Technical Data Sheet

LOCTITE® AA H8100™

Known as LOCTITE® H8100™
January 2015

PRODUCT DESCRIPTION

LOCTITE® AA H8100™ 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 component - requires mixing
Mix Ratio, by volume - Part A: Part B	10 : 1
Product Benefits	• Non-sag • Little or no surface preparation • Offers excellent tolerance to off-ratio mixing
Application	Bonding

LOCTITE® AA H8100™ 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 H8100™ forms resilient bonds and maintains its strength over a wide range of temperatures.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Part A:

Specific Gravity @ 25 °C 0.95

Viscosity, Cone & Plate, 25 °C, mPa·s (cP):

Cone CP50-1 @ shear rate 50 s^{-1} 1,380

Viscosity, Brookfield - HBD, 25 °C, mPa·s (cP):

Spindle 6, speed 10 rpm 160,000 to 250,000

Flash Point - See SDS

Part B:

Specific Gravity @ 25 °C 1.1

Viscosity, Cone & Plate, 25 °C, mPa·s (cP):

Cone CP50-1 @ shear rate 50 s^{-1} 6,950

Viscosity, Brookfield - HBD, 25 °C, mPa·s (cP):

Spindle 5, speed 20 rpm 20,000 to 50,000

Flash Point - See SDS

Mixed:

Specific Gravity @ 25 °C 0.97

Viscosity, Cone & Plate, 25 °C, mPa·s (cP):

Cone CP50-1 @ shear rate 50 s^{-1} 15,360

Working Time @ 25 °C, minutes (maximum time before assembly):

Steel 15

Aluminium 15

Polyethylene 13

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 15 to 20

Peak Exotherm Temperature

Peak Exotherm Temperature, 10 gram mass:

Peak Temperature Time, minutes 16

Peak Temperature, °C 119

TYPICAL PROPERTIES OF CURED MATERIAL

Physical Properties:

Glass Transition Temperature (Tg), ISO 11359-2, °C 75

Coefficient of Thermal Expansion, ISO 11359-2 K^{-1}:

Pre Tg 121×10^{-06}

Post Tg 226×10^{-06}

Shore Hardness, ISO 868, Durometer D 62

Linear Shrinkage, % 4.2

Volume Shrinkage, % 12

Elongation, at break, ISO 527-2, % 20

Elongation, at yield, ISO 527-2, % 19

Tensile Strength, at yield, ISO 527-2 N/mm² (psi) 12 (1,680)

Tensile Strength, at break, ISO 527-2 N/mm² (psi) 11 (1,670)

Tensile Modulus, ISO 527-2 N/mm² (psi) 770 (111,530)

TYPICAL PERFORMANCE OF CURED MATERIAL

Adhesive Properties

Cured for 24 hours @ 22 °C

Lap Shear Strength, ISO 4587:

Steel	N/mm²	≥19.31[LMS]
	(psi)	(≥2,880)

Cured for 72 hours @ 22 °C.

Impact Strength, ISO 9653, J:

Grit Blasted Mild Steel (GBMS)	11
Aluminum (abraded)	2
Grit Blasted Mild Steel (GBMS) @ -40 °C	14

"T" Peel Strength, ISO 11339:

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

Block Shear Strength, ISO 13445:

Ferrite Magnet to Steel	N/mm²	20
	(psi)	(2,940)
Glass	N/mm²	14
	(psi)	(1,980)
Acrylic	N/mm²	8
	(psi)	(1,150)
Epoxy	N/mm²	17
	(psi)	(2,425)
ABS	N/mm²	6
	(psi)	(880)
PVC	N/mm²	8
	(psi)	(1,210)
Polycarbonate	N/mm²	7
	(psi)	(1,040)

Lap Shear Strength, ISO 4587:

Grit Blasted Mild Steel (GBMS)	N/mm²	20
	(psi)	(2,840)
Aluminum	N/mm²	21
	(psi)	(3,070)
Stainless Steel	N/mm²	18
	(psi)	(2,670)
Galvanized Steel	N/mm²	2
	(psi)	(340)
FRP	N/mm²	10
	(psi)	(1,440)
Gelcoat	N/mm²	7
	(psi)	(960)

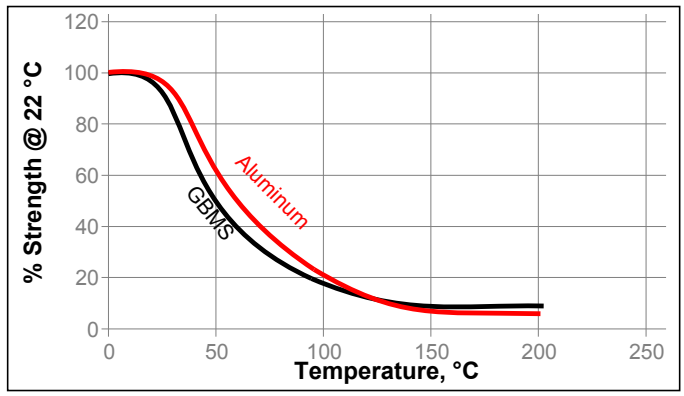
TYPICAL ENVIRONMENTAL RESISTANCE

Cured for 72 hours @ 22 °C

Lap Shear Strength, ISO 4587:

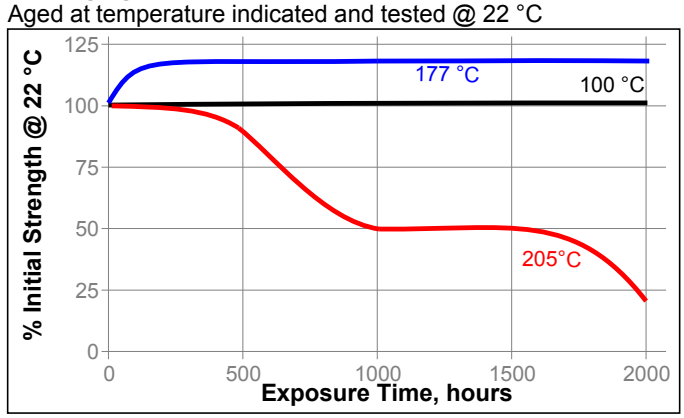
Grit Blasted Mild Steel (GBMS)

Hot Strength



Heat Aging

Aged at temperature indicated and tested @ 22 °C



Chemical/Solvent Resistance

Aged under conditions indicated and tested @ 22 °C.

		% of initial strength	
Environment	**°C**	**500 h**	**1000 h**
Air	87	100	100
Motor oil (10W30)	87	60	60
Unleaded gasoline	87	20	20
Water/glycol 50/50	87	50	50
Water	22	100	100
Acetone	22	20	20
Isopropanol	22	85	85
Salt fog	35	80	80
Condensing Humidity	49	90	90
95% RH	40	100	100

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, 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. 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 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

Note:
The information provided in this Technical Data Sheet (TDS) including the recommendations for use and application of the product are based on our knowledge and experience of the product as at the date of this TDS. The product can have a variety of different applications as well as differing application and working conditions in your environment that are beyond our control. Henkel is, therefore, not liable for the suitability of our product for the production processes and conditions in respect of which you use them, as well as the intended applications and results. We strongly recommend that you carry out your own prior trials to confirm such suitability of our product.
Any liability in respect of the information in the Technical Data Sheet or any other written or oral recommendation(s) regarding the concerned product is excluded, except if otherwise explicitly agreed and except in relation to death or personal injury caused by our negligence and any liability under any applicable mandatory product liability law.

In case products are delivered by Henkel Belgium NV, Henkel Electronic Materials NV, Henkel Nederland BV, Henkel Technologies France SAS and Henkel France SA please additionally note the following:
In case Henkel would be nevertheless held liable, on whatever legal ground, Henkel's liability will in no event exceed the amount of the concerned delivery.

In case products are delivered by Henkel Colombiana, S.A.S. the following disclaimer is applicable:
The information provided in this Technical Data Sheet (TDS) including the recommendations for use and application of the product are based on our knowledge and experience of the product as at the date of this TDS. Henkel is, therefore, not liable for the suitability of our product for the production processes and conditions in respect of which you use them, as well as the intended applications and results. We strongly recommend that you carry out your own prior trials to confirm such suitability of our product.
Any liability in respect of the information in the Technical Data Sheet or any other written or oral recommendation(s) regarding the concerned product is excluded, except if otherwise explicitly agreed and except in relation to death or personal injury caused by our negligence and any liability under any applicable mandatory product liability law.

In case products are delivered by Henkel Corporation, Resin Technology Group, Inc., or Henkel Canada Corporation, the following disclaimer is applicable:
The data contained herein are furnished for information only and are believed to be reliable. We cannot assume responsibility for the results obtained by others over whose methods we have no control. It is the user's responsibility to determine suitability for the user's purpose of any production methods mentioned herein and to adopt such precautions as may be advisable for the protection of property and of persons against any hazards that may be involved in the handling and use thereof. In light of the foregoing, **Henkel Corporation specifically disclaims all warranties expressed or implied, including warranties of merchantability or fitness for a particular purpose, arising from sale or use of Henkel Corporation's products. Henkel Corporation specifically disclaims any liability for consequential or incidental damages of any kind, including lost profits.** The discussion herein of various processes or compositions is not to be interpreted as representation that they are free from domination of patents owned by others or as a license under any Henkel Corporation patents that may cover such processes or compositions. We recommend that each prospective user test his proposed application before repetitive use, using this data as a guide. This product may be covered by one or more United States or foreign patents or patent applications.

Trademark usage
Except as otherwise noted, all trademarks in this document are trademarks of Henkel Corporation in the U.S. and elsewhere. ® denotes a trademark registered in the U.S. Patent and Trademark Office.

Reference 0.2