SAFETY DATA SHEET

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

1.1 Product identifiers

Product name: \( N-(3\text{-Dimethylaminopropyl})-N'\text{-ethylcarbodiimide hydrochloride} \)

Product Number: 03450
Brand: Sigma-Aldrich
CAS-No.: 25952-53-8

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, Oral (Category 4), H302
Acute toxicity, Dermal (Category 3), H311
Skin irritation (Category 2), H315
Skin sensitization (Category 1), H317
Specific target organ toxicity - repeated exposure, Oral (Category 2), Stomach, large intestine, lymph node, H373
Short-term (acute) aquatic hazard (Category 1), H400
Long-term (chronic) aquatic hazard (Category 1), H410
2.2 GHS Label elements, including precautionary statements

Pictogram

Signal Word: Danger

Hazard statement(s)
- H302: Harmful if swallowed.
- H311: Toxic in contact with skin.
- H315: Causes skin irritation.
- H317: May cause an allergic skin reaction.
- H373: May cause damage to organs (Stomach, large intestine, lymph node) through prolonged or repeated exposure if swallowed.
- H410: Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)
- P260: Do not breathe dust.
- P264: Wash skin thoroughly after handling.
- P270: Do not eat, drink or smoke when using this product.
- P272: Contaminated work clothing must not be allowed out of the workplace.
- P273: Avoid release to the environment.
- P280: Wear protective gloves/ protective clothing.
- P301 + P312 + P330: IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.
- P302 + P352 + P312: IF ON SKIN: Wash with plenty of water. Call a POISON CENTER/ doctor if you feel unwell.
- P314: Get medical advice/ attention if you feel unwell.
- P333 + P313: If skin irritation or rash occurs: Get medical advice/ attention.
- P362: Take off contaminated clothing and wash before reuse.
- P391: Collect spillage.
- P405: Store locked up.
- P501: Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

SECTION 3: Composition/information on ingredients

3.1 Substances

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-(3-(Dimethylamino)propyl)-3-ethyl-carbodiimide hydrochloride</td>
<td>Acute Tox. 4; Acute Tox. 3; Skin Irrit. 2; Skin Sens.</td>
<td>&lt;= 100 %</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
First aiders need to protect themselves. Show this material safety data sheet to the doctor in attendance.

If inhaled
After inhalation: fresh air. Call in physician.

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

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
Nature of decomposition products not known.
Combustible.
The life science business of Merck KGaA, Darmstadt, Germany operates as MilliporeSigma in the US and Canada.

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 generation and inhalation of dusts in all circumstances. 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 carefully. 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**
For precautions see section 2.2.

7.2 **Conditions for safe storage, including any incompatibilities**

**Storage conditions**
Tightly closed. Dry. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorized persons.

**Storage stability**
Recommended storage temperature  
-20 °C
Moisture sensitive. Store under inert gas.

**Storage class**
Storage class (TRGS 510): 6.1C: Combustible, acute toxic Cat.3 / toxic compounds or compounds which causing chronic effects

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**
Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face 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 EN 16523-1 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

- **Splash contact**
  - Material: Nitrile rubber
  - Minimum layer thickness: 0.11 mm
  - Break through time: 480 min
  - Material tested: KCL 741 Dermatril® L

**Body Protection**

**Respiratory protection**
Recommended Filter type: Filter type P3
The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

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.

### SECTION 9: Physical and chemical properties

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

- **a)** Appearance
  - Form: solid
  - Color: white, to, off-white

- **b)** Odor
  - No data available

- **c)** Odor Threshold
  - No data available

- **d)** pH
  - No data available

- **e)** Melting point/freezing point
  - Melting point/range: 110 - 115 °C (230 - 239 °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
  - < 1.3 hPa at 20 °C (68 °F) - OECD Test Guideline 104

- **l)** Vapor density
  - No data available

- **m)** Density
  - 1.044 g/cm³ at 20 °C (68 °F) - OECD Test Guideline 109
  - Relative density: 1.00420 °C - OECD Test Guideline 109

- **n)** Water solubility
  - 1,000 g/l at 20 °C (68 °F) - OECD Test Guideline 105

- **o)** Partition coefficient: n-octanol/water
  - log Pow: -2.98 at 20 °C (68 °F) - OECD Test Guideline 107 - Bioaccumulation is not expected.

- **p)** Autoignition temperature
  - No data available

- **q)** Decomposition temperature
  - No data available

- **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
Caution! In contact with nitrites, nitrates, nitrous acid possible liberation of nitrosamines!
Violent reactions possible with:
Oxidizing agents
Acid anhydrides
acid halides
acids

10.4 Conditions to avoid
no information available

10.5 Incompatible materials
No data available

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 - female - 500 mg/kg
(OECD Test Guideline 423)
Inhalation: No data available
LD50 Dermal - Rat - male and female - > 200 - 1,000 mg/kg
(OECD Test Guideline 402)
No data available

Skin corrosion/irritation
Skin - Rabbit
Result: Severe skin irritation
(OECD Test Guideline 404)

Serious eye damage/eye irritation
Remarks: No data available

Respiratory or skin sensitization
Local lymph node assay (LLNA) - Mouse
May cause allergic skin reaction.
(OECD Test Guideline 429)

Germ cell mutagenicity
Test Type: Ames test
Test system: S. typhimurium
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: positive

Test Type: Chromosome aberration test in vitro
Test system: mouse lymphoma cells
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: positive

Test Type: Genotoxicity in vivo
Species: Rat
Method: OECD Test Guideline 489
Result: negative

**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**
Oral - May cause damage to organs through prolonged or repeated exposure.
- Stomach, large intestine, lymph node

**Aspiration hazard**
No data available

**11.2 Additional Information**
Repeteed dose toxicity - Rat - male and female - Oral

RTECS: FF2200000
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 static test LC50 - Cyprinus carpio (Carp) - 4.6 mg/l - 96 h

Sigma-Aldrich - 03450
Toxicity to daphnia and other aquatic invertebrates
EC50 - Daphnia magna (Water flea) - 0.41 mg/l - 48 h
(ISO 6341)

12.2 Persistence and degradability
Biodegradability
aerobic Chemical oxygen demand - Exposure time 28 d
Result: < 5 % - Not readily biodegradable.
(OECD Test Guideline 301F)

12.3 Bioaccumulative potential
No data available

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.

SECTION 14: Transport information

DOT (US)
UN number: 2811  Class: 6.1  Packing group: III
Proper shipping name: Toxic solids, organic, n.o.s. (1-(3-(Dimethylamino)propyl)-3-ethyl-carbodiimide hydrochloride)
Reportable Quantity (RQ):
Poison Inhalation Hazard: No

IMDG
UN number: 2811  Class: 6.1  Packing group: III  EMS-No: F-A, S-A
Proper shipping name: TOXIC SOLID, ORGANIC, N.O.S. (1-(3-(Dimethylamino)propyl)-3-ethyl-carbodiimide hydrochloride)
Marine pollutant: yes

IATA
UN number: 2811  Class: 6.1  Packing group: III
Proper shipping name: Toxic solid, organic, n.o.s. (1-(3-(Dimethylamino)propyl)-3-ethyl-carbodiimide hydrochloride)

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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