



Technical Process Bulletin

LOCTITE EA 9395 AERO

Epoxy Paste Adhesive

(KNOWN AS Hysol EA 9395)

INTRODUCTION

LOCTITE EA 9395 AERO is a two-component adhesive system, which cures at ambient temperature and has excellent strength properties @ 350°F/177°C and higher. This product is thixotropic and is ideal for potting, filling and fairing applications. LOCTITE EA 9395 AERO does not contain metallic filler and can be used with composite substrates. It is ideal for applications where RAM/RAS considerations are important.

FEATURES

- Non-Metallic Filler
- Cures at Ambient Temperature
- Thixotropic
- Excellent Mechanical Properties
- Good Compressive Strength

Uncured Properties

	<u>Part A</u>	<u>Part B</u>	<u>Mixed</u>
Color	Light Blue	Olive Brown-Black	Gray-Blue
Viscosity @ 77°F Brookfield, HBT	7100 Poise Spdl 7 @ 20 rpm	360 Poise Spdl 4 @ 20 rpm	1,000 - 3,000 Poise Spdl 5 @ 20 rpm
Viscosity @ 25°C Brookfield, HBT	710 Pa·S Spdl 7 @ 2.1 rad/s	36 Pa·S Spdl 4 @ 2.1 rad/s	100 - 300 Pa·S Spdl 5 @ 2.1 rad/s
Density (g/ml)	1.42	1.00	1.31
Shelf life			
@ <40°F/4°C	1 year	1 year	
@ <77°F/25°C	1 year	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	17

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) 95 - 100 minutes @ 77°F/25°C
Method - ASTM D2471 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 - This adhesive may be cured for 5 days @ 77°F/25°C or 1 hour @ 150°F/66°C to achieve normal performance.

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 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	2,300	15.8
77/25	4,300	29.7
180/82	3,500	24.1
250/121	3,000	20.7
300/149	2,200	15.2
350/177	1,200	8.3

Peel Strength

T-Peel strength tested per ASTM D1876 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>Lb/in</u>	<u>N/25mm</u>
77/25	5-8	22-36





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Bell Peel strength tested per ASTM D3167 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>Lb/in</u>	<u>N/25mm</u>
77/25	15	67

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 approximately 350°F/177°C.

Bulk Resin Properties

Tensile Properties - tested using 0.125 inch/3.18 mm castings per ASTM D638, cured 5 days @ 77°F/25°C.

	Typical Results	
Tensile Strength @ 77°F/25°C	8,070 psi	55.6 MPa
Tensile Modulus @ 77°F/25°C	717 ksi	4940 MPa
Elongation at Break @ 77°F/25°C	2.6%	
Shore D Hardness @ 77°F/25°C	90	
Tg (tan delta by DMTA)	163°F	73°C
Shear Modulus, dry @ 77°F/25°C	224 ksi	1543 MPa

Compressive Properties - tested with cylindrical specimens 0.5 inch/12.7 mm diameter by 1 inch/25.4mm per ASTM D695.

<u>Compressive Strength, °F/°C</u>	Typical Results	
	<u>psi</u>	<u>MPa</u>
-67/-55	22,700	156.4
75/25	14,000	96.5
250/121	10,100	69.6
350/177	6,800	46.9
<u>Compressive Modulus, °F/°C</u>	<u>ksi</u>	<u>MPa</u>
77/25°C	429	2.956

Electrical Properties - tested per ASTM D149, D150.

	Typical Results		
	<u>0.1 KHz</u>	<u>1.0 KHz</u>	<u>10.0 KHz</u>
Dielectric Constant	4.22	4.13	3.97
Dissipation Factor	.016	.021	.033





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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.

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.





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