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Technical Data Sheet

LOCTITE® AA H8000™

Known as Loctite H8000
September 2022

PRODUCT DESCRIPTION

LOCTITE® AA H8000™ provides the following product characteristics:

Technology	Acrylic
Chemical Type	Methacrylate
Appearance,Resin (Component A)	Yellow
Appearance, Hardener (Component B)	blue
Appearance (Mixture)	green[LMS]
Cure	Room temperature cure
Components	Two components - requires mixing
Mix Ratio by volume: Part A: Part B	10 : 1
Product Benefits	• Superior impact and peel strength • Little or no surface preparation • Rapid room temperature cure • Excellent environmental resistance
Application	Bonding

LOCTITE® AA H8000™ is a non-sag, two component, room temperature curing methacrylate adhesive system. The product is designed to have fast fixture time and excellent bond strength on multiple substrates including metals, plastics and composites. The product also provides high elongation and excellent cold temperature impact strength. LOCTITE® AA H8000™ forms resilient bonds and maintains its strength over a wide range of temperatures. Recommended substrates include steel, aluminum, stainless steel, FRP, xenoy, RTM, gelcoat and ABS.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Part A Properties:

Specific Gravity @ 25 °C 0.97

Viscosity, Cone & Plate, 25 °C, mPa·s (cP):
Cone CP50-1 @ shear rate 50 s^{-1} 6,700

Viscosity, Brookfield - HBD,25°C,mPa·s (cP):
Spindle 6, speed 10 rpm 160,000 to 250,000

Flash Point - See SDS

Part B Properties:

Specific Gravity @ 25 °C 1.2

Viscosity, Cone & Plate, 25 °C, mPa·s (cP):
Cone CP50-1 @ shear rate 50 s^{-1} 6,530

Viscosity, Brookfield - HBD,25°C,mPa·s (cP):
Spindle 5, speed 20 rpm 20,000 to 50,000
Flash Point - See SDS

Mixed Properties:

Specific Gravity @ 25 °C 0.98

Viscosity, Cone & Plate, 25 °C, mPa·s (cP):
Cone CP50-1 @ shear rate 50 s^{-1} 8,850

Working Time @ 25 °C, minutes (maximum time before assembly):
Steel 30
Aluminium 30
Polyethylene 30

Flash Point - See SDS

TYPICAL CURING PERFORMANCE

Fixture Time

Fixture time is defined as the time to develop a shear strength of 0.1 N/mm² .

Fixture Time, ISO 4587, minutes:
Grit Blasted Mild Steel 25 to 30

Peak Exotherm Temperature

Peak Exotherm Temperature, 10 gram mass:
Peak Temperature Time, minutes 29
Peak Temperature, °C 128

TYPICAL PROPERTIES OF CURED MATERIAL

Physical Properties:

Glass Transition Temperature(Tg), ISO 11359-2, °C 71

Coefficient of Thermal Expansion, ISO 11359-2 K^{-1}:
Pre Tg 136×10^{-06}
Post Tg 223×10^{-06}

Shore Hardness, ISO 868, Durometer D 70
Linear Shrinkage, in/in 5

Volume Shrinkage, % 14
Elongation, at break, ISO 527-2, % 13
Elongation, at yield, ISO 527-2, % 12

Tensile Strength, at yield, ISO 527-2	N/mm² (psi)	15 (2,215)
Tensile Strength, at break, ISO 527-2	N/mm² (psi)	15 (2,150)
Tensile Modulus, ISO 527-2	N/mm² (psi)	1,080 (157,090)

TYPICAL PERFORMANCE OF CURED MATERIAL

Adhesive Properties

Cured for 24 hours @ 22°C
Lap Shear Strength :

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Steel	N/mm² (psi)	≥19.31[LMS] (≥2,800)

Cured for 72 hours @ 22°C.

Impact Strength, ISO 9653, J:

Grit Blasted Mild Steel (GBMS)	23
Aluminum (abraded)	15
Grit Blasted Mild Steel (GBMS) @ -40 °C	13

"T" Peel Strength, ISO 11339:

Steel	N/mm (lb/in)	8 (45)
Aluminum	N/mm (lb/in)	2 (12)

Block Shear Strength, ISO 13445:

Ferrite Magnet to Steel	N/mm² (psi)	17 (2,460)
Glass	N/mm² (psi)	12 (1,820)
Acrylic	N/mm² (psi)	4.5 (670)
Epoxy	N/mm² (psi)	14 (2,060)
ABS	N/mm² (psi)	3 (480)
PVC	N/mm² (psi)	8 (1,140)
Polycarbonate	N/mm² (psi)	4.5 (660)

Lap Shear Strength :

Grit Blasted Mild Steel (GBMS)	N/mm² (psi)	24 (3,500)
Aluminum	N/mm² (psi)	21 (3,140)
Stainless Steel	N/mm² (psi)	18 (2,690)
Galvanized Steel	N/mm² (psi)	1.4 (200)
FRP	N/mm² (psi)	10 (1,470)
Gelcoat	N/mm² (psi)	6.5 (960)

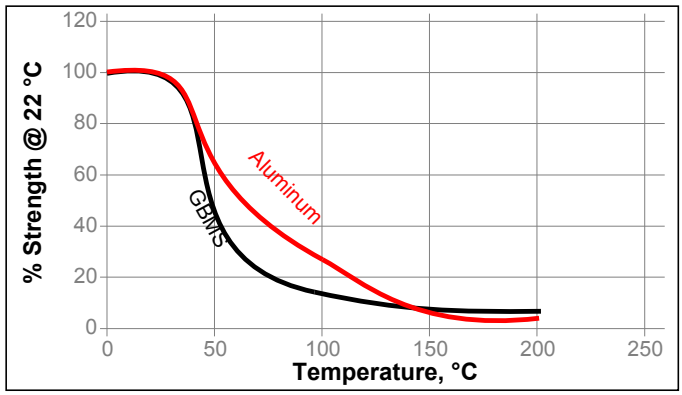
TYPICAL ENVIRONMENTAL RESISTANCE

Cured for 72 hours @ 22°C

Lap Shear Strength :

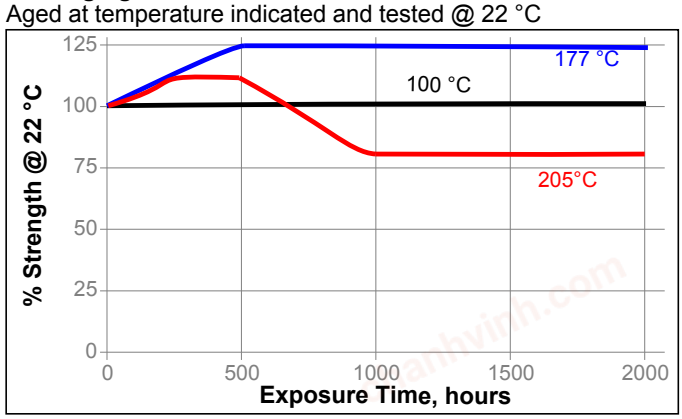
Grit Blasted Mild Steel (GBMS)

Hot Strength



Heat Aging

Aged at temperature indicated and tested @ 22 °C



Chemical/Solvent Resistance

Aged under conditions indicated and tested @ °C

		% of initial strength	
Environment	**°C**	**500 h**	**1000 h**
Air	87	100	100
Motor oil (10W30)	87	45	45
Unleaded gasoline	87	20	20
Water/glycol 50/50	87	40	40
Water	22	100	100
Acetone	22	15	15
Isopropanol	22	80	80
Salt fog	35	75	75
Condensing Humidity	49	75	75
95% RH	40	95	75

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 Safety Data Sheet (SDS).

Directions 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. **Dual Cartridges:** To begin using a new cartridge,

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remove cartridge cap and dispense a small amount of adhesive, making sure both parts A&B are extruding. Attach nozzle and dispense approximately 25 to 50mm, before applying onto part to be bonded. Partially used cartridges can be stored with the mixing nozzle attached. To reuse, remove and discard old nozzle, attach the new nozzle, dispense approximately 25 to 50mm, before applying onto part to be bonded.
Bulk Containers: Normally material is dispensed through volumetric metered mixing equipment, attached to static mix nozzles.

4. For maximum bond strength apply adhesive evenly to both surfaces to be joined.
5. Application to the substrates should be made as soon as possible. Larger quantities and/or higher temperatures will reduce the working time.
6. Join the adhesive coated surfaces and allow to cure. Higher temperatures will speed up curing.
7. Keep assembled parts from moving during cure. The bond should be allowed to develop full strength before subjecting to any service load.
8. Excessive uncured adhesive can be cleaned up with ketone type solvents.

Loctite Material Specification[LMS]
LMS dated February 26, 2009 (Part A) and LMS dated September 26, 2009 (Part B). Test reports for each batch are available for the indicated properties. LMS test reports include selected QC test parameters considered appropriate to specifications for customer use. Additionally, comprehensive controls are in place to assure product quality and consistency. Special customer specification requirements may be coordinated through Henkel Loctite Quality.

Storage
The product is classified as flammable and must be stored in an appropriate manner in compliance with relevant regulations. Do not store near oxidizing agents or combustible materials. Store product in the unopened container in a dry location. Storage information may also be indicated on the product container labelling.
Optimal Storage: 2 °C to 8 °C. Storage below 2 °C or greater than 8 °C can adversely affect product properties.
Material removed from containers may be contaminated during use. Do not return product to the original container. Henkel 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 Technical Service Center or Customer Service Representive.

Conversions
(°C x 1.8) + 32 = °F
kV/mm x 25.4 = V/mil
mm / 25.4 = inches
µm / 25.4 = mil
N x 0.225 = lb
N/mm x 5.71 = lb/in
N/mm² x 145 = psi
MPa x 145 = psi
N·m x 8.851 = lb·in
N·m x 0.738 = lb·ft
N·mm x 0.142 = oz·in
mPa·s = cP

Disclaimer

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