



Hysol® EA 9360

Epoxy Paste Adhesive

Henkel Corporation
Aerospace Group
2850 Willow Pass Road
P.O. Box 312
Bay Point, CA 94565 USA
925.458.8000
Fax: 925.458.8030
www.aerospace.henkel.com

Description

Hysol EA 9360 is a two-component toughened paste adhesive, which combines high peel strength at room temperature with tensile lap shear strength @ 225°F to 250°F (107°C to 121°C).

Features

Available in dual cartridge packaging
High peel strength
Excellent static stress durability
>225°F/107°C service
Easy mixing two component system
Room temperature cure

Uncured Adhesive Properties

	<u>Part A</u>	<u>Part B</u>	<u>Mixed</u>
Color	Off White	Blue	
Viscosity @ 77°F	5700 Poise	1500 Poise	1200 Poise
Brookfield, HBT	Spdl 7 @ 20 rpm	Spdl 6 @ 20 rpm	Spdl 5 @ 20 rpm
Viscosity @ 25°C	570 Pa S	150 Pa S	120 Pa S
Brookfield, HBT	2.1 rad/sec	6.1 rad/sec	2.09 rad/sec
Density (g/ml)	1.18	1.0	
Shelf Life			
@ <40°F/4°C	1 year	1 year	
@ <77°F/25°C	6 months	6 months	
@ <90°F/32°C	6 months	6 months	

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).

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

<u>Mix Ratio</u>	<u>Part A</u>	<u>Part B</u>
By Weight	100	43
By Volume	2	1
Pot Life (200 g mass)	50 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 Hysol 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 to 7 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 @ 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 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 bare aluminum treated with phosphoric acid anodize per ASTM D3933.

Typical Results

Test Temperature °F/°C	EA 9360		EA 9320NA		MMM-A-132 Type 1 Class 2 Requirements	
	psi	MPa	psi	MPa	psi	MPa
-67/-55	4000	27.6	3400	23.4	3500	24.1
77/25	5000	34.5	4600	31.7	3500	24.1
180/82	3000	20.7	1500	10.3	2000	13.8
225/107	2000	13.8	900	6.2	no reqt	no reqt
250/121	950	6.5	600	4.1	no reqt	no reqt

Peel Strength

T-Peel strength tested per ASTM D1876 after curing for 5 days @ 77°F/25°C.

Adherends are 2024-T3 bare aluminum treated with phosphoric acid anodize per ASTM D3933.

Typical Results

Test Temperature °F/°C	EA 9360		EA 9320NA		MMM-A-132 Type 1 Class 2 Requirements	
	Lb/in	N/25 mm	Lb/in	N/25 mm	Lb/in	N/25 mm
77/25	50	222	20	89	20	89
After postcure 1 hour @ 180°F/82°C	30	133	20	89	no reqt	no reqt

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 >225°F/107°C.

Handling Precautions

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

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

WARNING! As with most epoxy based systems, this product may cause eye and skin irritation or allergic dermatitis. Contains epoxy resins.

PART B

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

Hysol[®] is a registered trademark of Henkel Corporation.

Rev. 1/01

DISCLAIMER: The information supplied in this document is for guidance only and should not be construed as a warranty. All implied warranties are expressly disclaimed, including without limitation any warranty of merchantability and fitness for use. All users of the materials are responsible for assuring that it is suitable for their needs, environmental and use. All data is subject to change as Henkel deems appropriate.

Users should review the Materials Safety Data Sheet (MSDS) and product label for the material to determine possible health hazards, appropriate engineering controls and precautions to be observed in using the material. Copies of the MSDS and label are available upon request.



Henkel Corporation
Aerospace Group
2850 Willow Pass Road
P.O. Box 312
Bay Point, CA 94565 USA
925.458.8000
www.aerospace.henkel.com