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HTTP://KRAYDEN.COM 1-800-448-0406

Hysol® EA 956

Epoxy Paste Adhesive

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Description

Hysol EA 956 is a two-component adhesive, which has excellent elevated temperature strength. Its room temperature cure capability and low viscosity make it ideal for repair applications, including laminating, injection and coating.

Features

Two Component System
Low Viscosity
Room Temperature Cure
Ideal for Repair

Uncured Adhesive Properties

	Part A	Part B	Mixed
Color	Amber	Amber	Amber
Viscosity, 77°F	350 Poise	20 Poise	162 Poise
Brookfield,HBT	Spdl 4 @ 20 rpm	Spdl 1 @ 20 rpm	Spdl 3 @ 20 rpm
Viscosity, 25°C	35 Pa·S	2 Pa·S	
Brookfield,HBT	Spdl 4 @ 2.1 rad/sec	Spdl 1 @ 2.1 rad/sec	
Density	1.25 gm/ml	0.96 gm/ml	1.15 gm/ml
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).

Mix Ratio	**Part A**	**Part B**
By Weight	100	58

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

Pot Life (450 gm mass) >30 minutes
Method - ASTM D 2471 in water bath.

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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 250 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 as shown below, 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.

Handling strength of 500 psi (3.4 MPa) is achieved with:
6 hrs @ 77°F/25°C, or
20 mins @ 140°F/60°C, or
3 mins @ 185°F/85°C, or
1 min @ 250°F/121°C

Curing - Hysol EA956 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) be used as an alternative. For example, 1 hour @ 200°F/93°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 as shown below. Adherends are 2024-T3 Alclad aluminum treated with chromic acid etch.

	Typical Results					
	Cured 5 days @77°F/25°C		Cured 1 hr @180°F/82°C		Cured 1 hr @200°F/93°C	
Test Temperature	psi	MPa	psi	MPa	psi	MPa
-67°F/-55°C	1,780	12.3	--	--	2,400	16.5
77°F/ 25°C	2,300	15.8	2,250	15.5	2,500	17.2
300°F/149°C	--	--	--	--	1,000	6.9
400°F/204°C	--	--	300	2.1	300	2.1

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 300°F/149°C, when cured 1 hour @ 200°F/93°C.

Henkel QC Acceptance Testing

This data sheet provides users with typical properties obtained from this adhesive. These values are not meant to be used to develop aerospace QC acceptance testing. Users interested in establishing values and tests for routine QC acceptance should request our internal specification (DAS), which provides detail test methods and values used to certify this adhesive

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Bulk Resin Properties

Tensile Properties - tested using 0.125 inch/3.18 cm castings per ASTM D 638.

	Typical Results			
	Cured 2 hr@200°F/93°C		Cured 7 days @77°F/25°C	
	psi	MPa	psi	MPa
Tensile Strength, PSI @77°F/25°C	6,900	47.5	5,800	40.0
Tensile Modulus, PSI @77°F/25°C	3.6×10^5	2.48×10^3	3.7×10^5	2.55×10^3
Elongation at Break, % @77°F/25°C	2.54	--	2.35	--
Shore D Hardness @ 77°F/25°C	88	--	85	--
T_g	253°F	123°C	156°F	69°C

Compressive Properties - tested using 0.5 inch/12.7 cm castings per ASTM D 695.

Compressive Strength, psi/Mpa @ 77°F/25°C	12,000	82.7
Compressive Modulus, psi/Mpa @ 77°F/25°C	158,000	1089

Electrical Properties - tested per ASTM D 149, D 150

	0.1 KHz	1.0 KHz	10.0 KHz
Dielectric Constant	3.63	3.59	3.46
Dissipation Factor	.007	.017	.028
Volume Resistivity (ohm-cm)	8.53×10^{14}		
Surface Resistivity (ohm)	2.43×10^{15}		
Thermal Conductivity	4.90×10^4cal/sec-cm-°C/0.205 W(m•K)		

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.

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PART A
WARNING! The uncured adhesive causes eye irritation and may cause skin irritation or allergic dermatitis. Contains epoxy resins.
PART B
DANGER! Causes severe skin and eye burns. Contains diethylenetriamine. Vapors may be irritating to the respiratory tract.

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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.

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