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

1.1 **Product identifier**

Identification of the substance: Ethylenediamine tetraacetic acid disodium salt dihydrate

- Article number: X986
- Registration number (REACH): 01-2119486775-20-xxxx
- EC number: 205-358-3
- CAS number: 6381-92-6

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

Identified uses: laboratory chemical

Uses advised against: laboratory and analytical use

1.3 **Details of the supplier of the safety data sheet**

Carl Roth GmbH + Co KG
Schoemperlenstr. 3-5
D-76185 Karlsruhe
Germany

Telephone: +49 (0) 721 - 56 06 0
Telefax: +49 (0) 721 - 56 06 149
E-mail: sicherheit@carlroth.de
Website: www.carlroth.de

Competent person responsible for the safety data sheet: Department Health, Safety and Environment

E-mail (competent person): sicherheit@carlroth.de

1.4 **Emergency telephone number**

Emergency information service: Poison Centre Munich: +49/(0)89 19240

**SECTION 2: Hazards identification**

2.1 **Classification of the substance or mixture**

**Classification acc. to GHS**

<table>
<thead>
<tr>
<th>Section</th>
<th>Hazard class</th>
<th>Hazard class and category</th>
<th>Hazard statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1O</td>
<td>acute toxicity (oral)</td>
<td>(Acute Tox. 5)</td>
<td>H303</td>
</tr>
<tr>
<td>3.1I</td>
<td>acute toxicity (inhal.)</td>
<td>(Acute Tox. 4)</td>
<td>H332</td>
</tr>
<tr>
<td>3.9</td>
<td>specific target organ toxicity - repeated exposure</td>
<td>(STOT RE 2)</td>
<td>H373</td>
</tr>
</tbody>
</table>

2.2 **Label elements**

Labelling GHS
**Signal word**  Warning

**Pictograms**

GHS07, GHS08

**Hazard statements**

H303  May be harmful if swallowed  
H332  Harmful if inhaled  
H373  May cause damage to organs (respiratory system) through prolonged or repeated exposure (if inhaled)

**Precautionary statements**

**Precautionary statements - prevention**

P260  Do not breathe dust/fume/gas/mist/vapours/spray.  
P271  Use only outdoors or in a well-ventilated area.

**Precautionary statements - response**

P304+P340  IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
P312  Call a POISON CENTER or doctor/physician if you feel unwell.

**Precautionary statements - disposal**

P501  Dispose of contents/container to industrial combustion plant.

**Labelling of packages where the contents do not exceed 125 ml**

Signal word: Warning

Symbol(s)

H303  May be harmful if swallowed.  
P312  Call a POISON CENTER or doctor/physician if you feel unwell.

### 2.3 Other hazards

There is no additional information.

**SECTION 3: Composition/information on ingredients**

**3.1 Substances**

Name of substance  Ethylenediamine tetraacetic acid disodium salt dihydrate  
Registration number (REACH)  01-2119486775-20-xxxx  
EC number  205-358-3  
CAS number  6381-92-6  
Molecular formula  \( \text{C}_{10}\text{H}_{14}\text{N}_{2}\text{Na}_{2}\text{O}_{8} \cdot 2\text{H}_{2}\text{O} \)  
Molar mass  372.2 g/mol
SECTION 4: First aid measures

4.1 Description of first aid measures

**General notes**
Take off contaminated clothing.

**Following inhalation**
Provide fresh air. In all cases of doubt, or when symptoms persist, seek medical advice.

**Following skin contact**
Rinse skin with water/shower. In all cases of doubt, or when symptoms persist, seek medical advice.

**Following eye contact**
Rinse cautiously with water for several minutes. In all cases of doubt, or when symptoms persist, seek medical advice.

**Following ingestion**
Rinse mouth. Call a doctor if you feel unwell.

4.2 Most important symptoms and effects, both acute and delayed
Symptoms and effects are not known to date

4.3 Indication of any immediate medical attention and special treatment needed
none

SECTION 5: Firefighting measures

5.1 Extinguishing media

**Suitable extinguishing media**
Co-ordinate fire-fighting measures to the fire surroundings
water spray, foam, dry extinguishing powder, carbon dioxide (CO2)

**Unsuitable extinguishing media**
water jet

5.2 Special hazards arising from the substance or mixture
Combustible.

**Hazardous combustion products**
In case of fire may be liberated: nitrogen oxides (NOx), carbon monoxide (CO), carbon dioxide (CO2)

5.3 Advice for firefighters
Fight fire with normal precautions from a reasonable distance. Wear self-contained breathing apparatus.
SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel
Do not breathe dust. Avoid contact with skin and eyes. Provide adequate ventilation.

6.2 Environmental precautions
Keep away from drains, surface and ground water.

6.3 Methods and material for containment and cleaning up
Advises on how to contain a spill
Covering of drains.

Advises on how to clean up a spill
Take up mechanically. Control of dust.

Other information relating to spills and releases
Place in appropriate containers for disposal.

6.4 Reference to other sections

SECTION 7: Handling and storage

7.1 Precautions for safe handling
Provide adequate ventilation as well as local exhaustion at critical locations. Avoid dust formation.

• Measures to prevent fire as well as aerosol and dust generation
Removal of dust deposits.

Advice on general occupational hygiene
Wash hands before breaks and after work.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed. Store in a dry place.

Incompatible substances or mixtures
Observe hints for combined storage.

Consideration of other advice

• Ventilation requirements
Use local and general ventilation.

• Specific designs for storage rooms or vessels
Recommended storage temperature: 15 – 25 °C.

7.3 Specific end use(s)
No information available.
SECTION 8: Exposure controls/personal protection

8.1 Control parameters

National limit values

Occupational exposure limit values (Workplace Exposure Limits)
Data are not available.

Relevant DNELs/DMELs/PNECs and other threshold levels

• human health values

<table>
<thead>
<tr>
<th>Endpoint</th>
<th>Threshold level</th>
<th>Protection goal, route of exposure</th>
<th>Used in</th>
<th>Exposure time</th>
</tr>
</thead>
<tbody>
<tr>
<td>DNEL</td>
<td>1.5 mg/m³</td>
<td>human, inhalatory</td>
<td>worker (industry)</td>
<td>chronic - local effects</td>
</tr>
<tr>
<td>DNEL</td>
<td>3 mg/m³</td>
<td>human, inhalatory</td>
<td>worker (industry)</td>
<td>acute - local effects</td>
</tr>
</tbody>
</table>

• environmental values

<table>
<thead>
<tr>
<th>Endpoint</th>
<th>Threshold level</th>
<th>Environmental compartment</th>
<th>Exposure time</th>
</tr>
</thead>
<tbody>
<tr>
<td>PNEC</td>
<td>2.2 mg/l</td>
<td>freshwater</td>
<td>short-term (single instance)</td>
</tr>
<tr>
<td>PNEC</td>
<td>0.22 mg/l</td>
<td>marine water</td>
<td>short-term (single instance)</td>
</tr>
<tr>
<td>PNEC</td>
<td>43 mg/l</td>
<td>sewage treatment plant (STP)</td>
<td>short-term (single instance)</td>
</tr>
</tbody>
</table>

8.2 Exposure controls

Individual protection measures (personal protective equipment)

Eye/face protection

Use safety goggle with side protection.

Skin protection

• hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

• type of material
NBR (Nitrile rubber)

• material thickness
>0,11 mm

• breakthrough times of the glove material
>480 minutes (permeation: level 6)
• **other protection measures**

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended.

**Respiratory protection**

Respiratory protection necessary at: Dust formation. Particulate filter device (EN 143). P2 (filters at least 94% of airborne particles, colour code: White).

**Environmental exposure controls**

Keep away from drains, surface and ground water.

---

**SECTION 9: Physical and chemical properties**

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

**Appearance**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>solid (crystalline)</td>
</tr>
<tr>
<td>Colour</td>
<td>white</td>
</tr>
<tr>
<td>Odour</td>
<td>odourless</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>No data available</td>
</tr>
</tbody>
</table>

**Other physical and chemical parameters**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH (value)</td>
<td>4 – 6 (water: 50 g/l, 20 °C)</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>110 °C</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>This information is not available.</td>
</tr>
<tr>
<td>Flash point</td>
<td>not applicable</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>no data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>These information are not available</td>
</tr>
<tr>
<td>Explosive limits</td>
<td></td>
</tr>
<tr>
<td>• lower explosion limit (LEL)</td>
<td>this information is not available</td>
</tr>
<tr>
<td>• upper explosion limit (UEL)</td>
<td>this information is not available</td>
</tr>
<tr>
<td>Explosion limits of dust clouds</td>
<td>these information are not available</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>This information is not available.</td>
</tr>
<tr>
<td>Density</td>
<td>This information is not available.</td>
</tr>
<tr>
<td>Vapour density</td>
<td>This information is not available.</td>
</tr>
<tr>
<td>Bulk density</td>
<td>~ 700 kg/m³</td>
</tr>
<tr>
<td>Relative density</td>
<td>Information on this property is not available.</td>
</tr>
<tr>
<td>Solubility(ies)</td>
<td></td>
</tr>
<tr>
<td>Water solubility</td>
<td>~ 100 g/l at 20 °C</td>
</tr>
<tr>
<td>Partition coefficient</td>
<td></td>
</tr>
</tbody>
</table>
Ethylene diamine tetraacetic acid disodium salt dihydrate ≥ 99%, USP

article number: X986

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-octanol/water (log KOW)</td>
<td>This information is not available.</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>Information on this property is not available.</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>&gt;250 °C</td>
</tr>
<tr>
<td>Viscosity</td>
<td>not relevant (solid matter)</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Shall not be classified as explosive</td>
</tr>
<tr>
<td>Oxidising properties</td>
<td>none</td>
</tr>
</tbody>
</table>

9.2 Other information

There is no additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity

Dust explosibility.

10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

10.3 Possibility of hazardous reactions

Violent reaction with: Strong oxidiser.

10.4 Conditions to avoid

Keep away from heat. Decomposition takes place from temperatures above: >250 °C.

10.5 Incompatible materials

There is no additional information.

10.6 Hazardous decomposition products

Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

<table>
<thead>
<tr>
<th>Exposure route</th>
<th>Endpoint</th>
<th>Value</th>
<th>Species</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>oral</td>
<td>LD50</td>
<td>2,800 mg/kg</td>
<td>rat</td>
<td>ECHA</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation

Shall not be classified as corrosive/irritant to skin.

Serious eye damage/eye irritation

Shall not be classified as seriously damaging to the eye or eye irritant.

Respiratory or skin sensitisation

Shall not be classified as a respiratory or skin sensitiser.

Summary of evaluation of the CMR properties

Shall not be classified as germ cell mutagenic, carcinogenic nor as a reproductive toxicant.

• Specific target organ toxicity - single exposure

Shall not be classified as a specific target organ toxicant (single exposure).
Specific target organ toxicity - repeated exposure
May cause damage to organs (respiratory system) through prolonged or repeated exposure (if inhaled).

Aspiration hazard
Shall not be classified as presenting an aspiration hazard.

Symptoms related to the physical, chemical and toxicological characteristics
• If swallowed
   data are not available
• If in eyes
   essentially non-irritating
• If inhaled
   data are not available
• If on skin
   essentially non-irritating

Other information
None

SECTION 12: Ecological information

12.1 Toxicity
acc. to 1272/2008/EC: Shall not be classified as hazardous to the aquatic environment.

Aquatic toxicity (acute)

<table>
<thead>
<tr>
<th>Endpoint</th>
<th>Value</th>
<th>Species</th>
<th>Exposure time</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50</td>
<td>41 mg/l</td>
<td>bluegill (Lepomis macrochirus)</td>
<td>96 h</td>
</tr>
<tr>
<td>EC50</td>
<td>610 mg/l</td>
<td>daphnia magna</td>
<td>24 h</td>
</tr>
</tbody>
</table>

Aquatic toxicity (chronic)

<table>
<thead>
<tr>
<th>Endpoint</th>
<th>Value</th>
<th>Species</th>
<th>Source</th>
<th>Exposure time</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC50</td>
<td>56 mg/l</td>
<td>Pseudomonas putida</td>
<td>ECHA</td>
<td>8 h</td>
</tr>
<tr>
<td>NOEC</td>
<td>25.7 mg/l</td>
<td>zebra fish (Danio rerio)</td>
<td>ECHA</td>
<td>35 d</td>
</tr>
<tr>
<td>LOEC</td>
<td>50 mg/l</td>
<td>daphnia magna</td>
<td>ECHA</td>
<td>21 d</td>
</tr>
<tr>
<td>growth (EbCx) 10%</td>
<td>&gt;500 mg/l</td>
<td>microorganisms</td>
<td>ECHA</td>
<td>30 min</td>
</tr>
</tbody>
</table>

12.2 Process of degradability
Theoretical Oxygen Demand with nitrification: 0.8811 mg/mg
Theoretical Oxygen Demand: 0.6984 mg/mg
Theoretical Carbon Dioxide: 1.182 mg/mg

12.3 Bioaccumulative potential

BCF 1.8 (ECHA)
12.4 Mobility in soil
Data are not available.

12.5 Results of PBT and vPvB assessment
Data are not available.

12.6 Other adverse effects
Data are not available.

**SECTION 13: Disposal considerations**

13.1 Waste treatment methods

This material and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.

**Sewage disposal-relevant information**
Do not empty into drains.

**Sewage disposal-relevant information**
Do not empty into drains.

13.2 Relevant provisions relating to waste
The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

13.3 Remarks
Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities. Please consider the relevant national or regional provisions.

**SECTION 14: Transport information**

14.1 UN number
(not subject to transport regulations)

14.2 UN proper shipping name
not relevant

14.3 Transport hazard class(es)
not relevant

14.4 Packing group
not relevant

14.5 Environmental hazards
none (non-environmentally hazardous acc. to the dangerous goods regulations)

14.6 Special precautions for user
There is no additional information.

14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code
The cargo is not intended to be carried in bulk.

14.8 Information for each of the UN Model Regulations

• Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN)
Not subject to ADR, RID and ADN.
**SECTION 15: Regulatory information**

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

**National inventories**

Substance is listed in the following national inventories:

<table>
<thead>
<tr>
<th>Country</th>
<th>National inventories</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>AU</td>
<td>AICS</td>
<td>substance is listed</td>
</tr>
<tr>
<td>CA</td>
<td>DSL</td>
<td>substance is listed</td>
</tr>
<tr>
<td>CN</td>
<td>IECSC</td>
<td>substance is listed</td>
</tr>
<tr>
<td>EU</td>
<td>ECSI</td>
<td>substance is listed</td>
</tr>
<tr>
<td>EU</td>
<td>REACH Reg.</td>
<td>substance is listed</td>
</tr>
<tr>
<td>MX</td>
<td>INSQ</td>
<td>substance is listed</td>
</tr>
<tr>
<td>NZ</td>
<td>NZIoC</td>
<td>substance is listed</td>
</tr>
<tr>
<td>PH</td>
<td>PICCS</td>
<td>substance is listed</td>
</tr>
<tr>
<td>TR</td>
<td>CICR</td>
<td>substance is listed</td>
</tr>
<tr>
<td>TW</td>
<td>TCSI</td>
<td>substance is listed</td>
</tr>
</tbody>
</table>

**Legend**

- AICS: Australian Inventory of Chemical Substances
- CICR: Chemical Inventory and Control Regulation
- DSL: Domestic Substances List (DSL)
- ECSI: EC Substance Inventory (EINECS, ELINCS, NLP)
- IECSC: Inventory of Existing Chemical Substances Produced or Imported in China
- INSQ: National Inventory of Chemical Substances
- NZIoC: New Zealand Inventory of Chemicals
- PICCS: Philippine Inventory of Chemicals and Chemical Substances
- REACH Reg.: REACH registered substances
- TCSI: Taiwan Chemical Substance Inventory

### 15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance.

**SECTION 16: Other information**

### Abbreviations and acronyms

<table>
<thead>
<tr>
<th>Abbr.</th>
<th>Descriptions of used abbreviations</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADN</td>
<td>Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures (European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways)</td>
</tr>
<tr>
<td>ADR</td>
<td>Accord européen relatif au transport international des marchandises dangereuses par route (European Agreement concerning the International Carriage of Dangerous Goods by Road)</td>
</tr>
<tr>
<td>BCF</td>
<td>bioconcentration factor</td>
</tr>
<tr>
<td>CAS</td>
<td>Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)</td>
</tr>
</tbody>
</table>
Abbr. | Descriptions of used abbreviations
--- | ---
CMR | Carcinogenic, Mutagenic or toxic for Reproduction
DGR | Dangerous Goods Regulations (see IATA/DGR)
DMEL | Derived Minimal Effect Level
DNEL | Derived No-Effect Level
EINECS | European Inventory of Existing Commercial Chemical Substances
ELINCS | European List of Notified Chemical Substances
GHS | "Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
IATA | International Air Transport Association
IATA/DGR | Dangerous Goods Regulations (DGR) for the air transport (IATA)
ICAO | International Civil Aviation Organization
IMDG | International Maritime Dangerous Goods Code
MARPOL | International Convention for the Prevention of Pollution from Ships (abbr. of "Marine Pollutant")
NLP | No-Longer Polymer
PBT | Persistent, Bioaccumulative and Toxic
PNEC | Predicted No-Effect Concentration
REACH | Registration, Evaluation, Authorisation and Restriction of Chemicals
RID | Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail)
vPvB | very Persistent and very Bioaccumulative

**Key literature references and sources for data**
- UN Recommendations on the Transport of Dangerous Good
- Dangerous Goods Regulations (DGR) for the air transport (IATA)
- International Maritime Dangerous Goods Code (IMDG)

**List of relevant phrases (code and full text as stated in chapter 2 and 3)**

<table>
<thead>
<tr>
<th>Code</th>
<th>Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>H303</td>
<td>may be harmful if swallowed</td>
</tr>
<tr>
<td>H332</td>
<td>harmful if inhaled</td>
</tr>
<tr>
<td>H373</td>
<td>may cause damage to organs (respiratory system) through prolonged or repeated exposure (if inhaled)</td>
</tr>
</tbody>
</table>

**Disclaimer**
The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.