

## MATERIAL SAFETY DATA SHEET

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Version 1.13

## Section 1 - Product and Company Information

Product Name ETHYLENEDIAMINETETRAACETIC ACID, 99.995%  
Product Number 431788  
Brand ALDRICH

Company Sigma-Aldrich  
Address 3050 Spruce Street  
SAINT LOUIS MO 63103 US

Technical Phone: 800-325-5832  
Fax: 800-325-5052  
Emergency Phone: 314-776-6555

## Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313 No
ETHYLENEDIAMINETETRAACETIC ACID	60-00-4	

Formula C10H16N2O8  
Synonyms Acide ethylenediaminetetracetique (French) \*  
Celon A \* Celon ATH \* Cheelox \* Cheelox BF acid \*  
Chemcolox 340 \* Clewat TAA \* Complexon II \*  
3,6-Diazaoctanedioic acid, 3,6-bis(carboxymethyl)  
\* Edathamil \* Edetic acid \* EDTA \* EDTA  
(chelating agent) \* EDTA acid \* Endrate \*  
N,N'-1,2-Ethanediybis(N-(carboxymethyl)glycine)  
\* Ethylenediaminetetraacetate \*  
Ethylenediaminetetraacetic acid \*  
Ethylenediamine-N,N,N',N'-tetraacetic acid \*  
Ethylenedinitrilotetraacetic acid \* Gluma  
cleanser \* Glycine,  
N,N'-1,2-ethanediybis(N-(carboxymethyl)- (9CI) \*  
Hamp-ene acid \* Havidote \* ICRF 185 \* Komplexon  
II \* Kyselina ethylenidiamintetraoctova (Czech) \*  
Metaquest A \* Nervanaid B acid \* Nullapon B acid  
\* Nullapon BF acid \* Perma kleer 50 acid \*  
Questex 4H \* SEQ 100 \* Sequestrene AA \*  
Sequestric acid \* Sequestrol \* Tetrine acid \*  
Titriplex \* Trilon BS \* Trilon BW \* Versene acid  
\* Vinkeil 100 \* Warkeelate acid \* YD 30

RTECS Number: AH4025000

## Section 3 - Hazards Identification

## EMERGENCY OVERVIEW

Irritant.

Irritating to eyes. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

## HMIS RATING

HEALTH: 2

FLAMMABILITY: 0

REACTIVITY: 0

NFPA RATING  
HEALTH: 2  
FLAMMABILITY: 0  
REACTIVITY: 0

For additional information on toxicity, please refer to Section 11.

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#### Section 4 - First Aid Measures

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##### ORAL EXPOSURE

If swallowed, wash out mouth with water provided person is conscious. Call a physician.

##### INHALATION EXPOSURE

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

##### DERMAL EXPOSURE

In case of contact, immediately wash skin with soap and copious amounts of water.

##### EYE EXPOSURE

In case of contact, immediately flush eyes with copious amounts of water for at least 15 minutes.

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#### Section 5 - Fire Fighting Measures

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##### FLASH POINT

N/A

##### AUTOIGNITION TEMP

N/A

##### FLAMMABILITY

N/A

##### EXTINGUISHING MEDIA

Suitable: Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

##### FIREFIGHTING

Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.  
Specific Hazard(s): Emits toxic fumes under fire conditions.

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#### Section 6 - Accidental Release Measures

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##### PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves.

##### METHODS FOR CLEANING UP

Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

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#### Section 7 - Handling and Storage

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##### HANDLING

User Exposure: Do not breathe dust. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

STORAGE

Suitable: Keep tightly closed.

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Section 8 - Exposure Controls / PPE

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ENGINEERING CONTROLS

Safety shower and eye bath. Mechanical exhaust required.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory: Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Where risk assessment shows air-purifying respirators are appropriate use a dust mask type N95 (US) or type P1 (EN 143) respirator.

Hand: Compatible chemical-resistant gloves.

Eye: Chemical safety goggles.

GENERAL HYGIENE MEASURES

Wash thoroughly after handling.

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Section 9 - Physical/Chemical Properties

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Appearance	Physical State: Solid Color: White Form: Powder	
Property	Value	At Temperature or Pressure
Molecular Weight	292.24 AMU	
pH	2.5	23 °C Concentration: 10 g/l
BP/BP Range	N/A	
MP/MP Range	250 °C	
Freezing Point	N/A	
Vapor Pressure	N/A	
Vapor Density		20 °C < 0.017 mmHg
Saturated Vapor Conc.	N/A	
SG/Density	0.86 g/cm3	20 °C
Bulk Density	N/A	
Odor Threshold	N/A	
Volatile%	N/A	
VOC Content	N/A	
Water Content	N/A	
Solvent Content	N/A	
Evaporation Rate	N/A	
Viscosity	N/A	
Surface Tension	N/A	
Partition Coefficient	Log Kow: - 3.340	
Decomposition Temp.	N/A	
Flash Point	N/A	
Explosion Limits	N/A	
Flammability	N/A	
Autoignition Temp	N/A	
Refractive Index	N/A	
Optical Rotation	N/A	
Miscellaneous Data	N/A	
Solubility	Solvent: complete, colorless 0.1M in NaOH 1M, 20°C	

N/A = not available

## Section 10 - Stability and Reactivity

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### STABILITY

Stable: Stable.

Materials to Avoid: Strong oxidizing agents.

### HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide, Nitrogen oxides.

### HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

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## Section 11 - Toxicological Information

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### ROUTE OF EXPOSURE

Skin Contact: May cause skin irritation.

Skin Absorption: May be harmful if absorbed through the skin.

Eye Contact: Causes eye irritation.

Inhalation: Material may be irritating to mucous membranes and upper respiratory tract. May be harmful if inhaled.

Ingestion: May be harmful if swallowed.

### SENSITIZATION

Sensitization: Will not occur

### SIGNS AND SYMPTOMS OF EXPOSURE

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

### TOXICITY DATA

Oral

Rat

4,000 mg/kg

LD50

Intraperitoneal

Rat

397 MG/KG

LD50

Remarks: Behavioral:Convulsions or effect on seizure threshold.

Oral

Mouse

30 mg/kg

LD50

Intraperitoneal

Mouse

250 MG/KG

LD50

Intravenous

Mouse

28500 UG/KG

LD50

### IRRITATION DATA

Skin

Rabbit

Remarks: No irritation effect

Eyes

Rabbit  
Remarks: Moderate irritation effect

#### CHRONIC EXPOSURE - TERATOGEN

Species: Rat  
Dose: 7632 MG/KG  
Route of Application: Oral  
Exposure Time: (7-14D PREG)  
Result: Specific Developmental Abnormalities: Eye, ear. Specific Developmental Abnormalities: Craniofacial (including nose and tongue). Specific Developmental Abnormalities: Musculoskeletal system.

Species: Rat  
Dose: 7632 MG/KG  
Route of Application: Oral  
Exposure Time: (7-14D PREG)  
Result: Specific Developmental Abnormalities: Urogenital system. Specific Developmental Abnormalities: Respiratory system. Specific Developmental Abnormalities: Cardiovascular (circulatory) system.

#### CHRONIC EXPOSURE - MUTAGEN

Species: Rat  
Dose: 600 UMOL/L  
Cell Type: Other cell types  
Mutation test: DNA inhibition

Species: Mouse  
Route: Intraperitoneal  
Dose: 186 MG/KG  
Mutation test: Micronucleus test

Species: Mouse  
Route: Oral  
Dose: 15 MG/KG  
Mutation test: Micronucleus test

Species: Mouse  
Dose: 40500 UMOL/L  
Cell Type: lymphocyte  
Mutation test: DNA damage

Species: Mouse  
Route: Intraperitoneal  
Dose: 50 MMOL/L  
Mutation test: Cytogenetic analysis

Species: Mouse  
Dose: 25200 UMOL/L  
Cell Type: lymphocyte  
Mutation test: Mutation in mammalian somatic cells.

Species: Hamster  
Dose: 100 UMOL/L  
Cell Type: Embryo  
Mutation test: Unscheduled DNA synthesis

Species: Hamster  
Dose: 500 UG/L

Cell Type: fibroblast  
Mutation test: DNA inhibition

Species: Hamster  
Dose: 30 UMOL/L  
Cell Type: Embryo  
Mutation test: Sister chromatid exchange

Species: Rabbit  
Dose: 250 UMOL/L  
Cell Type: kidney  
Mutation test: DNA inhibition

#### CHRONIC EXPOSURE - REPRODUCTIVE HAZARD

Species: Rat  
Dose: 7632 MG/KG  
Route of Application: Oral  
Exposure Time: (7-14D PREG)  
Result: Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).

Species: Rat  
Dose: 3 GM/KG  
Route of Application: Subcutaneous  
Exposure Time: (7-14D PREG)  
Result: Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants). Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).

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#### Section 12 - Ecological Information

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##### ACUTE ECOTOXICITY TESTS

Test Type: EC50 Daphnia  
Species: Daphnia magna  
Time: 48 h  
Value: 113 mg/l

Test Type: LC50 Fish  
Species: Lepomis macrochirus (Bluegill)  
Time: 96 h  
Value: 34.0 - 62.0 mg/l

Test Type: LC50 Fish  
Species: Pimephales promelas (Fathead minnow)  
Time: 96 h  
Value: 44.2 - 76.5 mg/l

##### ADDITIONAL RESULTS/DATA FROM RELEVANT SCIENTIFIC EXPERIMENTS

Avoid contamination of the environment May be harmful to aquatic organisms due to the shift of the pH.

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#### Section 13 - Disposal Considerations

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##### APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION

Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible

solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

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## Section 14 - Transport Information

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### DOT

Proper Shipping Name: Environmentally hazardous substances, solid, n.o.s.  
UN#: 3077  
Class: 9  
Packing Group: Packing Group III  
Hazard Label: Class 9  
PIH: Not PIH

### IATA

Non-Hazardous for Air Transport: Non-hazardous for air transport.

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## Section 15 - Regulatory Information

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### EU ADDITIONAL CLASSIFICATION

Symbol of Danger: Xi  
Indication of Danger: Irritant.  
R: 36-52/53  
Risk Statements: Irritating to eyes. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
S: 26-61  
Safety Statements: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Avoid release to the environment. Refer to special instructions/safety data sheets.

### US CLASSIFICATION AND LABEL TEXT

Indication of Danger: Irritant.  
Risk Statements: Irritating to eyes. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
Safety Statements: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Avoid release to the environment. Refer to special instructions/safety data sheets.

### UNITED STATES REGULATORY INFORMATION

SARA LISTED: No  
TSCA INVENTORY ITEM: Yes

### CANADA REGULATORY INFORMATION

WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.  
DSL: Yes  
NDSL: No

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## Section 16 - Other Information

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### DISCLAIMER

For R&D use only. Not for drug, household or other uses.

### WARRANTY

The above information is believed to be correct but does not

purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2007 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.