Safety Data Sheet

according to 29CFR1910/1200 and GHS Rev. 3

Initial preparation date: : 12.19.2014

Ethylenediamine

SECTION 1: Identification of the substance/mixture and of the supplier

Product name: Ethylenediamine

Manufacturer/Supplier Article number: ED0100

Recommended uses of the product and restrictions on use: Laboratory

Manufacturer Details:

AquaPhoenix Scientific, Inc.
860 Gitts Run Road
Hanover, PA 17331
1-717-632-1291

Emergency telephone number:

ChemTel: (24-hour)
+1(800)255-3924
+1(813)248-0585 (International)

SECTION 2: Hazards identification

Classification of the substance or mixture:

Flammable

Health hazard

Corrosive

Irritant

AcTox Oral 4.
Flam Liq. 3.
AcTox Dermal 4.
Skin corr. 1B.
Resp. Sens. 1.
Skin Sens. 1.

Signal word: Danger

Hazard statements:

Flammable liquid and vapour.
Harmful if swallowed.
Harmful in contact with skin.
Causes severe skin burns and eye damage.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause an allergic skin reaction.

Precautionary statements:

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If medical advice is needed have product container or label at hand.
Keep out of reach of children.
Read label before use.
Keep container tightly closed.
Do not breathe dust/fume/gas/mist/vapors/spray.
Do not eat, drink or smoke when using this product.
Wash skin thoroughly after handling.
Keep away from heat/sparks/open flames/hot surfaces. No smoking.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ventilating/light/…/equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Contaminated work clothing should not be allowed out of the workplace.
Wear protective gloves/protective clothing/eye protection/face protection.
Wear respiratory protection.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
Rinse mouth.
Specific treatment (see supplemental first aid instructions on this label).
In case of fire, use agents recommended in section 5 for extinction.
If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
IF ON SKIN: Wash with soap and water.
Immediately call a POISON CENTER or doctor/physician.
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
Take off contaminated clothing and wash before reuse.
If skin irritation or a rash occurs: Get medical advice/attention.
Store in a well ventilated place. Keep cool.
Store locked up.
Dispose of contents and container as instructed in Section 13.

Other Non-GHS Classification: None

SECTION 3: Composition/information on ingredients

Ingredients:

Ingredients:		
CAS 107-15-3	Ethylenediamine	100 %
		Percentages are by weight

SECTION 4: First aid measures

Description of first aid measures

After inhalation:

Move exposed individual to fresh air. Loosen clothing as necessary and position individual in a comfortable position. Give artificial respiration if necessary. If breathing is difficult, give oxygen. Get medical aid.

After skin contact:

Wash affected area with soap and water. Rinse/flush exposed skin gently using water for 15-20 minutes. Seek

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medical aid immediately.

After eye contact:

Protect unexposed eye. Remove contact lens(es) if able to do so during rinsing. Immediately flush eyes with water for at least 15 minutes. Immediately get medical assistance.

After swallowing:

Rinse mouth thoroughly. Do not induce vomiting. Seek medical attention immediately. Never give anything by mouth to an unconscious person. If victim is fully conscious, give a cupful of water.

Most important symptoms and effects, both acute and delayed:

Irritation. Nausea. Headache. Shortness of breath.

Indication of any immediate medical attention and special treatment needed:

If seeking medical attention, provide SDS document to physician. Notes to physician: treat symptomatically.

SECTION 5: Firefighting measures

Extinguishing media

Suitable extinguishing agents:

Dry chemical powder. Alcohol foam. Carbon dioxide. Water spray. Polymer foam. If in laboratory setting, follow laboratory fire suppression procedures. Use appropriate fire suppression agents for adjacent combustible materials or sources of ignition.

Unsuitable extinguishing agents:

Water may be ineffective because it may not cool EDA below its flash point.

Special hazards arising from the substance or mixture:

Combustion products may include carbon oxides or other toxic vapors.

Advice for firefighters:

Protective equipment: None

Additional information (precautions):

Move product containers away from fire or keep cool with water spray as a protective measure, where feasible.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures:

Wear protective equipment. Avoid contact with eyes, skin, and clothing. Use respiratory protective device against the effects of fumes/dust/aerosol. Keep unprotected persons away. Ensure adequate ventilation. Keep away from ignition sources. Protect from heat. Stop the spill, if possible. Contain spilled material by diking or using inert absorbent. Transfer to a disposal or recovery container.

Environmental precautions:

Prevent from reaching drains, sewer or waterway. Collect contaminated soil for characterization per Section 13. Ethanol has a slight acute and chronic toxicity to aquatic life.

Methods and material for containment and cleaning up:

If in a laboratory setting, follow Chemical Hygiene Plan procedures. Approach spill from upwind. Use water spray to cool and disperse vapors, protect personnel and dilute spills to form non flammable mixtures. Collect liquids using vacuum or by use of absorbents. Place into properly labeled containers for recovery or disposal. If necessary, use trained response staff/contractor. Cover spill with suitable absorbing agent. Remove all sources of ignition. Use non-sparking equipment. Provide ventilation. Evacuate unnecessary personnel.

Reference to other sections: None

SECTION 7: Handling and storage

Precautions for safe handling:

Prevent formation of aerosols. Use spark-proof tolls and explosion proof equipment. Follow good hygiene

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procedures when handling chemical materials. Do not eat, drink, smoke, or use personal products when handling chemical substances. If in a laboratory setting, follow Chemical Hygiene Plan. Use only in well ventilated areas. Avoid splashes or spray in enclosed areas. Empty containers can still be hazardous since they retain product residue. Ground and bond containers when transferring material. Wash hands after handling. Avoid contact with skin and eyes.

Conditions for safe storage, including any incompatibilities:

Store in a cool location. Provide ventilation for containers. Avoid storage near extreme heat, ignition sources or open flame. Store away from foodstuffs. Store away from oxidizing agents. Store in cool, dry conditions in well sealed containers. Keep container tightly closed. Store with like hazards. Flammables-area. Store protected from moisture. Do not store in copper or copper alloy storage vessels.

SECTION 8: Exposure controls/personal protection

Control parameters:	107-15-3, Ethylenediamine, OSHA 10 ppm TWA; 25 mg/m3 TWA.
Appropriate engineering controls:	Emergency eye wash fountains and safety showers should be available in the immediate vicinity of use/handling. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapor or mists below the applicable workplace exposure limits (Occupational Exposure Limits-OELs) indicated above.
Respiratory protection:	Not required under normal conditions of use. Use suitable respiratory protective device when high concentrations are present. Use suitable respiratory protective device when aerosol or mist is formed. For spills, respiratory protection may be advisable.
Protection of skin:	The glove material has to be impermeable and resistant to the product/ the substance/ the preparation being used/handled. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation.
Eye protection:	Safety glasses with side shields or goggles.
General hygienic measures:	The usual precautionary measures are to be adhered to when handling chemicals. Keep away from food, beverages and feed sources. Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of work. Do not inhale gases/fumes/dust/mist/vapor/aerosols. Avoid contact with the eyes and skin.

SECTION 9: Physical and chemical properties

Appearance (physical state, color):	Clear, colorless, viscous liquid	**Explosion limit lower**: **Explosion limit upper**:	Lower explosion limit : 2.7 %(V) Upper explosion limit : 16 %(V)
Odor:	Ammonia Like	**Vapor pressure at 20°C**:	13 hPa (10 mmHg) at 20 °C (68 °F)
Odor threshold:	Not determined	**Vapor density**:	2.07 - (Air = 1.0)
pH-value:	11.9 (25% aq soln)	**Relative density**:	0.899 g/mL at 25 °C (77 °F)
Melting/Freezing point:	8.5 ° C (47.3 °F)	**Solubilities**:	Soluble.

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Boiling point/Boiling range:	118 °C (244 °F)	**Partition coefficient (n-octanol/water)**:	log Pow:
Flash point (closed cup):	38 °C (100 °F) - closed cup	**Auto/Self-ignition temperature**:	Not determined
Evaporation rate:	0.91	**Decomposition temperature**:	>120C
Flammability (solid, gaseous):	flammable	**Viscosity**:	a. Kinematic: Not determined b. Dynamic: Not determined
Density at 20°C:	Not determined		

SECTION 10: Stability and reactivity

Reactivity:

Nonreactive under normal conditions.

Chemical stability:

Absorbs carbon dioxide from air to form nonvolatile carbonate.

Possible hazardous reactions:

Flash back possible over considerable distance. Container explosion may occur under fire conditions. Vapors may form explosive mixtures with air.

Conditions to avoid:

Store away from oxidizing agents, strong acids or bases. Exposure to moisture, heat, flames and sparks. Ignition sources, moisture, excess heat, confined spaces. Incompatible Materials.

Incompatible materials:

Strong acids. Strong bases. Oxidizing agents, Phosphorus halides, Aldehydes, Organic halides. copper, copper alloys.

Hazardous decomposition products:

Carbon oxides (CO, CO2). nitrogen oxides (NOx). Oxidizing agents, Phosphorus halides, Aldehydes, Organic halides, copper, copper alloys. Ammonia and/or derivatives.

SECTION 11: Toxicological information

Acute Toxicity:

Dermal:

Dermal LD50 Rabbit 560 mg/kg.

Chronic Toxicity: No additional information.
Skin corrosion/irritation: No additional information.
Serious eye damage/irritation: No additional information.
Respiratory or skin sensitization: No additional information.
Carcinogenicity: No additional information.

Germ cell mutagenicity: No additional information.
Reproductive Toxicity: No additional information.
STOT-single and repeated exposure: No additional information.
Additional toxicological information:

No additional information.

SECTION 12: Ecological information

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Ecotoxicity:

Algae, 72 Hr EC50 Pseudokirchneriella subcapitata: 645 mg/L.
Algae, 96 Hr EC50 Pseudokirchneriella subcapitata: 151 mg/L.
Fish., 96 Hr LC50 Pimephales promelas: 98.6 - 131.6 mg/L [static].
Fish., 96 Hr LC50 Pimephales promelas: 191 - 254 mg/L [flow-through].
Fish., 96 Hr LC50 Pimephales promelas: 115.7 mg/L [semi-static].
Fish., 96 Hr LC50 Poecilia reticulata: 180 - 560 mg/L [semi-static].
Water Flea., 48 Hr EC50 Daphnia magna: 17 mg/L.

Persistence and degradability:

Readily degradable in the environment.

Bioaccumulative potential: No additional information.

Mobility in soil:

Aqueous solution has high mobility in soil. Log Pow= -1.221.

Other adverse effects: No additional information.

SECTION 13: Disposal considerations

Waste disposal recommendations:

Product/containers must not be disposed together with household garbage. Do not allow product to reach sewage system or open water. It is the responsibility of the waste generator to properly characterize all waste materials according to applicable regulatory entities (US 40CFR262.11). Consult federal state/ provincial and local regulations regarding the proper disposal of waste material that may incorporate some amount of this product. Absorb with suitable material and containerize for disposal. Ventilate area of spill. Have fire extinguishing agent available in case of fire. Eliminate all sources of ignition. Use non-sparking equipment.

SECTION 14: Transport information

US DOT

UN Number:
ADR, ADN, DOT, IMDG, IATA 1604

Limited Quantity Exception: None

Bulk:
RQ (if applicable): None
Proper shipping Name: Ethylenediamine.
Hazard Class: 8
Packing Group: II.
Marine Pollutant (if applicable): No additional information.
Comments: None

Non Bulk:
RQ (if applicable): None
Proper shipping Name: Ethylenediamine.
Hazard Class: 8
Packing Group: II.
Marine Pollutant (if applicable): No additional information.
Comments: None

SECTION 15: Regulatory information

United States (USA)

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SARA Section 311/312 (Specific toxic chemical listings):

Acute,Chronic,Fire

SARA Section 313 (Specific toxic chemical listings):

None of the ingredients are listed.

RCRA (hazardous waste code):

None of the ingredients are listed.

TSCA (Toxic Substances Control Act) :

All ingredients are listed.

CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act):

107-15-3 Ethylenediamine 5000 lb.

Proposition 65 (California):

Chemicals known to cause cancer:

None of the ingredients are listed.

Chemicals known to cause reproductive toxicity for females:

None of the ingredients are listed.

Chemicals known to cause reproductive toxicity for males:

None of the ingredients are listed.

Chemicals known to cause developmental toxicity:

None of the ingredients are listed.

Canada

Canadian Domestic Substances List (DSL) :

All ingredients are listed.

SECTION 16: Other information

This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations. Note. The responsibility to provide a safe workplace remains with the user. The user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment. The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by the use of this material. It is the responsibility of the user to comply with all applicable laws and regulations applicable to this material.

NFPA: 3-0-0
HMIS: 3-0-0
GHS Full Text Phrases: None

Abbreviations and Acronyms:

IMDG	International Maritime Code for Dangerous Goods.
PNEC.	Predicted No-Effect Concentration (REACH).
CFR	Code of Federal Regulations (USA)
SARA	Superfund Amendments and Reauthorization Act (USA).
RCRA.	Resource Conservation and Recovery Act (USA).

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TSCA.	Toxic Substances Control Act (USA).
NPRI	National Pollutant Release Inventory (Canada).
DOT	US Department of Transportation.
IATA	International Air Transport Association.
GHS	Globally Harmonized System of Classification and Labelling of Chemicals.
ACGIH	American Conference of Governmental Industrial Hygienists
CAS	Chemical Abstracts Service (division of the American Chemical Society).
NFPA	National Fire Protection Association (USA).
HMIS	Hazardous Materials Identification System (USA).
WHMIS	Workplace Hazardous Materials Information System (Canada).
DNEL	Derived No-Effect Level (REACH).