

LOCTITE® EA E-214HP™

February 2025

PRODUCT DESCRIPTION

LOCTITE® EA E-214HP™ provides the following product characteristics:

Technology	Epoxy
Chemical type	Epoxy
Appearance	Light grey paste
Components	One component - requires no mixing
Viscosity	Thixotropic
Cure	Heat cure
Application	Bonding

LOCTITE® EA E-214HP™ is a light paste, industrial grade epoxy adhesive. This one-component, no-mix, heat activated formulation develops tough, strong, structural bonds which provide excellent peel resistance and impact strength. When fully cured, the epoxy offers superior thermal shock resistance, excellent mechanical and electrical properties, and withstands exposure to a wide variety of solvents and chemicals. This product bonds to a wide variety of materials, including metals, glass, ceramics and plastics.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Physical properties:

Specific gravity @ 25°C	1.11
Viscosity, Brookfield - RVT, 25°C , mPa·s (cP):	
Spindle 7, speed 1 rpm	2,000,000 to 3,000,000
Spindle 7, speed 2.5 rpm	800,000 to 1,500,000
Flash point - see SDS	

TYPICAL PROPERTIES OF CURED MATERIAL

Physical properties:

Glass Transition Temperature ISO 11359-2, °C	120
Shore Hardness, ISO 868, Durometer D	85
Elongation, at break, ISO 527-2, %	7
Tensile strength, ISO 527-2	N/mm ² 31 (psi) (4,460)

Electrical properties:

Dielectric breakdown strength, IEC 60243-1, kV/mm	22
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TYPICAL PERFORMANCE OF CURED MATERIAL

Adhesive properties

Cured for 2 hours @ 120°C followed by 4 hours @ 22°C, 0 gap
Lap shear strength:

Steel (grit blasted)	N/mm ² 33 (psi) (4,820)
Aluminum (Acid Etched & Abraded)	N/mm ² ≥13.8 (psi) (≥2,000)
Aluminum (Anodized)	N/mm ² 8.4 (psi) (1,220)
Stainless Steel	N/mm ² 37 (psi) (5,340)
Polycarbonate	N/mm ² 10 (psi) (1,430)
Nylon	N/mm ² 1.2 (psi) (180)
Wood (Fir)	N/mm ² 5 (psi) (720)

Block Shear Strength, ISO 13445:

Epoxy	N/mm ² 9.2 (psi) (1,330)
Glass	N/mm ² 23 (psi) (3,370)
PVC	N/mm ² 5.2 (psi) (760)
Acrylic	N/mm ² 3.7 (psi) (530)

TYPICAL ENVIRONMENTAL RESISTANCE

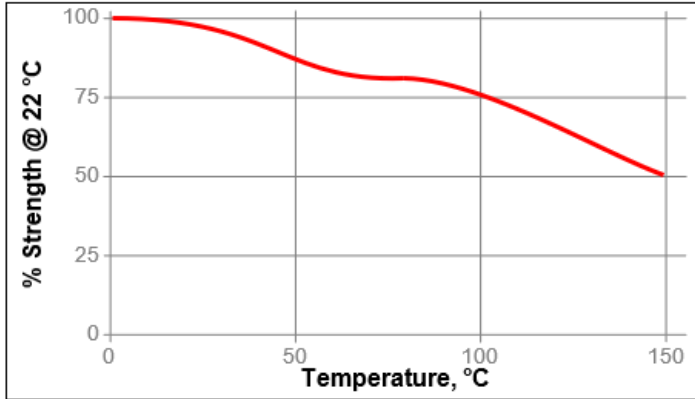
Cured for 2 hours @ 120°C followed by 4 hours @ 22°C, 0.12 to 0.23 gap

Lap shear strength:

Aluminum (Acid Etched & Abraded)

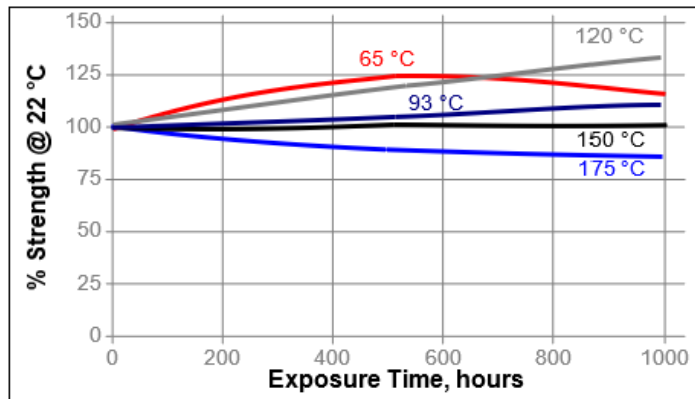
Hot Strength

Tested at temperature



Heat Aging

Cured for 2 hours at 120°C and 4 hours at 22°C on steel with no induced gap, aged at temperature indicated and tested at 22°C.



Chemical/Solvent Resistance

Aged under conditions indicated and tested @ 22°C.

Environment	°C	% of initial strength	
		500 h	1000 h
Air	87	90	80
Motor oil (10W30)	87	95	95
Unleaded gasoline	87	110	115
Water/glycol 50/50	87	85	80
Water	22	70	70
Acetone	22	110	100
Isopropanol	22	120	115
Salt fog	22	45	60
Condensing Humidity	49	60	50
95% RH	40	75	70

GENERAL INFORMATION

This product is not recommended for use in pure oxygen and/or oxygen rich systems and should not be selected as a sealant for chlorine or other strong oxidizing materials.

For safe handling information on this product, consult the Material Safety Data Sheet.

Direction for use

1. For high strength structural bonds, remove surface contaminants such as paint, oxide films, oils, dust, mold release agents and all other surface contaminants.
2. Use gloves to minimize skin contact. DO NOT use solvents for cleaning hands.
3. For maximum bond strength apply adhesive evenly to both surfaces to be joined.
4. Join the adhesive coated surfaces and allow to cure at 120°C or above until completely firm. Heat up to 150°C for 2 hours, will maximize properties.
5. Keep parts from moving during cure. Contact pressure is necessary. Maximum shear strength is obtained with a 0.08 to 0.13 mm bond line.
6. Excessive uncured adhesive can be cleaned up with ketone type solvents.

Handling precautions

LOCTITE® EA E-214HP™ reacts quickly when exposed to temperatures above 120. This product evolves heat (exotherms) during the solidification reaction. Care should be taken to avoid the use of LOCTITE® EA E-214HP™ in sections greater than 6mm to avoid excessive heat build up during the exothermic reaction, which causes rapid expansion, blistering or cracking of the product.

Storage

Store product in the unopened container in a dry location. Storage information may be indicated on the product container labeling.

Material removed from containers may be contaminated during use. **Optimal Storage: below 4°C. Storage greater than 4°C can adversely affect product properties.**

Do not return product to the original container. Henkel Corporation cannot assume responsibility for product which has been contaminated or stored under conditions other than those previously indicated. If additional information is required, please contact your local Henkel representative.



Product Specification

The technical data contained herein are intended as reference only and are not considered specifications for the product.

Product specifications are located on the Certificate of Analysis or please contact Henkel representative.

Approval and Certificate

Please contact a Henkel representative for related approval or certificate of this product.

Data Ranges

The data contained herein may be reported as a typical value. Values are based on actual test data and are verified on a periodic basis.

Temperature/Humidity Ranges: 23°C / 50% RH = 23±2°C / 50±5% RH

Conversions

$(^{\circ}\text{C} \times 1.8) + 32 = ^{\circ}\text{F}$

$\text{kV/mm} \times 25.4 = \text{V/mil}$

$\text{mm} / 25.4 = \text{inches}$

$\mu\text{m} / 25.4 = \text{mil}$

$\text{N} \times 0.225 = \text{lb}$

$\text{N/mm} \times 5.71 = \text{lb/in}$

$\text{N/mm}^2 \times 145 = \text{psi}$

$\text{MPa} \times 145 = \text{psi}$

$\text{N}\cdot\text{m} \times 8.851 = \text{lb}\cdot\text{in}$

$\text{N}\cdot\text{m} \times 0.738 = \text{lb}\cdot\text{ft}$

$\text{N}\cdot\text{mm} \times 0.142 = \text{oz}\cdot\text{in}$

$\text{mPa}\cdot\text{s} = \text{cP}$

Disclaimer

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