



# LOCTITE EA 9394.3 AERO Epoxy Paste Adhesive (KNOWN AS Hysol EA 9394.3)

## INTRODUCTION

LOCTITE EA 9394.3 AERO is a two-part structural paste adhesive, which cures at room temperature and possesses excellent strength to 350°F/177°C and higher. Its thixotropic nature and excellent high temperature compressive strength also make it ideal for potting, filling and liquid shim applications. LOCTITE EA 9394.3 AERO contains 5 mil glass beads for bond line thickness control.

## FEATURES

- Room Temperature Cure
- Good Gap Filling Capabilities
- 350°F/177°C Performance
- Potting Material
- Room Temperature Storage
- Outstanding Mechanical Properties
- Long Pot Life
- Low Toxicity

## Uncured Properties

	<u>Part A</u>	<u>Part B</u>	<u>Mixed</u>
Color	Gray	Black	Gray
Viscosity, 77°F Brookfield, HBT	4000-8000 Poise Spdl 7 @ 20 rpm	200-700 Poise Spdl 4 @ 20 rpm	1600 Poise Spdl 5 @ 20 rpm
Viscosity, 25°C Brookfield, HBT	400-800 Pa·S Spdl 7 @ 2.09 rad/sec	20-70 Pa·S Spdl 4 @ 2.09 rad/sec	160 Pa·S Spdl 5 @ 2.09 rad/sec
Density (g/ml)	1.50	1.00	1.36
Shelf Life @ <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





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

**Pot Life** (450 gram mass) 90 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.

Note: Special precautions are recommended to minimize carbonate formation in large assemblies subject to extended open times in humid environments. A special memo is available upon request from Henkel providing users with suggestions for minimizing carbonate formation.

**Curing** - LOCTITE EA 9394.3 AERO may be cured for 3 to 5 days @ 77°F/25°C to achieve normal performance. Accelerated cures up to 200°F/93°C (for small masses only) may be used as an alternative. For example, 1 hour @ 150°F/66°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 your supplier's information pertaining to the safe and proper use of solvents.

### Bond Strength Performance

**Tensile Lap Shear Strength** - tested per ASTM D1002 after curing for 5 days @ 77°F/25°C. Adherends are 2024-T3 bare aluminum treated with phosphoric acid anodized per ASTM D3933.

<u>Test Temperature, °F/°C</u>	<b>Typical Results</b>	
	<b>psi</b>	<b>MPa</b>
-67/-55	3,300	22.8
77/ 25	4,200	29.0
180/82	3,000	20.7
200/93	2,900	20.0
250/121	2,300	15.9
300/149	1,600	11.0
350/177	1,200	8.3
400/204	600	4.1





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### Typical Results

#### Test Temperature @ 77°F/25°C

<u>Specimen Conditioning</u>	<u>psi</u>	<u>MPa</u>
Room Temperature Control (no exposure)	4,300	29.7
77°F/25°C Water - 7 days @ 77°F/25°C	4,100	28.3
Isopropyl Alcohol - 7 days @ 77°F/25°C	4,000	27.6
Hydraulic Oil - 7 days @ 77°F/25°C	4,100	28.3
JP-4 Fuel - 7 days @ 77°F/25°C	4,200	29.0

### Peel Strength

Bell Peel strength tested per ASTM D3167 after curing for 7 days @ 77°F/25°C. Adherends are 2024-T3 clad aluminum treated with phosphoric acid anodized per ASTM D3933.

### Typical Results

<u>Test Temperature, °F/°C</u>	<u>pli</u>	<u>N/25m</u>
77/25	20	89

### 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 350°F/177°C.

### Bulk Resin Properties

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

	<u>psi</u>	<u>MPa</u>
Tensile Strength @ 77°F/25°C	6,675	46.04
Tensile Modulus @ 77°F/25°C	.615 x 10 <sup>6</sup>	4,242
Shear Modulus Dry @ 77°F/25°C	212,000	1,462
Shear Modulus Wet, @ 77°F/25°C	148,500	1,204
Elongation at Break @ 77°F/25°C	1.66%	
Shore D Hardness @ 77°F/25°C	88	
Tg Dry	172°F	78°C
Tg Wet	154°F	68°C

### 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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## Epoxy Paste Adhesive

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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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