	0	0		
Expansion per ASTM E990, % ▪ 1 ply, 2"x2" (5.1cm ²)	<u>Cure Temp.</u>	<u>1°F/min.</u> <u>(0.6°C/min.)</u>	<u>4.5°F/min.</u> <u>(2.5°C/min.)</u>	<u>8°F/min.</u> <u>(4.4°C/min.)</u>
	250°F (121°C) 350°F (177°C)	116 120	135 150	153 193



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Bond Strength Performance

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Flexural Shear Strength

- Face sheets: 2024T3 bare aluminum 10"x14"x0.063" (254mm x 356mm x 1.6mm) thick
- Etch: Phosphoric Acid Anodized per ASTM D 3933
- Honeycomb Core: 5052, 8.1 lb/ft³ (130 kg/m³), 1/8" (3.18 mm) cell size, 1/2" (12.7 mm) thick, 20N, 14" (356 mm) length x 10" (254 mm) width with the ribbon direction in the 10" (254 mm) width direction
- Two plies of LOCTITE EF 562SFR 50mil AERO was used

Tube Shear Strength

- Tube shear specimens were fabricated from FPL etched 5052 bare aluminum.
- Tube shear data is based on 0.050" (0.127 cm) thick material
- Tube dimensions are as follows:
 - Outer tube: 9" x 1.0" x 0.049" (22.86cm x 2.54cm x .12446cm)
 - Inner tube: 9" x 0.5" x 0.49" (22.86cm x 1.27cm x .12446cm)
 - Assembled tubes are loaded with 44-45 grams of LOCTITE EF 562SFR 50mil AERO

Test	Cure Temperature °F (°C)	Test Temperature °F (°C)	Results	
			psi	MPa
Flexural Shear Strength	250 (121)	77(25)	934	6.4
		250 (121)	473	3.3
	350 (177)	77(25)	824	5.7
		350 (177)	365	2.5
Tube Shear Strength	250 (121)	77(25)	862	5.9
		250 (121)	995	6.7
	350 (177)	77(25)	805	5.6
		350 (177)	214	1.5

Handling Precautions

Do not handle or use until the Material Safety Data Sheet has been read and understood. For industrial use only.

DISPOSAL INFORMATION

Dispose of spent remover and paint residue per local, state and regional regulations. Refer to HENKEL TECHNOLOGIES MATERIAL SAFETY DATA SHEET for additional disposal information.



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PRECAUTIONARY INFORMATION

General:

As with most epoxy based systems, use this product with adequate ventilation. Do not get in eyes or on skin. Avoid breathing the vapors. Wash thoroughly with soap and water after handling.

Before using this product refer to container label and HENKEL TECHNOLOGIES MATERIAL SAFETY DATA SHEET for additional precautionary, handling and first aid information.

Note

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