Ethylenediaminetetraacetic acid SDS/MSDS (Safety Data Sheet)

1. PRODUCT AND COMPANY IDENTIFICATION

Product identifier

* Product Name: Ethylenediaminetetraacetic acid
* Catalog Number: S6350
* CAS Number: 60-00-4
* IUPAC Name: Glycine, N,N'-1,2-ethanediylbis[N-(carboxymethyl)-

Relevant identified uses and uses advised against

* Identified uses: For research and development use only; laboratory chemicals; manufacture of substances.
* Uses advised against: Not for pharmaceutical, household, or other unapproved uses.

Details of the supplier

* Company: Selleck Chemicals
* TollFree: +1 877 796-6397
* Tel: +1 832 582-8158
* Fax: +1 832 582-8590

Emergency telephone number

* Emergency phone #: +1 832 582-8158

2. HAZARDS IDENTIFICATION

2.1 GHS classification in accordance with 29 CFR 1910 (OSHA HCS):

Acute toxicity (oral): Category 4. H302
Acute toxicity (oral): Category 5. H303
Acute toxicity (dermal): Category 4. H312
Skin irritation: Category 2. H315
Serious eye irritation: Category 2. H319
Eye irritation: Category 2. H320
Acute toxicity (inhalation): Category 4. H332
Specific target organ toxicity (single exposure): Category 3. H335
Reproductive toxicity: Category 2. H361
Specific target organ toxicity (repeated exposure): Category 1. H372
Specific target organ toxicity (repeated exposure): Category 2. H373
Acute aquatic toxicity: Category 3. H402
Chronic aquatic toxicity: Category 3. H412

2.2 GHS Label elements, including precautionary statements

Hazard Pictogram(s)



Signal Word	Danger
Hazard statement(s)	H302: Harmful if swallowed H303: May be harmful if swallowed H312: Harmful in contact with skin H315: Causes skin irritation H319: Causes serious eye irritation H320: Causes eye irritation H332: Harmful if inhaled H335: May cause respiratory irritation H361: Suspected of damaging fertility or the unborn child H372: Causes damage to organs through prolonged or repeated exposure H373: May causes damage to organs through prolonged or repeated exposure H402: Harmful to aquatic life H412: Harmful to aquatic life with long lasting effects
Precautionary statement(s)	None.
Prevention	P203: Obtain, read and follow all safety instructions before use. P260: Do not breathe dust/fume/gas/mist/vapors/spray. P261: Avoid breathing dust/fume/gas/mist/vapors/spray. P264: Wash hands thoroughly after handling. P264+P265: Wash hands thoroughly after handling. Do not touch eyes. P270: Do not eat, drink or smoke when using this product. P271: Use only outdoors or in a well-ventilated area. P273: Avoid release to the environment. P280: Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
Response	P301+P317: IF SWALLOWED: Get medical help. P302+P352: IF ON SKIN: wash with plenty of water. P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing. P305+P351: IF IN EYES: Rinse cautiously with water for several minutes. P317: Get emergency medical help. P318: if exposed or concerned, get medical advice. P319: Get medical help if you feel unwell. P321: Specific treatment (see information on this label and safety datasheet)). P330: Rinse mouth. P332+P317: If skin irritation occurs: Get medical help. P337+P317: If eye irritation persists: Get medical help. P338: Remove contact lenses, if present and easy to do. Continue rinsing. P362+P364: Take off contaminated clothing and wash it before reuse.
Storage	P403+P233: Store in a well-ventilated place. Keep container tightly closed. P405: Store locked up.
Disposal	P501: P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Other hazards

None.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Product name: Ethylenediaminetetraacetic acid

CAS Number: 60-00-4

PubChem CID: 6049

Molecular formula: C10H16N2O8

Molecular weight: 292.24 g/mol

IUPAC name: 2-[2-[bis(carboxymethyl)amino]ethyl-(carboxymethyl)amino]acetic acid

3.2 Mixtures

Not applicable (pure substance).

4. FIRST-AID MEASURES

4.1 Description of first aid measures

Inhalation: Fresh air, rest.

Skin contact: Rinse skin with plenty of water or shower.

Eye contact: Rinse with plenty of water (remove contact lenses if easily possible).

Ingestion: Rinse mouth. Give one or two glasses of water to drink.

4.2 Most important symptoms and effects, both acute and delayed

See Section 11 (Toxicological Information).

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically. Contact a poison control center or physician for severe exposure.

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable: Water spray, dry chemical, carbon dioxide (CO2), alcohol-resistant foam.

Unsuitable: None known.

5.2 Specific hazards arising from the substance or mixture

Use water spray, foam, carbon dioxide, powder.

This chemical is a combustible solid. It does not easily ignite. Use dry chemical, carbon dioxide, water spray, or alcohol or polymer foam extinguishers. ...

If material on fire or involved in fire: Do not extinguish fire unless flow can be stopped. Use water in flooding quantities as fog. Solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water. Apply water from as far a distance as possible. Use "alcohol" foam, dry chemical or carbon dioxide.

Water spray, dry chemical, carbon dioxide, or foam as appropriate for surrounding fire and materials.

This material is assumed to be combustible. As with all dry powders, it is advisable to ground mechanical equipment in contact with dry material to dissipate the potential buildup of static electricity.

5.3 Advice for firefighters

Wear self-contained breathing apparatus (SCBA) and full protective clothing.

Fight fire from upwind. Cool containers with water spray until fire is extinguished.

Flash point: Flash point is> 100 °C,

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear appropriate personal protective equipment (see Section 8).

Avoid breathing dust/vapor. Ensure adequate ventilation.

Evacuate personnel to safe areas. Keep people away from and upwind of spill.

6.2 Environmental precautions

Prevent product from entering drains, waterways, or soil.

Contain spill with inert absorbent material.

6.3 Methods and materials for containment and cleaning up

Personal protection: particulate filter respirator adapted to the airborne concentration of the substance. Sweep spilled substance into covered non-metallic containers. Carefully collect remainder. Then store and dispose of according to local regulations.

Environmental considerations: Land spill: Dig a pit, pond, lagoon, holding area to contain liquid or solid material. /SRP: If time permits, pits, ponds, lagoons, soak holes, or holding areas should be sealed with an impermeable flexible membrane liner./ Dike surface flow using soil, sand bags, foamed polyurethane, or foamed concrete. Absorb bulk liquid with fly ash or cement powder. Neutralize with sodium bisulfate ($NaHSO_4$).

Environmental considerations: Air spill: Apply water spray or mist to knock down vapors. Vapor knockdown water is corrosive or toxic and should be diked for containment.

Environmental considerations: Water spill: Use natural barriers or oil spill control booms to limit spill travel. Use surface active agent (e.g., detergent, soaps, alcohols), if approved by EPA. Inject "universal" gelling agent to solidify encircled spill and increase effectiveness of booms. Add sodium bisulfate ($NaHSO_4$). If dissolved, in region of 10 ppm or greater concentration, apply activated carbon at ten times the spilled amount. Use mechanical dredges or lifts to remove immobilized masses of pollutants and precipitates.

Wear approved respiratory protection, chemically compatible gloves, and protective clothing. Wipe up spillage or collect spillage using a high-efficiency vacuum cleaner. Avoid breathing dust. Place spillage in appropriately labeled container for disposal. Wash spill site.

SRP: The most favorable course of action is to use an alternative chemical product with less inherent propensity for occupational exposure or environmental contamination. Recycle any unused portion of the material for its approved use or return it to the manufacturer or supplier. Ultimate disposal of the chemical must consider: the material's impact on air quality; potential migration in soil or water; effects on animal, aquatic, and plant life; and conformance with environmental and public health regulations.

SRP: The most favorable course of action is to use an alternative chemical product with less inherent propensity for occupational harm/injury/toxicity or environmental contamination. Recycle any unused portion of the material for its approved use or return it to the manufacturer or supplier. Ultimate disposal of the chemical must consider: the material's impact on air quality; potential migration in soil or water; effects on animal and plant life; and conformance with environmental and public health regulations.

SRP: The scientific literature for the use of contact lenses by industrial workers is inconsistent. The benefits or detrimental effects of wearing contact lenses depend not only upon the substance, but also on factors including the form of the substance, characteristics and duration of the exposure, the uses of other eye protection equipment, and the hygiene of the lenses. However, there may be individual substances whose irritating or corrosive properties are such that the wearing of contact lenses would be harmful to the eye. In those specific cases, contact lenses should not be worn. In any event, the usual eye protection equipment should be worn even when contact lenses are in place.

Personnel protection: Avoid breathing vapors. Keep upwind. Avoid bodily contact with the material. ... Do not handle broken packages unless wearing appropriate personal protective equipment. Wash away any material which may have contacted the body with copious amounts of water or soap and water. ... If contact with the material anticipated, wear appropriate chemical protective clothing.

If material not on fire and not involved in fire: Keep sparks, flames, and other sources of ignition away. Keep material out of water sources and sewers. build dikes to contain flow as necessary.

As with all fires, evacuate personnel to a safe area. Firefighters should use self-contained breathing equipment and protective clothing.

As a general rule, when handling USP Reference Standards avoid all contact and inhalation of dust, mists, and/or vapors associated with the material. Wash thoroughly after handling.

/Wear/ chemically compatible gloves /and/ safety glasses or goggles. Protect exposed skin.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Separated from strong oxidants, metals and food and feedstuffs.

Chelating agents, by their very nature, tend to be corrosive to metals such as copper, zinc, and iron. The alkaline salts corrode aluminum severely, and contact with these salts should be avoided. Stainless steel and most polymers or coatings that are able to withstand dilute alkali are acceptable as construction materials. Solid chelating agents should be stored in a cool, dry place to avoid caking. /Chelating agents/

Store at 25 °C (77 °F) with excursions permitted between 15 to 30 °C (59 to 86 °F).

Store in tight container as defined in the USP-NF. This material should be handled and stored per label instructions to ensure product integrity. Store in a refrigerator.

7.2 Conditions for safe storage, including any incompatibilities

Separated from strong oxidants, metals and food and feedstuffs.

Chelating agents, by their very nature, tend to be corrosive to metals such as copper, zinc, and iron. The alkaline salts corrode aluminum severely, and contact with these salts should be avoided. Stainless steel and most polymers or coatings that are able to withstand dilute alkali are acceptable as construction materials. Solid chelating agents should be stored in a cool, dry place to avoid caking. /Chelating agents/

Store at 25 °C (77 °F) with excursions permitted between 15 to 30 °C (59 to 86 °F).

Store in tight container as defined in the USP-NF. This material should be handled and stored per label instructions to ensure product integrity. Store in a refrigerator.

Store away from incompatible materials (see Section 10).

[Note: Specific storage temperature not available in public databases. Refer to supplier Certificate of Analysis (COA) for exact storage conditions.]

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Exposure controls

8.1.1 Occupational exposure limits (OEL)

OSHA PEL: Not established.

ACGIH TLV: Not established.

NIOSH REL: Not established.

No occupational exposure limit values are established for this substance.

Use the lowest feasible exposure level (ALARA principle).

8.1.2 Appropriate engineering controls

Use only in a chemical fume hood or with local exhaust ventilation.

Ensure adequate ventilation to keep airborne concentrations below exposure limits.

8.2 Individual protection measures

8.2.1 Eye/face protection

Wear chemical safety goggles.

8.2.2 Skin protection

Wear protective gloves. Recommended material: Nitrile rubber.

Wear suitable protective clothing (lab coat).

8.2.3 Respiratory protection

Use NIOSH-approved dust/mist respirator (N95 or higher) if ventilation is inadequate.

8.2.4 Thermal hazards

Not applicable.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a) Appearance: Ethylenediamine tetraacetic acid is a colorless crystalline solid. It is slightly soluble in water. The primary hazard is the threat to the environment. Immediate steps should be taken to limit its spread to the environment. It is used in chemical analysis, to make detergents and cleaning compounds, and for many other uses.

b) Odor: No data available

c) Odor threshold: No data available

d) pH: No data available

e) Melting point/freezing point: 245 °C

f) Initial boiling point and boiling range: No data available

g) Flash point: Flash point is> 100 °C,

h) Evaporation rate: No data available

i) Flammability (solid, gas): No data available

j) Upper/lower flammability or explosive limits: No data available

k) Vapor pressure: 1.50X10-12 mm Hg at 25 °C /Extrapolated/

l) Vapor density: No data available

m) Relative density: 0.86 at 68 °F (USCG, 1999) - Less dense than water; will float

n) Water solubility: SOL IN SOLN OF ALKALI HYDROXIDES

o) Partition coefficient: n-octanol/water: Log P (n-octanol/water): -5.9

p) Auto-ignition temperature: No data available

q) Decomposition temperature: No data available

r) Viscosity: No data available

s) Explosive properties: No data available

t) Oxidizing properties: No data available

9.2 Other information

Topological Polar Surface Area (TPSA): 156 Å²

Complexity: 315

10. STABILITY AND REACTIVITY

10.1 Reactivity

No specific reactivity hazards identified under normal handling conditions.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No hazardous reactions under normal conditions.

10.4 Conditions to avoid

Avoid heat, sparks, open flames, direct sunlight, and moisture.

Avoid strong oxidizing agents, strong acids, and strong bases.

10.5 Incompatible materials

Reacts with strong oxidants, strong bases, copper, copper alloys and nickel.

Reacts violently with lead dioxide.

Disodium edentate behaves as a weak acid, displacing carbon dioxide from carbonates and reacting with metals to form hydrogen. It is incompatible with strong oxidizing agents, strong bases, metal ions, and metal alloys.

Additives may be incompatible with the reconstituted (diluted) solution required for intravenous infusion. Consult with pharmacist, if available. When introducing additives, use aseptic technique, mix thoroughly and do not store.

10.6 Hazardous decomposition products

Thermal decomposition may produce: Carbon monoxide (CO), Carbon dioxide (CO□), Nitrogen oxides (NOx).

See also Section 5 (Fire-fighting measures) for combustion products.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity:

No acute toxicity data available.

Skin corrosion/irritation:

Causes skin irritation (H315).

Serious eye damage/eye irritation:

Causes serious eye irritation (H319).

Respiratory or skin sensitization:

No data available.

Germ cell mutagenicity:

No data available.

Carcinogenicity:

No data available.

Reproductive toxicity:

Suspected of damaging fertility or the unborn child (H361).

Specific target organ toxicity (single exposure):

H372, H373

Specific target organ toxicity (repeated exposure):

No data available.

Aspiration hazard:

No data available.

11.2 Additional information

Carcinogen classification:

No indication of carcinogenicity to humans (not listed by IARC).

Exposure routes:

The substance can be absorbed into the body by inhalation of dust, by inhalation of its aerosol and by ingestion.

Poorly absorbed from the gastrointestinal tract. Well absorbed following intramuscular injection.

Signs and symptoms of exposure:

Cough.

Redness. Pain.

Abdominal pain. Diarrhoea.

Data source: Hazardous Substances Data Bank (HSDB) via PubChem.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

LC50; Species: Daphnia magna (Water flea); Conditions: static; Concentration: 625 mg/L for 24 hr /formulated product/

LC50; Species: Lepomis macrochirus (Bluegill); Conditions: static, pH 3.7; Concentration: 159 mg/L for 96 hr; 96 hr No Observed Effect Concentration: 100 mg/L

LC50; Species: Lepomis macrochirus (Bluegill) weight 0.74 (0.62-1.28) g, length 34 (28-38) mm; Conditions: static; Concentration: 41 mg/L for 96 hr (95% confidence interval: 34-62 mg/L) /99.33 % a.i., Versene Acid/

LC50; Species: Ictalurus punctatus (Channel catfish) fingerling, length 2-3 in; Conditions: static; Concentration: >500 mg/L for 1, 2 hr; static /Versene acid/

For more Ecotoxicity Values (Complete) data for ETHYLENEDIAMINE TETRAACETIC ACID (10 total), please visit the HSDB record page.

/AQUATIC SPECIES/ The effect of the strong metal-complexing agent EDTA on survival, growth, and copper and zinc concentrations in Hyalella azteca (scud) was studied to determine if metal concentrations in control amphipods represent minimum physiological levels. Exposure to EDTA concentrations of up to 560 uM for 1 week did not reduce metal levels (mean background = 1.2 umol Cu/g and 1.0 umol Zn/g dry weight), indicating that background metals are firmly bound to Hyalella. Chronic (4 week) exposure to EDTA resulted in increased mortality and reduced growth rates, both of which could be partially ameliorated by adding zinc to culture media. ...

/AQUATIC SPECIES/ Unicellular alga, poterioochromonas malhamensis, w

12.2 Persistence and degradability

No data available.

12.3 Bioaccumulative potential

Log P (n-octanol/water): -5.9

Low potential for bioaccumulation (Log P < 3).

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available.

12.6 Other adverse effects

This substance is classified as hazardous to the aquatic environment.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste Treatment Methods: Waste material must be disposed of in accordance with national and local regulations. Leave chemicals in original containers and do not mix with other waste. Handle uncleaned containers in the same manner as the product itself.

14. TRANSPORT INFORMATION

14.1 UN number

Not regulated as dangerous goods (research quantities typically exempt).

14.2 UN proper shipping name

Not subject to transport regulations (small quantities for research use).

14.3 Transport hazard class(es)

Not classified as dangerous goods for transport (research quantities).

14.4 Packing group

Not applicable (not regulated as dangerous goods in typical research quantities).

14.5 Environmental hazards

Marine pollutant: No (not classified as environmentally hazardous per GHS).

14.6 Special precautions for user

Transport in original packaging. Ensure containers are tightly sealed.

For bulk or commercial quantities, consult applicable transport regulations (DOT, IATA, IMDG).

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable.

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

US EPA / TSCA: Subject to EPA TSCA regulations

EU ECHA / REACH: Registered (REACH Active)

SARA 302 Components:

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components:

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards:

Acute (short-term) health hazard

Chronic (long-term) health hazard

Environmental hazard

Massachusetts Right To Know Components:

This material contains components subject to the Massachusetts Right to Know Act. See Section 2 for hazard classification.

Pennsylvania Right To Know Components:

This material contains components subject to the Pennsylvania Right to Know Act. See Section 2 for hazard classification.

New Jersey Right To Know Components:

This material contains components subject to the New Jersey Right to Know Act. See Section 2 for hazard classification.

California Prop. 65 Components:

This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Other regulatory listings:

- The Australian Inventory of Industrial Chemicals: Chemical: Glycine, N,N'-1,2-ethanediylbis[N-(carboxymethyl)-

- The Australian Inventory of Industrial Chemicals: Chemical: Glycine, N,Nâ□²-1,2-ethanediylbis[N-(carboxymethyl)-, sodium salt (1:2)

- New Jersey Worker and Community Right to Know Act: The New Jersey Worker and Community Right to Know Act requires public and private employers to provide information about hazardous substances at their workplaces. (N.J.S.A. 34:5A-1 et. seq.)

- Clean Water Act Requirements: Ethylenediamine tetraacetic acid is designated as a hazardous substance under section 311(b)(2)(A) of the Federal Water Pollution Control Act and further regulated by the Clean Water Act Amendments of 1977 and 1978. These regulations apply to discharges of this substance. This designation includes a

- CERCLA Reportable Quantities: Persons in charge of vessels or facilities are required to notify the National Response Center (NRC) immediately, when there is a release of this designated hazardous substance, in an amount equal to or greater than its reportable quantity of 5000 lb or 2270 kg. The toll free number of the NRC is (8

15.2 Chemical safety assessment

A chemical safety assessment has not been carried out for this substance.

For research-use-only compounds, no CSA is required under REACH Annex I.

16. OTHER INFORMATION

Revision Date: 2026/09/09

Further Information: The information provided is believed to be correct but is not exhaustive and should be used only as a guideline based on current knowledge. It does not represent a guarantee of the properties of the product. Selleck Chemicals Corporation and its Affiliates shall not be held liable for any damage resulting from handling or contact with the product.