

Safety Data Sheet

acc. to OSHA HCS

Printing date 11/07/2019

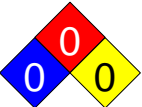
Reviewed on 11/07/2019

1 Identification

- **Product identifier**
- **Trade name:** Ethylenediamine
Dihydrochloride 0.2 Molar
- **Article number:** VUL248
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Aqua Solutions, Inc.
6913 Highway 225
DEER PARK, TX 77536
USA
800-256-2586
- **Information department:**
Technical Coordinator
Sherman Nelson sherman@aquasolutions.org
- **Emergency telephone number:**
Chemtrec: 800-424-9300
Canutec: 613-996-6666



2 Hazard(s) identification

- **Classification of the substance or mixture**
The product is not classified, according to the Globally Harmonized System (GHS).
 - **Label elements**
 - **GHS label elements** Not Applicable
 - **Hazard pictograms** Not Applicable
 - **Signal word** Not Applicable
 - **Hazard statements** Not Applicable
 - **Precautionary statements**
Dispose of contents/container in accordance with local/regional/national/international regulations.
 - **Classification system:**
 - **NFPA ratings (scale 0 - 4)**
- 

Health = 0

Fire = 0

Reactivity = 0
- **HMIS-ratings (scale 0 - 4)**
- | | |
|------------|---|
| HEALTH | 2 |
| FIRE | 0 |
| REACTIVITY | 0 |

Health = 2

Fire = 0

Reactivity = 0
- **Other hazards**
 - **Results of PBT and vPvB assessment**
 - **PBT:** Not applicable.
 - **vPvB:** Not applicable.

3 Composition/information on ingredients

- **Chemical characterization:** Mixtures
- **Description:** Mixture of the substances listed below with nonhazardous additions.

(Contd. on page 2)

Safety Data Sheet

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Reviewed on 11/07/2019

Trade name: *Ethylenediamine*
Dihydrochloride 0.2 Molar

(Contd. of page 1)

· **Dangerous components:**

| | | |
|---------------|---------------------------------|-------|
| CAS: 333-18-6 | Ethylenediamine Dihydrochloride | 2.66% |
|---------------|---------------------------------|-------|

· **Table of Nonhazardous Ingredients**

| | | |
|----------------|-------|--------|
| CAS: 7732-18-5 | Water | 97.34% |
|----------------|-------|--------|

4 First-aid measures

- **Description of first aid measures**
- **General information:** No special measures required.
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Generally the product does not irritate the skin.
- **After eye contact:** Rinse opened eye for several minutes under running water.
- **After swallowing:** If symptoms persist consult doctor.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** No special measures required.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures** Not required.
- **Environmental precautions:**
Dilute with plenty of water.
Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to item 13.
- **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.
- **Protective Action Criteria for Chemicals**

· **PAC-1:**

| | | |
|---------------|---------------------------------|-----------------------|
| CAS: 333-18-6 | Ethylenediamine Dihydrochloride | 2.7 mg/m ³ |
|---------------|---------------------------------|-----------------------|

· **PAC-2:**

| | | |
|---------------|---------------------------------|----------------------|
| CAS: 333-18-6 | Ethylenediamine Dihydrochloride | 29 mg/m ³ |
|---------------|---------------------------------|----------------------|

(Contd. on page 3)

Safety Data Sheet

acc. to OSHA HCS

Printing date 11/07/2019

Reviewed on 11/07/2019

Trade name: *Ethylenediamine
Dihydrochloride 0.2 Molar*

(Contd. of page 2)

· **PAC-3:**CAS: 333-18-6 *Ethylenediamine Dihydrochloride*180 mg/m³

7 Handling and storage

- **Handling:**
- **Precautions for safe handling** *No special measures required.*
- **Information about protection against explosions and fires:** *No special measures required.*
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** *No special requirements.*
- **Information about storage in one common storage facility:** *Not required.*
- **Further information about storage conditions:** *None.*
- **Specific end use(s)** *No further relevant information available.*

8 Exposure controls/personal protection

- **Additional information about design of technical systems:** *No further data; see item 7.*
- **Control parameters**
- **Components with limit values that require monitoring at the workplace:**
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- **Additional information:** *The lists that were valid during the creation were used as basis.*
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
The usual precautionary measures for handling chemicals should be followed.
- **Breathing equipment:** *Not required.*
- **Protection of hands:**
*The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation*
- **Material of gloves**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
- **Penetration time of glove material**
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:** *Goggles recommended during refilling.*
- **Body protection:** *Protective work clothing*

US

(Contd. on page 4)

Safety Data Sheet

acc. to OSHA HCS

Printing date 11/07/2019

Reviewed on 11/07/2019

Trade name: *Ethylenediamine*
Dihydrochloride 0.2 Molar

(Contd. of page 3)

9 Physical and chemical properties

| | |
|--|--|
| · <i>Information on basic physical and chemical properties</i> | |
| · <i>General Information</i> | |
| · <i>Appearance:</i> | |
| <i>Form:</i> | <i>Liquid</i> |
| <i>Color:</i> | <i>Light yellow</i> |
| · <i>Odor:</i> | <i>Odorless</i> |
| · <i>Odor threshold:</i> | <i>Not determined.</i> |
| · <i>pH-value:</i> | <i>Not determined.</i> |
| · <i>Change in condition</i> | |
| <i>Melting point/Melting range:</i> | <i>Undetermined.</i> |
| <i>Boiling point/Boiling range:</i> | <i>100 °C (212 °F)</i> |
| · <i>Flash point:</i> | <i>Not applicable.</i> |
| · <i>Flammability (solid, gaseous):</i> | <i>Not applicable.</i> |
| · <i>Decomposition temperature:</i> | <i>Not determined.</i> |
| · <i>Auto igniting:</i> | <i>Product is not selfigniting.</i> |
| · <i>Danger of explosion:</i> | <i>Product does not present an explosion hazard.</i> |
| · <i>Explosion limits:</i> | |
| <i>Lower:</i> | <i>Not determined.</i> |
| <i>Upper:</i> | <i>Not determined.</i> |
| · <i>Vapor pressure at 20 °C (68 °F):</i> | <i>23 hPa (17.3 mm Hg)</i> |
| · <i>Density at 20 °C (68 °F):</i> | <i>1 g/cm³ (8.345 lbs/gal)</i> |
| · <i>Relative density</i> | <i>Not determined.</i> |
| · <i>Vapor density</i> | <i>Not determined.</i> |
| · <i>Evaporation rate</i> | <i>Not determined.</i> |
| · <i>Solubility in / Miscibility with</i> | |
| <i>Water:</i> | <i>Fully miscible.</i> |
| · <i>Partition coefficient (n-octanol/water):</i> | <i>Not determined.</i> |
| · <i>Viscosity:</i> | |
| <i>Dynamic:</i> | <i>Not determined.</i> |
| <i>Kinematic:</i> | <i>Not determined.</i> |
| · <i>Solvent content:</i> | |
| <i>Water:</i> | <i>97.3 %</i> |
| <i>VOC content:</i> | <i>0.00 %</i> |
| | <i>0.0 g/l / 0.00 lb/gal</i> |
| <i>Solids content:</i> | <i>2.7 %</i> |
| · <i>Other information</i> | <i>No further relevant information available.</i> |

10 Stability and reactivity

- *Reactivity* No further relevant information available.
- *Chemical stability*
- *Thermal decomposition / conditions to be avoided:* No decomposition if used according to specifications.

(Contd. on page 5)

Safety Data Sheet

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Reviewed on 11/07/2019

Trade name: Ethylenediamine
Dihydrochloride 0.2 Molar

(Contd. of page 4)

- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

- **LD/LC50 values that are relevant for classification:**

ATE (Acute Toxicity Estimate)

| | | |
|------------|---------|----------------------|
| Oral | LD50 | 60,893 mg/kg (mouse) |
| Dermal | LD50 | 11,276 mg/kg |
| Inhalative | LC50/4h | 413 mg/l |

- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**

The product is not subject to classification according to internally approved calculation methods for preparations:

When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

- **Carcinogenic categories**

- **IARC (International Agency for Research on Cancer)**

None of the ingredients is listed.

- **NTP (National Toxicology Program)**

None of the ingredients is listed.

- **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**

- **General notes:**

Water hazard class 1 (Self-assessment): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.
- **vPvB:** Not applicable.

(Contd. on page 6)

Safety Data Sheet

acc. to OSHA HCS

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Reviewed on 11/07/2019

Trade name: *Ethylenediamine
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(Contd. of page 5)

· **Other adverse effects** *No further relevant information available.*

13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:** *Smaller quantities can be disposed of with household waste.*
- **Uncleaned packagings:**
- **Recommendation:** *Disposal must be made according to official regulations.*
- **Recommended cleansing agent:** *Water, if necessary with cleansing agents.*

14 Transport information

- | | |
|--|------------------------|
| · UN-Number | |
| · DOT, ADN, IMDG, IATA | <i>Not regulated</i> |
| · UN proper shipping name | |
| · DOT, ADN, IATA | <i>Not regulated</i> |
| · IMDG | <i>Not Regulated</i> |
| | <i>Not regulated</i> |
| · Transport hazard class(es) | |
| · DOT, ADN, IMDG, IATA | |
| · Class | <i>Not regulated</i> |
| · Packing group | |
| · DOT, IMDG, IATA | <i>Not regulated</i> |
| · Environmental hazards: | |
| · Marine pollutant: | <i>No</i> |
| · Special precautions for user | <i>Not applicable.</i> |
| · Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code | <i>Not applicable.</i> |
| · UN "Model Regulation": | <i>Not regulated</i> |

15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Sara**

· **Section 355 (extremely hazardous substances):**

None of the ingredients is listed.

· **Section 313 (Specific toxic chemical listings):**

None of the ingredients is listed.

· **TSCA (Toxic Substances Control Act):**

Ethylenediamine Dihydrochloride

ACTIVE

Water

ACTIVE

(Contd. on page 7)

Safety Data Sheet

acc. to OSHA HCS

Printing date 11/07/2019

Reviewed on 11/07/2019

Trade name: *Ethylenediamine
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(Contd. of page 6)

· **Hazardous Air Pollutants**

None of the ingredients is listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**

None of the ingredients is listed.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

· **TLV (Threshold Limit Value established by ACGIH)**

None of the ingredients is listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

· **GHS label elements** Not Applicable

· **Hazard pictograms** Not Applicable

· **Signal word** Not Applicable

· **Hazard statements** Not Applicable

· **Precautionary statements**

Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Department issuing SDS:** Environment protection department.

· **Contact:**

· **Date of preparation / last revision**

Revision 0.1, 11-01-2019: reviewed SDS. STN

Creation date for SDS 10-27-2014. STN

11/07/2019 / -

· **Abbreviations and acronyms:**

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

(Contd. on page 8)

Safety Data Sheet
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Trade name: Ethylenediamine
Dihydrochloride 0.2 Molar

(Contd. of page 7)

vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit

US