Safety Data Sheet

Revision Number: 010.0

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1. IDENTIFICATION

Product name: **LOCTITE EA 3472 B HARDENER known as LOCTITE FM STEEL LIQUID 1LB PTB**

IDH number: 702245

Product type/ Recommended use: Epoxy Hardener

Item number: 97483_239000

Restriction of Use: None identified

Region: United States

Company address:
Henkel Corporation
One Henkel Way
Rocky Hill, Connecticut 06067

Contact information:
Telephone: +1 (860) 571-5100
MEDICAL EMERGENCY Phone: Poison Control Center
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
MEDICAL EMERGENCY Phone: Poison Control Center
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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:	H302 - HARMFUL IF SWALLOWED. H311 - TOXIC IN CONTACT WITH SKIN. H314 - CAUSES SEVERE SKIN BURNS AND EYE DAMAGE. H317 - MAY CAUSE AN ALLERGIC SKIN REACTION. H334 - MAY CAUSE ALLERGY OR ASTHMA SYMPTOMS OR BREATHING DIFFICULTIES IF INHALED. H361 - SUSPECTED OF DAMAGING FERTILITY OR THE UNBORN CHILD.

HAZARD CLASS	HAZARD CATEGORY
ACUTE TOXICITY ORAL	4
ACUTE TOXICITY DERMAL	3
SKIN CORROSION	1
SERIOUS EYE DAMAGE	1
RESPIRATORY SENSITIZATION	1
SKIN SENSITIZATION	1
REPRODUCTIVE TOXICITY	2

PICTOGRAM(S)



Precautionary Statements

Prevention:
P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P261 - Avoid breathing mist/vapours.
P264 - Wash affected area thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P272 - Contaminated work clothing should not be allowed out of the workplace.
P280 - Wear protective gloves, clothing, eye and face protection.
P284 - [In case of inadequate ventilation] wear respiratory protection.

Response:
P301+P312+P330 - IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth.

P301+P330+P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing.
P304+P340+P310 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or physician.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313 - IF exposed or concerned: Get medical attention.
P333+P313 - If skin irritation or rash occurs: Get medical attention.
P342+P311 - If experiencing respiratory symptoms: Call a poison center or physician.
P361+P364 - Take off immediately all contaminated clothing and wash it before reuse.

Storage: P405 - Store locked up.

Disposal: P501 - Dispose of contents and/or container according to Federal, State/Provincial and local governmental regulations.

Other hazards Not available.

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	Weight %*
Fatty acids, C18 unsaturated, dimers, polymers with tall oil fatty acids and triethylenetetramine	68082-29-1	30 - 60
3,6-diazaoctanethylenediamine	112-24-3	10 - 30
N-Aminoethylpiperazine	140-31-8	10 - 30
4-nonylphenol, branched	84852-15-3	5 - 10
1,2-Ethanediamine, N1,N1-bis(2-aminoethyl)-	4097-89-6	1 - 5
Amines, polyethylenepoly-, triethylenetetramine fraction	90640-67-8	1 - 5
Fatty acids C18 unsat, reaction products with tetraethylenepentamine	1226892-45-0	1 - 5
Glycerylpoly(oxypropylene)triamine	64852-22-8	1 - 5
Diethylenetriamine	111-40-0	1 - 5
2-(2-aminoethylamino)ethanol	111-41-1	0.1 - 1
Amines, polyethylenepoly-, tetraethylenepentamine fraction	90640-66-7	0.1 - 1
4,4'-Isopropylidenediphenol	80-05-7	0.1 - 1
Phenol, 2-nonyl-, branched	91672-41-2	0.1 - 1
Tetraethylene pentamine	112-57-2	0.1 - 1
Dinonylphenol	1323-65-5	0.1 - 1

* Exact percentages may vary or are trade secret. Concentration range is provided to assist users in providing appropriate protections.

4. FIRST AID MEASURES

First Aid Measures by likely routes of exposure

Inhalation: Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention.

Skin contact: Remove contaminated clothing and footwear. Immediately flush skin with plenty of water (using soap, if available). Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

Eye contact: Immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.

Ingestion: DO NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention.

Most important symptoms and effects (acute and delayed): The most important known symptoms and effects, both acute and delayed, are described in Section 11: Toxicological Information.

Indication of any immediate medical attention / special treatment needed: Not available.

5. FIRE FIGHTING MEASURES

Extinguishing media: Water spray (fog), foam, dry chemical or carbon dioxide.

Improper extinguishing agents: Not available.

Special firefighting procedures: Wear self-contained breathing apparatus and full protective clothing, such as turn-out gear.

Unusual fire or explosion hazards: None

Hazardous combustion products: Oxides of carbon. Oxides of nitrogen. Ammonia. Aldehydes. Acids. Phenolics. Toxic fumes. Irritating vapors.

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.

Clean-up methods: Ensure adequate ventilation. Wear appropriate personal protective equipment. Refer to Section 8 "Exposure Controls / Personal Protection" prior to clean up. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Scrape up spilled material and place in a closed container for disposal.

7. HANDLING AND STORAGE

Handling: Prevent contact with eyes, skin and clothing. Do not breathe vapor and mist. Wash thoroughly after handling. Do not taste or swallow. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling.

Storage: Keep container tightly closed and in a cool, well-ventilated place away from incompatible materials. Keep away from heat, spark and flame.

Shelf Life Statement: Not available.

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
3,6-diazaoctanethylenediamine	None	None	1 ppm (6 mg/m3) TWA (SKIN)	None
Diethylenetriamine	1 ppm TWA (SKIN)	None	None	None
Tetraethylene pentamine	None	None	1 ppm (5 mg/m3) TWA Aerosol. (SKIN) Aerosol. (Skin sensitizer.)	None

Engineering controls: Use local ventilation if general ventilation is insufficient to maintain vapor concentration below established 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.
Skin protection:	Use chemical resistant, impermeable clothing including gloves and either an apron or body suit to prevent skin contact.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:	liquid
Color:	Blue
Odor:	Ammoniacal
Odor threshold:	Not available.
pH:	Not available.
Vapor pressure:	Not available.
Boiling point/range:	137 - 293 °C (278.6 - 559.4 °F)
Melting point/ range:	Not available.
Density/Relative density:	0.99
Relative vapor density:	Not available.
Flash point:	> 93 °C (> 199.4 °F)
Flammable/Explosive limits - lower:	Not available.
Flammable/Explosive limits - upper:	Not available.
Autoignition temperature:	Not available.
Flammability:	Not applicable
Evaporation rate:	Not available.
Solubility:	Soluble
Partition coefficient n-octanol/water (logarithmic value):	Not available.
VOC content:	< 1.0 %; < 10 g/l (value for resin and hardener together) (estimated)
Dynamic viscosity:	Not available.
Kinematic viscosity:	Not available.
Particle characteristics:	Not available.
Decomposition temperature:	Not available.

10. STABILITY AND REACTIVITY

Stability:	Stable under normal conditions of storage and use.
Hazardous reactions:	None under normal processing.
Hazardous decomposition products:	Oxides of carbon. Ammonia. Aldehydes. Acids. Phenolics. Toxic fumes. Irritating vapors.
Incompatible materials:	Strong oxidizing agents. Strong Lewis acids. Strong mineral acids. Strong bases. Aldehydes. Ketones. Acrylates. Organic halides.
Reactivity:	Not available.
Conditions to avoid:	Keep away from heat, ignition sources and incompatible materials.

11. TOXICOLOGICAL INFORMATION

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

Potential Health Effects/Symptoms

Inhalation: May cause allergic respiratory reaction. Mists, vapors or liquid may cause severe irritation or burns. Causes respiratory tract irritation.
Skin contact: Causes skin burns. May cause allergic skin reaction. Harmful in contact with skin.
Eye contact: Causes eye burns. Causes serious eye damage.
Ingestion: If ingested, severe burns of the mouth and throat may occur, as well as perforation of the esophagus and the stomach. Harmful if swallowed. May cause an aspiration hazard if swallowed.

Hazardous Component(s)	LD50s and LC50s
Fatty acids, C18 unsaturated, dimers, polymers with tall oil fatty acids and triethylenetetramine	None
3,6-diazaoctanethylenediamine	None
N-Aminoethylpiperazine	None
4-nonylphenol, branched	None
1,2-Ethanediamine, N1,N1-bis(2-aminoethyl)-	None
Amines, polyethylenepoly-, triethylenetetramine fraction	None
Fatty acids C18 unsat, reaction products with tetraethylenepentamine	None
Glycerylpoly(oxypropylene)triamine	None
Diethylenetriamine	Oral LD50 (Rat) Approximate 1,140 mg/kg Oral LD50 (Rat) = 1,080 mg/kg Oral LD50 (Rat) = 2.33 g/kg
2-(2-aminoethylamino)ethanol	Oral LD50 (Rat) = 3,000 mg/kg
Amines, polyethylenepoly-, tetraethylenepentamine fraction	None
4,4'-Isopropylidenediphenol	Oral LD50 (Rat) = 4,100 mg/kg Oral LD50 (Rat) = 3,300 mg/kg
Phenol, 2-nonyl-, branched	None
Tetraethylene pentamine	Oral LD50 (Rat) = 3.99 g/kg Oral LD50 (Rat) = 2.1 g/kg Dermal LD50 (Rabbit) = 0.66 g/kg
Dinonylphenol	None

Hazardous Component(s)	Immediate Health Effects	Delayed Health Effects	Chronic Health Effects
Fatty acids, C18 unsaturated, dimers, polymers with tall oil fatty acids and triethylenetetramine			
3,6-diazaoctanethylenediamine	Corrosive Irritant	Allergen	Developmental Mutagen
N-Aminoethylpiperazine	Irritant Corrosive	Allergen	
4-nonylphenol, branched	Irritant Corrosive		
1,2-Ethanediamine, N1,N1-bis(2-aminoethyl)-			
Amines, polyethylenepoly-, triethylenetetramine fraction			
Fatty acids C18 unsat, reaction products with tetraethylenepentamine			
Glycerylpoly(oxypropylene)triamine			
Diethylenetriamine	Irritant	Allergen	Eyes
2-(2-aminoethylamino)ethanol	Irritant	Allergen	
Amines, polyethylenepoly-, tetraethylenepentamine fraction			
4,4'-Isopropylidenediphenol	Irritant	Allergen	Blood Kidney Reproductive Spleen
Phenol, 2-nonyl-, branched			
Tetraethylene pentamine	Irritant	Allergen	Mutagen
Dinonylphenol			

Hazardous Component(s)	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen (Specifically Regulated)
Fatty acids, C18 unsaturated, dimers, polymers with tall oil fatty acids and triethylenetetramine	No	No	No
3,6-diazaoctanethylenediamine	No	No	No

N-Aminoethylpiperazine	No	No	No
4-nonylphenol, branched	No	No	No
1,2-Ethanediamine, N1,N1-bis(2-aminoethyl)-	No	No	No
Amines, polyethylenepoly-, triethylenetetramine fraction	No	No	No
Fatty acids C18 unsat, reaction products with tetraethylenepentamine	No	No	No
Glycerylpoly(oxypropylene)triamine	No	No	No
Diethylenetriamine	No	No	No
2-(2-aminoethylamino)ethanol	No	No	No
Amines, polyethylenepoly-, tetraethylenepentamine fraction	No	No	No
4,4'-Isopropylidenediphenol	No	No	No
Phenol, 2-nonyl-, branched	No	No	No
Tetraethylene pentamine	No	No	No
Dinonylphenol	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.

14. TRANSPORT INFORMATION

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

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

Proper shipping name: Amines, liquid, corrosive, n.o.s. (Aminoethylpiperazine, Triethylenetetramine, Nonylphenol)
Hazard class or division: 8
Identification number: UN 2735
Packing group: II

International Air Transportation (ICAO/IATA)

Proper shipping name: Amines, liquid, corrosive, n.o.s. (Aminoethylpiperazine, Triethylenetetramine, Nonylphenol)
Hazard class or division: 8
Identification number: UN 2735
Packing group: II

Water Transportation (IMO/IMDG)

Proper shipping name: AMINES, LIQUID, CORROSIVE, N.O.S. (Aminoethylpiperazine, Triethylenetetramine, Nonylphenol)
Hazard class or division: 8
Identification number: UN 2735
Packing group: II
Marine pollutant: Nonylphenol

15. REGULATORY INFORMATION

United States Regulatory Information

TSCA 8 (b) Inventory Status: All components are listed as active or are exempt from listing on the Toxic Substances Control Act (TSCA) inventory.
TSCA 12 (b) Export Notification: Alkyl phenol (CAS# 84852-15-3).

CERCLA/SARA Section 302 EHS: None above reporting de minimis.
CERCLA/SARA Section 311/312: Please refer to the GHS classification in Section 2
CERCLA/SARA Section 313: This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (40 CFR 372). 4-nonylphenol, branched (CAS# 84852-15-3).

California Proposition 65: This product contains a chemical known in the State of California to cause cancer. This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

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: 3,11

Prepared by: Product Safety and Regulatory Affairs

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