SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifiers

Product name: Ethylenediaminetetraacetic acid disodium salt dihydrate

Product Number: E1644
Brand: Sigma-Aldrich
CAS-No.: 6381-92-6

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses: Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company: Sigma-Aldrich Inc.
3050 SPRUCE ST
ST. LOUIS MO 63103
UNITED STATES

Telephone: +1 314 771-5765
Fax: +1 800 325-5052

1.4 Emergency telephone

Emergency Phone #: 800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Acute toxicity, Inhalation (Category 4), H332
Specific target organ toxicity - repeated exposure, Inhalation (Category 2), Respiratory Tract, H373

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal Word: Warning
Hazard statement(s)
H332 Harmful if inhaled.
H373 May cause damage to organs (Respiratory Tract) through prolonged or repeated exposure if inhaled.

Precautionary statement(s)
P260 Do not breathe dust.
P271 Use only outdoors or in a well-ventilated area.
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.
P314 Get medical advice/ attention if you feel unwell.
P501 Dispose of contents/ container to an approved waste disposal plant.

SECTION 3: Composition/information on ingredients

3.1 Substances
Synonyms: Sequestrene Na2
Disodium ethylenediaminetetraacetatedihydrate
Edetatedisodium salt
dihydrate
Edathamil
EDTAdisodium salt

Formula: $C_{10}H_{14}N_{2}Na_{2}O_{8} \cdot 2H_{2}O$
Molecular weight: 372.24 g/mol
CAS-No.: 6381-92-6
EC-No.: 205-358-3

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Edetate disodium dihydrate</td>
<td>Acute Tox. 4; STOT RE 2;</td>
<td>&lt;= 100 %</td>
</tr>
<tr>
<td></td>
<td>H332, H373</td>
<td></td>
</tr>
</tbody>
</table>

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice
Show this material safety data sheet to the doctor in attendance.

If inhaled
After inhalation: fresh air. Immediately call in physician. If breathing stops: immediately apply artificial respiration, if necessary also oxygen.

In case of skin contact
In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower.

In case of eye contact
After eye contact: rinse out with plenty of water. Remove contact lenses.
If swallowed
After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media
Water Foam Carbon dioxide (CO2) Dry powder

Unsuitable extinguishing media
For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture
Carbon oxides
Nitrogen oxides (NOx)
Sodium oxides
Combustible.
Development of hazardous combustion gases or vapours possible in the event of fire.

5.3 Advice for firefighters
Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

5.4 Further information
Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Advice for non-emergency personnel: Avoid inhalation of dusts. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.
For personal protection see section 8.

6.2 Environmental precautions
Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up
Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

6.4 Reference to other sections
For disposal see section 13.
SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling
Work under hood. Do not inhale substance/mixture.

Hygiene measures
Change contaminated clothing. Preventive skin protection recommended. Wash hands after working with substance.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions
Tightly closed. Dry.

Storage class
Storage class (TRGS 510): 11: Combustible Solids

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Ingredients with workplace control parameters
Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Appropriate engineering controls
Change contaminated clothing. Preventive skin protection recommended. Wash hands after working with substance.

Personal protective equipment

Eye/face protection
Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses

Skin protection
This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).
Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested: KCL 741 Dermatril® L

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).
Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested: KCL 741 Dermatril® L

**Body Protection**
protective clothing

**Respiratory protection**
required when dusts are generated.
Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

**Control of environmental exposure**
Do not let product enter drains.

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**SECTION 9: Physical and chemical properties**

9.1 **Information on basic physical and chemical properties**

| a) Appearance | Form: crystals
| Color: white |
| b) Odor | odorless |
| c) Odor Threshold | Not applicable |
| d) pH | No data available |
| e) Melting point/freezing point | Melting point/range: 248 °C (478 °F) |
| f) Initial boiling point and boiling range | No data available |
| g) Flash point | ()Not applicable |
| 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 | No data available |
| l) Vapor density | No data available |
| m) Density | No data available |
| Relative density | No data available |
| n) Water solubility | No data available |
| o) Partition coefficient: n-octanol/water | No data available |
| p) Autoignition temperature | No data available |
q) Decomposition temperature 255 °C (491 °F) -

r) Viscosity No data available

s) Explosive properties No data available

t) Oxidizing properties none

9.2 Other safety information
No data available

SECTION 10: Stability and reactivity

10.1 Reactivity
The following applies in general to flammable organic substances and mixtures: in correspondingly fine distribution, when whirled up a dust explosion potential may generally be assumed.

10.2 Chemical stability
The product is chemically stable under standard ambient conditions (room temperature).

10.3 Possibility of hazardous reactions
Violent reactions possible with:
Strong oxidizing agents

10.4 Conditions to avoid
No information available

10.5 Incompatible materials
Aluminium, Copper, Copper alloys, Nickel, Zinc

10.6 Hazardous decomposition products
In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - male and female - 2,800 mg/kg
(OECD Test Guideline 401)
Remarks: The value is given in analogy to the following substances:
Ethylenedinitrilotetraacetic acid disodium salt
Inhalation: No data available
Dermal: No data available

Skin corrosion/irritation
Skin - Rabbit
Result: No skin irritation
(OECD Test Guideline 404)
Remarks: (ECHA)
The value is given in analogy to the following substances: Ethylenedinitrilotetraacetic acid disodium salt
**Serious eye damage/eye irritation**

Eyes - Rabbit  
Result: No eye irritation  
(OECD Test Guideline 405)  
Remarks: (ECHA)  
The value is given in analogy to the following substances: Ethylenedinitrilotetraacetic acid disodium salt

**Respiratory or skin sensitization**

Maximization Test - Guinea pig  
Result: negative  
(OECD Test Guideline 406)  
Remarks: (ECHA)  
The value is given in analogy to the following substances: Ethylenedinitrilotetraacetic acid disodium salt

**Germ cell mutagenicity**

Test Type: Chromosome aberration test in vitro  
Test system: Chinese hamster ovary cells  
Metabolic activation: with and without metabolic activation  
Result: negative  
Remarks: (ECHA)  
The value is given in analogy to the following substances: Ethylenedinitrilotetraacetic acid trisodium salt

Test Type: In vitro mammalian cell gene mutation test  
Test system: mouse lymphoma cells  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 476  
Result: negative  
Remarks: (ECHA)  
The value is given in analogy to the following substances: Ethylenedinitrilotetraacetic acid trisodium salt

Test Type: Ames test  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 471  
Result: negative  
Remarks: (ECHA)  
The value is given in analogy to the following substances: Ethylenedinitrilotetraacetic acid trisodium salt

Test Type: In vivo micronucleus test  
Species: Mouse

Application Route: Oral  
Method: OECD Test Guideline 474  
Remarks: (ECHA)  
The value is given in analogy to the following substances: Ethylenedinitrilotetraacetic acid disodium salt

**Carcinogenicity**

IARC: No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA’s list of regulated carcinogens.
Reproductive toxicity
No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
Inhalation - May cause damage to organs through prolonged or repeated exposure.
- Respiratory Tract

Aspiration hazard
No data available

11.2 Additional Information
RTECS: AH4410000
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

SECTION 12: Ecological information

12.1 Toxicity

Toxicity to fish
semi-static test LC50 - Oncorhynchus mykiss (rainbow trout) - > 100 mg/l - 96 h
(OECD Test Guideline 203)
Remarks: (ECHA)
The value is given in analogy to the following substances: Sodium feredetate

Toxicity to daphnia and other aquatic invertebrates
static test EC50 - Daphnia magna (Water flea) - 140 mg/l - 48 h
(DIN 38412)
Remarks: (ECHA)
The value is given in analogy to the following substances: Ethylenedinitrilotetraacetic acid disodium salt

NOEC - Daphnia magna (Water flea) - 25 mg/l - 21 d
Remarks: (ECHA)
The value is given in analogy to the following substances: Ethylenedinitrilotetraacetic acid disodium salt

Toxicity to algae
static test - Pseudokirchneriella subcapitata (green algae) - > 60 mg/l - 72 h
(OECD Test Guideline 201)
Remarks: (ECHA)
The value is given in analogy to the following substances: Sodium feredetate

Toxicity to bacteria
NOEC - activated sludge - > 640 mg/l - 3 h
(OECD Test Guideline 209)
Remarks: (ECHA)
The value is given in analogy to the following substances: Sodium feredetate
12.2 Persistence and degradability

Biodegradability: Result: 2 % - Not readily biodegradable.
(OECD Test Guideline 301D)
Remarks: The value is given in analogy to the following substances:
Ethylenedinitrilotetraacetic acid disodium salt

12.3 Bioaccumulative potential

Bioaccumulation: Lepomis macrochirus (Bluegill sunfish) - 28 d
at 21 °C - 0.08 mg/l (Edetate disodium dihydrate)

Bioconcentration factor (BCF): 1.8
(OECD Test Guideline 305)
Remarks: The value is given in analogy to the following substances:
Ethylenedinitrilotetraacetic acid, Tetrasodium salt

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Endocrine disrupting properties

No data available

12.7 Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product
Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself. See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

SECTION 14: Transport information

DOT (US)
Not dangerous goods

IMDG
Not dangerous goods

IATA
Not dangerous goods

Further information
Not classified as dangerous in the meaning of transport regulations.
SECTION 15: Regulatory information

SARA 302 Components
This material does not contain any components with a section 302 EHS TPQ.

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 Health Hazard

Massachusetts Right To Know Components
No components are subject to the Massachusetts Right to Know Act.

SECTION 16: Other information

Further information
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 Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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Version: 6.6 Revision Date: 03/18/2023 Print Date: 07/29/2023