

LOCTITE EA 9323 AERO

Epoxy Paste Adhesive

(KNOWN AS Hysol EA 9323)

INTRODUCTION

LOCTITE EA 9323 AERO is a two-component paste adhesive, which is low in viscosity, possesses some toughness and maintains high temperature strength. Its room temperature cure capability makes it ideal for repair of metal and composite structure, including laminating and injection. LOCTITE EA 9323 AERO has no metallic fillers.

FEATURES

- Two Component System
- High Temperature Strength
- Low Viscosity
- Unfilled
- Toughness

Uncured Properties

	<u>Part A</u>	<u>Part B</u>	<u>Mixed</u>
Color	Amber	Amber	Amber
Viscosity, 77°F	1700 Poise	20 Poise	
Brookfield, HBT	Spdl 5 @ 10 rpm	Spdl 1 @ 20 rpm	
Viscosity, 25°C	170 Pa·S	2.0 Pa·S	
Brookfield, HBT	Spdl 5 @ 1.0 rad/s	Spdl 2 @ 2.1 rad/s	
Density, g/ml	1.17	0.96	
Shelf Life			
@ <40°F/4°C	1 year	1 year	
@ <77°F/25°C	3 mos	1 year	
@ <90°F/32°C	1 mo	1 year	

This material will normally be shipped at ambient conditions, which will not alter our standard warranty, provided that the material is placed into its intended storage upon receipt. Premium shipment is available upon request.

Handling

Mixing - This product requires mixing two components together just prior to application to the parts to be bonded. Complete mixing is necessary. The temperature of the separate components prior to mixing is not critical, but should be close to room temperature (77°F/25°C).

<u>Mix Ratio</u>	<u>Part A</u>	<u>Part B</u>
By Weight	100	45

Note: Volume measurement is not recommended for structural applications unless special precautions are taken to assure proper ratios.



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Pot Life (450 gram mass) 30 minutes @ 77°F/25°C
Method - ASTM D 2471 in water bath.

Application

Mixing - Combine Part A and Part B in the correct ratio and mix thoroughly. THIS IS IMPORTANT! Heat buildup during or after mixing is normal. Do not mix quantities greater than 450 grams as dangerous heat buildup can occur causing uncontrolled decomposition of the mixed adhesive. TOXIC FUMES CAN OCCUR, RESULTING IN PERSONAL INJURY. Mixing smaller quantities will minimize the heat buildup.

Applying - Bonding surfaces should be clean, dry and properly prepared. For optimum surface preparation consult the LOCTITE Surface Preparation Guide. The bonded parts should be held in contact until the adhesive is set. Handling strength for this adhesive will occur in 24 hours (>77°F/25°C), after which the support tooling or pressure used during cure may be removed. Since full bond strength has not yet been attained, load application should be small at this time.

Curing - LOCTITE EA 9323 AERO may be cured for 5 to 7 days @ >77°F/25°C to achieve normal performance. Accelerated cures up to 200°F/93°C (for small masses only) are used as an alternative. For example, 1 hour @ 180°F/82°C will give complete cure.

Cleanup - It is important to remove excess adhesive from the work area and application equipment before it hardens. Denatured alcohol and many common industrial solvents are suitable for removing uncured adhesive. Consult with your supplier's information pertaining to the safe and proper use of solvents.

Bond Strength Performance

Tensile Lap Shear Strength

Tensile lap shear strength tested per ASTM D1002 after curing for 5 days @ 77°F/25°C. Adherends are 2024-T3 AlClad aluminum treated with phosphoric acid anodized per ASTM D3933.

<u>Test Temperature, °F/°C</u>	Typical Results	
	<u>psi</u>	<u>MPa</u>
-67/-55	2,800	19.3
77/ 25	4,200	28.9
180/82	1,200	8.3
250/121	1,100	7.6
350/177	600	4.1

After Exposure to*:	Typical Results	
	<u>psi</u>	<u>MPa</u>
Control	4,200	28.9
120°F/49°C - 100% RH - 30 days	2,800	19.3
Salt Spray - 105°F/41°C - 30 days	3,150	21.7

*Test Temperature, 77°F/25°C



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Peel Strength

Floating Roller (Bell) Peel Strength tested per ASTM D3167 after curing for 5 days @ 77°F/25°C. Adherends are 2024-T3 bare aluminum treated with FPL etch per ASTM D2651.

<u>Test Temperature, °F/°C</u>	<u>Typical Results</u>	
	<u>lb/in</u>	<u>N/25mm</u>
67/-55	5	22
77/ 25	4	18
180/82	22	98

Service Temperature

Service temperature is defined as that temperature at which this adhesive still retains 1000 psi (6.9 MPa) using test method ASTM D1002 and is 250°F/121°C.

Bulk Resin Properties

Tensile Properties - tested using 0.125 inch/3.18 mm castings per ASTM D638.

Tensile Strength @ 77°F/25°C	3,500 psi	24.1 MPa
Tensile Modulus @ 77°F/25°C	375 ksi	2.58 GPa
Elongation at Break @ 77°F/25°C	9.0%	
Shore D Hardness @ 77°F/25°C	84	
T _g Dry	207°F	97°C
T _g Wet	157°F	69°C
Shear Modulus	135 ksi	930 MPa
Poisson's Ratio	0.39	

Compressive Properties - tested using 0.5 inch/12.7 mm castings per ASTM D695.

Compressive Strength, @77°F/25°C	8,800 psi	60.6 MPa
Compressive Modulus, @77°F/25°C	266 ksi	1833 MPa

Electrical Properties - tested per ASTM D149, D150

Dielectric Constant, 1 KHz, 77°F/25°C	3.43
Dissipation Factor, 1 KHz, 77°F/25°C	0.017

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. Empty containers retain product residue and vapors so obey all precautions when handling empty containers.

PART A

CAUTION! This material may cause eye and skin irritation or allergic dermatitis. It contains epoxy resins.

PART B

WARNING! This material causes eye and skin irritation or allergic dermatitis. It contains amines.

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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