

LOCTITE[®] AA 3038[™]

Known as LOCTITE[®] 3038[™]
December 2013

PRODUCT DESCRIPTION

LOCTITE[®] AA 3038[™] provides the following product characteristics:

Technology	Acrylic
Chemical Type	Acrylic
Appearance, Resin (Component A)	Clear yellow gel ^{LMS}
Appearance, Hardener (Component B)	Viscous straw colored liquid ^{LMS}
Components	Two component - requires mixing
Viscosity	Medium, thixotropic
Cure	Two part acrylic
Mix Ratio, by volume - Part A: Part B	1 : 10
Application	Bonding
Specific Benefit	Bonds low energy plastic without pre-treatment

LOCTITE[®] AA 3038[™] is designed primarily to bond e-coated metals (ECS) to glass fibre filled polypropylenes (PPGF) but can also be used on other low energy substrates such as LDPE and HDPE. The product is designed to work without surface pre-treatment. The product contains 0.25 mm fillers for bondline thickness control. The thixotropic nature of LOCTITE[®] AA 3038[™] reduces the migration of liquid product after application to the substrate.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Part A:

Specific Gravity @ 20 °C	1.2
Viscosity, Cone & Plate, mPa·s (cP):	
Temperature: 25 °C, Shear Rate: 20 s ⁻¹	1,500 to 15,000 ^{LMS}
Color, APHA	1 to 3 ^{LMS}
Flash Point - See SDS	

Part B:

Specific Gravity @ 25 °C	1.0
Viscosity, Cone & Plate, mPa·s (cP):	
Temperature: 25 °C, Shear Rate: 20 s ⁻¹	6,000 to 18,000 ^{LMS}
Flash Point - See SDS	

TYPICAL CURING PERFORMANCE

This product cures when the components are dispensed through a static mixer at room temperature.

Fixture Time

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

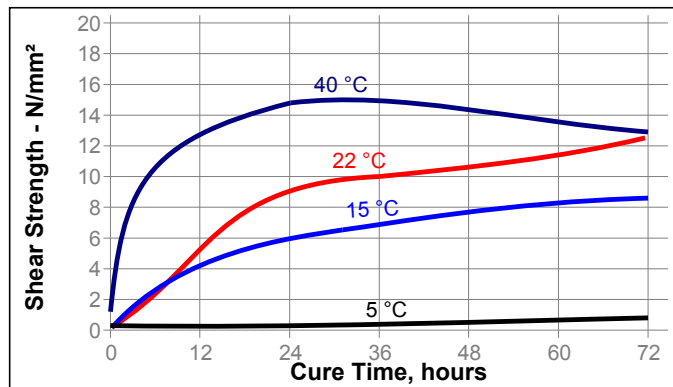
Fixture Time, mixed, minutes:	
PPGF to ECS	≤70

Open Time

Open Time, mixed, minutes	4
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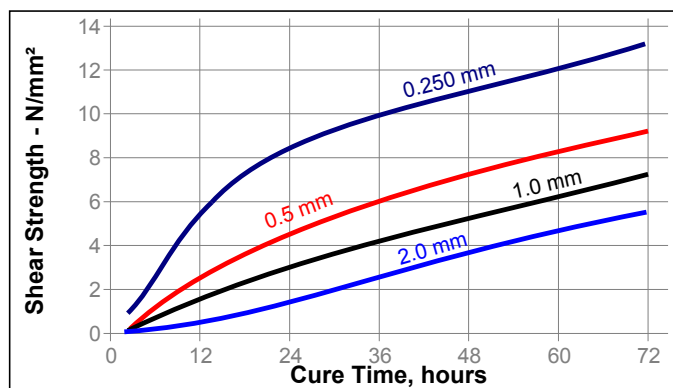
Cure Speed vs. Temperature

The graph below shows the shear strength developed with time on ECS to PPGF at different temperatures and tested according to ISO 4587.



Cure Speed vs. Bond Gap

The rate of cure will depend on the bondline gap. Thin bond lines result in higher cure speeds, increasing the bond gap will decrease the rate of cure.



TYPICAL PROPERTIES OF CURED MATERIAL

Cured for 24 hours @ 22 °C

Physical Properties:

Coefficient of Thermal Expansion, K ⁻¹ :	
Below T _g	178×10 ⁻⁶
Above T _g	145×10 ⁻⁶
Glass Transition Temperature, °C	57
Coefficient of Thermal Conductivity, W/(m·K)	0.436
Shore Hardness, ISO 868, Durometer D	65

Cured for 168 hours @ 22 °C

Physical Properties:

Elongation, at break, ISO 527-2, %		37
Tensile Strength, at break, ISO 527-2	N/mm ²	12.98
	(psi)	(1,880)
Tensile Modulus, ISO 527-2	N/mm ²	704
	(psi)	(102,080)

TYPICAL PERFORMANCE OF CURED MATERIAL**Adhesive Properties**

Cured for 72 hours @ 22 °C

Lap Shear Strength, ISO 4587:

PPGF to ECS	N/mm ²	≥8 ^{LMS}
	(psi)	(≥1,160)
PPGF to Polycarbonate	N/mm ²	5.5
	(psi)	(800)
Aluminum	N/mm ²	7.9
	(psi)	(1,150)
PPGF	N/mm ²	9.8
	(psi)	(1,420)
Polyamide (Nylon)	N/mm ²	2.9
	(psi)	(420)
Polybutylene Terephthalate (PBT)	N/mm ²	13.6
	(psi)	(1,970)

Cured for 24 hours @ 22 °C

Lap Shear Strength, ISO 4587:

PPGF to ECS	N/mm ²	8.4
	(psi)	(1,220)

Cured for 168 hours @ 22 °C

Lap Shear Strength, ISO 4587:

PPGF to ECS	N/mm ²	10.5
	(psi)	(1,520)

TYPICAL ENVIRONMENTAL RESISTANCE

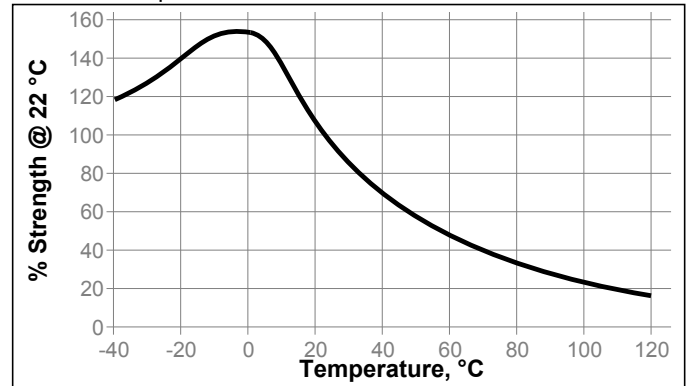
Cured for 24 hours @ 22 °C

Lap Shear Strength, ISO 4587:

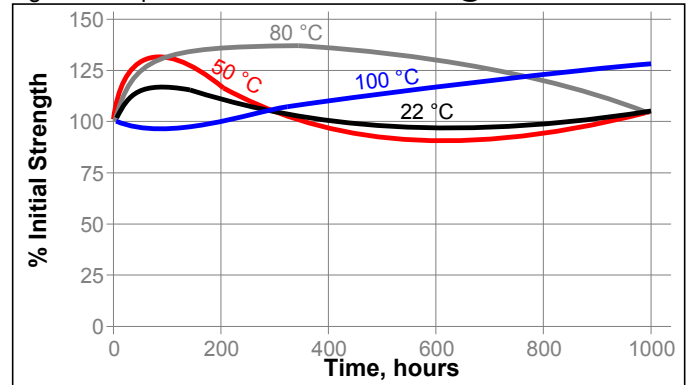
PPGF to ECS

Hot Strength

Tested at temperature

**Heat Aging**

Aged at temperature indicated and tested @ 22 °C

**Chemical/Solvent Resistance**

Aged under conditions indicated and tested @ 22°C.

Environment	°C	% of initial strength		
		100 h	500 h	1000 h
98% RH	40	112	103	94
Motor oil	22	106	110	107
Motor oil	50	132	96	111
Water/glycol	22	114	102	99
Water/glycol	50	109	102	91

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:

- For best performance bond surfaces should be clean and free from grease.
- For more detailed information, please contact your local Technical Service Center or Customer Service Representative.

Loctite Material Specification^{LMS}

LMS dated September 18, 2006 (Part A) and LMS dated September 26, 2007 (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

Store product in the unopened container in a dry location. Material removed from containers may be contaminated during use. Do not return liquid to original container. Storage information may be indicated on the product container labeling.

Optimal Storage: 8 °C to 21 °C. Storage below 8 °C or greater than 28 °C can adversely affect product properties.

Henkel cannot assume responsibility for product which has been contaminated or stored under conditions other than those recommended. If additional information is required, please contact your local Technical Service Center or Customer Service Representative.

Conversions

$(^{\circ}\text{C} \times 1.8) + 32 = ^{\circ}\text{F}$
 $\text{kV/mm} \times 25.4 = \text{V/mil}$
 $\text{mm} / 25.4 = \text{inches}$
 $\mu\text{m} / 25.4 = \text{mil}$
 $\text{N} \times 0.225 = \text{lb}$
 $\text{N/mm} \times 5.71 = \text{lb/in}$
 $\text{N/mm}^2 \times 145 = \text{psi}$
 $\text{MPa} \times 145 = \text{psi}$
 $\text{N}\cdot\text{m} \times 8.851 = \text{lb}\cdot\text{in}$
 $\text{N}\cdot\text{m} \times 0.738 = \text{lb}\cdot\text{ft}$
 $\text{N}\cdot\text{mm} \times 0.142 = \text{oz}\cdot\text{in}$
 $\text{mPa}\cdot\text{s} = \text{cP}$

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.

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Reference 0.5



Revision Number: 005.0

Issue date: 04/02/2014

1. PRODUCT AND COMPANY IDENTIFICATION

Product name:	LOCTITE AA 3038 A RESIN known as LOCTITE 3034 PO RESIN 490ML	IDH number:	966474
Product type:	Acrylics	Item number:	966474_193138
Restriction of Use:	None identified	Region:	United States
Company address:	Contact information:		
Henkel Corporation	Telephone: 860.571.5100		
One Henkel Way	MEDICAL EMERGENCY Phone: Poison Control Center		
Rocky Hill, Connecticut 06067	1-877-671-4608 (toll free) or 1-303-592-1711		
	TRANSPORT EMERGENCY Phone: CHEMTREC		
	1-800-424-9300 (toll free) or 1-703-527-3887		
	Internet: www.henkelna.com		

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

DANGER: HARMFUL IF SWALLOWED.
CAUSES SKIN IRRITATION.
MAY CAUSE AN ALLERGIC SKIN REACTION.
CAUSES SERIOUS EYE IRRITATION.
MAY CAUSE ALLERGY OR ASTHMA SYMPTOMS OR BREATHING
DIFFICULTIES IF INHALED.

HAZARD CLASS	HAZARD CATEGORY
ACUTE TOXICITY ORAL	4
SKIN IRRITATION	2
EYE IRRITATION	2A
RESPIRATORY SENSITIZATION	1
SKIN SENSITIZATION	1

PICTOGRAM(S)



Precautionary Statements

Prevention: Avoid breathing vapors, mist, or spray. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Wear eye and face protection. Wear protective gloves. In case of inadequate ventilation wear respiratory protection.

Response: If SWALLOWED: Immediately call poison control or physician if you feel unwell. IF ON SKIN: Wash with plenty of soap and water. IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Rinse mouth. If skin irritation or rash occurs: Get medical attention. If eye irritation persists: Get medical attention. If experiencing respiratory symptoms: Call a poison center or physician. Take off contaminated clothing.

Storage: Not prescribed

Disposal: Dispose of contents and/or container according to Federal, State/Provincial and local governmental regulations.

4 % of the mixture consists of ingredient(s) of unknown acute toxicity.

Classification complies with OSHA Hazard Communication Standard (29 CFR 1910.1200) and is consistent with the provisions of the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

See Section 11 for additional toxicological information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Component(s)	CAS Number	Percentage*
Polyfunctional aziridine	Proprietary	30 - 60
Silica, amorphous, treated	68909-20-6	10 - 30
2,5,8,11,14-Pentaoxapentadecane	143-24-8	10 - 30

* Exact percentage is a trade secret. Concentration range is provided to assist users in providing appropriate protections.

4. FIRST AID MEASURES

Inhalation:	Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. If symptoms develop and persist, get medical attention.
Skin contact:	Remove contaminated clothing and footwear. Immediately wash skin thoroughly with soap and water. Wash clothing before reuse. If symptoms develop and persist, get medical attention.
Eye contact:	Flush with copious amounts of water, preferably, lukewarm water for at least 15 minutes, holding eyelids open all the time. Get medical attention.
Ingestion:	Keep individual calm. Do not induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention.
Symptoms:	See Section 11.

5. FIRE FIGHTING MEASURES

Extinguishing media:	Foam, dry chemical or carbon dioxide.
Special firefighting procedures:	Wear self-contained breathing apparatus and full protective clothing, such as turn-out gear.
Unusual fire or explosion hazards:	Vapors may accumulate in low or confined areas, travel considerable distance to source of ignition, and flash back. This product may form explosive peroxides.
Hazardous combustion products:	Oxides of carbon. Oxides of nitrogen. Oxides of boron. Irritating organic vapours.

6. ACCIDENTAL RELEASE MEASURES

Use personal protection recommended in Section 8, isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Environmental precautions:	Do not allow product to enter sewer or waterways.
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Clean-up methods:

Remove all sources of ignition. Ensure adequate ventilation. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Store in a partly filled, closed container until disposal. Refer to Section 8 "Exposure Controls / Personal Protection" prior to clean up.

7. HANDLING AND STORAGE

Handling:

During use and until all vapors are gone: Keep area ventilated - do not smoke; extinguish all flames, pilot lights, and heaters; turn off stoves, electrical tools and appliances, and any other sources of ignition. Prevent contact with eyes, skin and clothing. Do not breathe vapor and mist. Wash thoroughly after handling. Do not taste or swallow. Make sure containers are properly grounded before use or transfer of material. Refer to Section 8.

Storage:

For safe storage, store at or below 32 °C (89.6 °F)
Keep in a cool, well ventilated area away from heat, sparks and open flame.
Keep container tightly closed until ready for use.

For information on product shelf life contact Henkel Customer Service at (800) 243-4874.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Employers should complete an assessment of all workplaces to determine the need for, and selection of, proper exposure controls and protective equipment for each task performed.

Hazardous Component(s)	ACGIH TLV	OSHA PEL	AIHA WEEL	OTHER
Polyfunctional aziridine	None	None	None	None
Silica, amorphous, treated	10 mg/m ³ TWA Inhalable dust.	6 mg/m ³ TWA	None	None
2,5,8,11,14-Pentaoxapentadecane	None	None	None	None

Engineering controls:

Provide adequate local exhaust ventilation to maintain worker exposure below exposure limits.

Respiratory protection:

Use NIOSH approved respirator if there is potential to exceed exposure limit(s).

Eye/face protection:

Safety goggles or safety glasses with side shields. Full face protection should be used if the potential for splashing or spraying of product exists. Safety showers and eye wash stations should be available.

Skin protection:

Use chemical resistant, impermeable clothing including gloves and either an apron or body suit to prevent skin contact. Nitrile gloves. Neoprene gloves.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:	Gel, Liquid
Color:	Colorless to yellow
Odor:	Mild
Odor threshold:	Not available.
pH:	Not available.
Vapor pressure:	Not available.
Boiling point/range:	Not determined
Melting point/ range:	Not available.
Specific gravity:	1.17
Vapor density:	Not available.
Flash point:	> 93 °C (> 199.4 °F) Seta closed cup
Flammable/Explosive limits - lower:	Not available.
Flammable/Explosive limits - upper:	Not available.
Autoignition temperature:	Not available.
Evaporation rate:	Not available.
Solubility in water:	Soluble
Partition coefficient (n-octanol/water):	Not available.
VOC content:	24.3 %; 274 g/l

Viscosity: Not available.
Decomposition temperature: Not available.

10. STABILITY AND REACTIVITY

Stability: Stable under normal conditions of storage and use.

Hazardous reactions: May occur.

Hazardous decomposition products: Oxides of carbon. Oxides of nitrogen. Oxides of boron. Oxides of lithium. Irritating organic vapours.

Incompatible materials: Oxidizing agents. Acids. Water. Alcohols. Anhydrides.

Reactivity: Not available.

Conditions to avoid: Heat, flames, sparks and other sources of ignition. Store away from incompatible materials. Do not mix in batches greater than 100 grams (0.22 pounds) unless you plan to use immediately. Protect from direct sunlight. Freezing conditions. UV light. Moisture. Humidity

11. TOXICOLOGICAL INFORMATION

Relevant routes of exposure: Skin, Inhalation, Eyes, Ingestion

Potential Health Effects/Symptoms

Inhalation: May cause allergic respiratory reaction. These symptoms, which can include chest tightness, wheezing, cough, shortness of breath or asthma attack, could be immediate or delayed (up to several hours after exposure).

Skin contact: Causes skin irritation. May cause allergic skin reaction.

Eye contact: Causes serious eye irritation.

Ingestion: Harmful if swallowed.

Hazardous Component(s)	LD50s and LC50s	Immediate and Delayed Health Effects
Polyfunctional aziridine	None	Allergen, Irritant, Respiratory
Silica, amorphous, treated	None	No Target Organs
2,5,8,11,14-Pentaoxapentadecane	None	Irritant, Reproductive

Hazardous Component(s)	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen (Specifically Regulated)
Polyfunctional aziridine	No	No	No
Silica, amorphous, treated	No	No	No
2,5,8,11,14-Pentaoxapentadecane	No	No	No

12. ECOLOGICAL INFORMATION

Ecological information: Not available.

13. DISPOSAL CONSIDERATIONS

Information provided is for unused product only.

Recommended method of disposal: Follow all local, state, federal and provincial regulations for disposal.
Hazardous waste number: Not a RCRA hazardous waste.

14. TRANSPORT INFORMATION

The transport information provided in this section only applies to the material/formulation itself, and is not specific to any package/configuration.

U.S. Department of Transportation Ground (49 CFR)

Proper shipping name: Not regulated
Hazard class or division: None
Identification number: None
Packing group: None

International Air Transportation (ICAO/IATA)

Proper shipping name: Not regulated
Hazard class or division: None
Identification number: None
Packing group: None

Water Transportation (IMO/IMDG)

Proper shipping name: Not regulated
Hazard class or division: None
Identification number: None
Packing group: None

15. REGULATORY INFORMATION

United States Regulatory Information

TSCA 8 (b) Inventory Status: All components are listed or are exempt from listing on the Toxic Substances Control Act Inventory.
TSCA 12 (b) Export Notification: 2,5,8,11,14-Pentaoxapentadecane (CAS# 143-24-8).
CERCLA/SARA Section 302 EHS: None above reporting de minimis
CERCLA/SARA Section 311/312: Immediate Health
CERCLA/SARA Section 313: None above reporting de minimis
California Proposition 65: This product contains a chemical known in the State of California to cause cancer.

Canada Regulatory Information

CEPA DSL/NDSL Status: Contains one or more components listed on the Non-Domestic Substances List. All other components are listed on or are exempt from listing on the Domestic Substances List. Components listed on the NDSL must be tracked by all Canadian Importers of Record as required by Environment Canada. They may be imported into Canada in limited quantities. Please contact Regulatory Affairs for additional details.

16. OTHER INFORMATION

This safety data sheet contains changes from the previous version in sections: New Safety Data Sheet format.

Prepared by: Catherine Bimler, Regulatory Affairs Specialist
Issue date: 04/02/2014

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