

SAFETY DATA SHEET

1. Identification

Product identifier: ETHYLENEDIAMINE

Other means of identification

CAS No.: 107-15-3

Recommended use and restriction on use

Recommended use: Not available.

Restrictions on use: Not known.

Manufacturer/Importer/Supplier/Distributor Information

Manufacturer

Company Name: Quality Environmental Containers,
Address: Inc. 607 Industrial Park Road • PO
Box 1160 Beaver, WV 25813

Telephone: Customer Service: 800-255-3950

Fax:
e-mail: info@qecusa.com

Emergency telephone number:

Chemtrec: 800-424-9300

2. Hazard(s) identification

Hazard Classification

Physical Hazards

Flammable liquids Category 3

Health Hazards

Acute toxicity (Oral)	Category 4
Acute toxicity (Dermal)	Category 3
Skin Corrosion/Irritation	Category 1B
Respiratory sensitizer	Category 1
Skin sensitizer	Category 1
Serious Eye Damage/Eye Irritation	Category 1

Environmental Hazards

Chronic hazards to the aquatic environment Category 3

Label Elements

Hazard Symbol:



Signal Word: Danger

Hazard Statement: Flammable liquid and vapor.
Toxic in contact with skin.
Harmful if swallowed.
Causes severe skin burns and eye damage.
Harmful to aquatic life with long lasting effects.

Precautionary Statement

Prevention: Keep away from heat/sparks/open flames/hot surfaces. No smoking. Ground/bond container and receiving equipment. Take precautionary measures against static discharge. Wear protective gloves/protective clothing/eye protection/face protection. Wash hands thoroughly after handling. Do not breathe dust/fume/gas/mist/vapors/spray. Avoid release to the environment.

Response: IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower. Call a POISON CENTER or doctor/physician if you feel unwell. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF INHALED: 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. If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician. If skin irritation or rash occurs: Get medical advice/attention.

Other hazards which do not result in GHS classification: None.

3. Composition/information on ingredients

Substances

Chemical Identity	Common name and synonyms	CAS number	Content in percent (%)*
ETHYLENEDIAMINE		107-15-3	98 - 100%

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

General information: Get medical advice/attention if you feel unwell. Show this safety data sheet to the doctor in attendance.

Ingestion: Rinse mouth. Get medical attention if symptoms occur. Do NOT induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

Inhalation: Move to fresh air. If breathing is difficult, give oxygen. Apply artificial respiration if victim is not breathing Call a physician or poison control center immediately.

Skin Contact: Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention if irritation persists after washing. Wash contaminated clothing before reuse. Destroy or thoroughly clean contaminated shoes.

Eye contact: Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention if irritation persists after washing. In case of irritation from airborne exposure, move to fresh air.

Most important symptoms/effects, acute and delayed

Symptoms: Causes severe skin and eye burns.

Indication of immediate medical attention and special treatment needed

Treatment: Treat symptomatically. Symptoms may be delayed.

5. Fire-fighting measures

General Fire Hazards: Flammable liquid and vapor. In case of fire and/or explosion do not breathe fumes.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable extinguishing media: Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical: During fire, gases hazardous to health may be formed. Product is highly caustic. Product is acidic. Wear appropriate protective gear if spilled during fire fighting.

Special protective equipment and precautions for firefighters

Special fire fighting procedures: Move containers from fire area if you can do so without risk. Use water spray to keep fire-exposed containers cool. Cool containers exposed to flames with water until well after the fire is out.

Special protective equipment for fire-fighters: Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: Keep unauthorized personnel away. Keep upwind. Use personal protective equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. See Section 8 of the MSDS for Personal Protective Equipment.

Methods and material for containment and cleaning up: Neutralize with lime or soda ash. Neutralize spill area and washings with dilute acetic acid. Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Dike far ahead of larger spill for later recovery and disposal.

Notification Procedures: Prevent entry into waterways, sewer, basements or confined areas. Inform authorities if large amounts are involved.

Environmental Precautions: Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

- Precautions for safe handling:** Wear protective gloves/protective clothing/eye protection/face protection. Do not taste or swallow. Do not breathe dust/fume/gas/mist/vapors/spray. Wash hands thoroughly after handling. Use caution when adding this material to water. See Section 8 of the MSDS for Personal Protective Equipment. Avoid contact with eyes. Avoid contact with skin. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting/equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Use personal protective equipment as required. Wash contaminated clothing before reuse.
- Conditions for safe storage, including any incompatibilities:** Keep away from food, drink and animal feeding stuffs. Keep container tightly closed. Store in a cool and well-ventilated place. Store in corrosive resistant container with a resistant inner liner. Store locked up.

8. Exposure controls/personal protection

Control Parameters

Occupational Exposure Limits

Chemical Identity	Type	Exposure Limit Values	Source
ETHYLENEDIAMINE	TWA	10 ppm	US. ACGIH Threshold Limit Values (2011)
	REL	10 ppm 25 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	PEL	10 ppm 25 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	TWA	10 ppm 25 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)

- Appropriate Engineering Controls** No data available.

Individual protection measures, such as personal protective equipment

- General information:** Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. An eye wash and safety shower must be available in the immediate work area.
- Eye/face protection:** Wear safety glasses with side shields (or goggles) and a face shield. Wear a full-face respirator, if needed.
- Skin Protection**
- Hand Protection:** Chemical resistant gloves
- Other:** Wear suitable protective clothing.
- Respiratory Protection:** If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Air-purifying respirator with an appropriate, government approved (where applicable), air-purifying filter, cartridge or canister. Contact health and safety professional or manufacturer for specific information.

Hygiene measures:

Provide eyewash station and safety shower. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Do not get this material in contact with skin. Do not get in eyes.

9. Physical and chemical properties

Appearance

Physical state:	Liquid
Form:	Viscous liquid
Color:	Colorless
Odor:	Ammonia-like odor
Odor threshold:	No data available.
pH:	11.9 (25 °C) 25% solution
Melting point/freezing point:	8.5 °C
Initial boiling point and boiling range:	116 °C
Flash Point:	34 °C
Evaporation rate:	0.91 (butyl acetate=1)
Flammability (solid, gas):	Class IC Flammable Liquid
Upper/lower limit on flammability or explosive limits	
Flammability limit - upper (%):	12 %(V)
Flammability limit - lower (%):	2.5 %(V)
Explosive limit - upper (%):	No data available.
Explosive limit - lower (%):	No data available.
Vapor pressure:	1.60 kPa (25 °C)
Vapor density:	2.07 AIR=1
Relative density:	0.89 (20 °C)
Solubility(ies)	
Solubility in water:	Miscible with water.
Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	-2.04 at pH 13
Auto-ignition temperature:	385 °C
Decomposition temperature:	No data available.
Viscosity:	No data available.

Other information

Molecular weight:	60.1 g/mol (C ₂ H ₈ N ₂)
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10. Stability and reactivity

Reactivity:	No dangerous reaction known under conditions of normal use.
Chemical Stability:	Material is stable under normal conditions.
Possibility of Hazardous Reactions:	Hazardous polymerization does not occur.
Conditions to Avoid:	Heat, sparks, flames. Contact with incompatible materials.
Incompatible Materials:	Strong oxidizing agents. Metals. Acids. Chlorinated compounds.
Hazardous Decomposition Products:	Fire or excessive heat may produce hazardous decomposition products. Nitrogen Oxides Oxides of Carbon.

11. Toxicological information**Information on likely routes of exposure**

Ingestion:	Harmful if swallowed.
Inhalation:	Harmful if inhaled.
Skin Contact:	Toxic in contact with skin. Causes severe skin burns.
Eye contact:	Causes serious eye damage.

Information on toxicological effects**Acute toxicity (list all possible routes of exposure)**

Oral	
Product:	LD 50 (Rat): 500 mg/kg
Dermal	
Product:	LD 50 (Rabbit): 730 mg/kg
Inhalation	
Product:	No data available.
Repeated Dose Toxicity	
Product:	No data available.

Skin Corrosion/Irritation

Product:	Causes severe skin burns.
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Serious Eye Damage/Eye Irritation

Product:	Causes serious eye damage.
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Respiratory or Skin Sensitization

Product:	May cause an allergic skin reaction. May cause allergy or asthma symptoms or breathing difficulties if inhaled.
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Carcinogenicity

Product:	This substance has no evidence of carcinogenic properties.
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IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:

No carcinogenic components identified

US. National Toxicology Program (NTP) Report on Carcinogens:

No carcinogenic components identified

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):

No carcinogenic components identified

Germ Cell Mutagenicity

In vitro	
Product:	No mutagenic components identified
In vivo	
Product:	No mutagenic components identified

Reproductive Toxicity

Product:	No components toxic to reproduction
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Specific Target Organ Toxicity - Single Exposure

Product:	No data available.
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Specific Target Organ Toxicity - Repeated Exposure

Product: No data available.

Aspiration Hazard

Product: Not classified

Other Effects: None known.

12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish

Product: No data available.

Specified substance(s):

ETHYLENEDIAMINE LC 50 (Fathead minnow (Pimephales promelas), 96 h): 98.6 - 131.6 mg/l Mortality
LC 50 (Carp (Leuciscus idus melanotus), 48 h): 405 mg/l Mortality

Aquatic Invertebrates

Product: No data available.

Specified substance(s):

ETHYLENEDIAMINE LC 50 (Brine shrimp (Artemia salina), 24 h): 14 mg/l Mortality
LC 50 (Water flea (Daphnia magna), 24 h): 16 mg/l Mortality

Chronic hazards to the aquatic environment:

Fish

Product: No data available.

Aquatic Invertebrates

Product: No data available.

Toxicity to Aquatic Plants

Product: No data available.

Persistence and Degradability

Biodegradation

Product: There are no data on the degradability of this product.

BOD/COD Ratio

Product: No data available.

Bioaccumulative Potential

Bioconcentration Factor (BCF)

Product: No data available on bioaccumulation.

Partition Coefficient n-octanol / water (log Kow)

Product: Log Kow: -2.04 at pH 13

Mobility in Soil: No data available.

Other Adverse Effects: Harmful to aquatic life with long lasting effects.

13. Disposal considerations

Disposal instructions:	Discharge, treatment, or disposal may be subject to national, state, or local laws. Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.
Contaminated Packaging:	Since emptied containers retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

UN Number:	UN 1604
UN Proper Shipping Name:	Ethylenediamine
Transport Hazard Class(es)	
Class(es):	8, 3
Label(s):	8, 3
Packing Group:	II
Marine Pollutant:	No

IMDG

UN Number:	UN 1604
UN Proper Shipping Name:	ETHYLENEDIAMINE
Transport Hazard Class(es)	
Class(es):	8, 3
Label(s):	8, 3
EmS No.:	F-E, S-C
Packing Group:	II
Marine Pollutant:	No

IATA

UN Number:	UN 1604
Proper Shipping Name:	Ethylenediamine
Transport Hazard Class(es):	
Class(es):	8, 3
Label(s):	8, 3
Marine Pollutant:	No
Packing Group:	II

15. Regulatory information

US Federal Regulations

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4):

ETHYLENEDIAMINE Reportable quantity: 5000 lbs.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

☒ Acute (Immediate) ☒ Chronic (Delayed) ☒ Fire ☐ Reactive ☐ Pressure Generating

SARA 302 Extremely Hazardous Substance

Chemical Identity	RQ	Threshold Planning Quantity
ETHYLENEDIAMINE	5000 lbs.	10000 lbs.

SARA 304 Emergency Release Notification

Chemical Identity	RQ
ETHYLENEDIAMINE	5000 lbs.

SARA 311/312 Hazardous Chemical

Chemical Identity	Threshold Planning Quantity
ETHYLENEDIAMINE	500lbs

SARA 313 (TRI Reporting)

None present or none present in regulated quantities.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)

ETHYLENEDIAMINE Reportable quantity: 5000 lbs.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):

ETHYLENEDIAMINE Threshold quantity: 20000 lbs

US State Regulations

US. California Proposition 65

No ingredient regulated by CA Prop 65 present.

US. New Jersey Worker and Community Right-to-Know Act

ETHYLENEDIAMINE Listed

US. Massachusetts RTK - Substance List

ETHYLENEDIAMINE Listed

US. Pennsylvania RTK - Hazardous Substances

ETHYLENEDIAMINE Listed

US. Rhode Island RTK

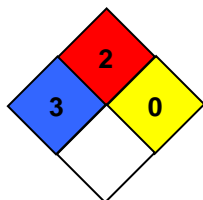
ETHYLENEDIAMINE Listed

Inventory Status:

Australia AICS:	On or in compliance with the inventory
Canada DSL Inventory List:	On or in compliance with the inventory
EINECS, ELINCS or NLP:	On or in compliance with the inventory
Japan (ENCS) List:	On or in compliance with the inventory
China Inv. Existing Chemical Substances:	On or in compliance with the inventory
Korea Existing Chemicals Inv. (KECI):	On or in compliance with the inventory
Canada NDSL Inventory:	Not in compliance with the inventory.
Philippines PICCS:	On or in compliance with the inventory
US TSCA Inventory:	On or in compliance with the inventory
New Zealand Inventory of Chemicals:	On or in compliance with the inventory
Japan ISHL Listing:	On or in compliance with the inventory
Japan Pharmacopoeia Listing:	Not in compliance with the inventory.

16. Other information, including date of preparation or last revision

NFPA Hazard ID



Red	Flammability
Blue	Health
Yellow	Reactivity
White	Special hazard.

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe

Issue Date: 10-07-2014

Revision Date: No data available.

Version #: 1.0

Further Information: No data available.

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