Safety Data Sheet

Cat. # BC25-5

EDC

Size: 5g
1-ethyl-3-(3-dimethylamino)propyl carbodiimide, hydrochloride
Safety Data Sheet
according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
Revision date: 5/11/2017   Version: 1.1

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

1.1. Product identifier

Product form: Substance
Substance name: 1-ethyl-3-(3-dimethylamino)propyl carbodiimide, hydrochloride
Chemical name: EDC
EC-No.: 247-361-2
CAS-No.: 25952-53-8
Product code: 009E
Type of product: Pure substance, Hygroscopic substance. Preventive measures apply to the substance in dry state only
Formula: C8H17N3.HCl
Synonyms:
(3-dimethylaminopropyl)ethylcarbodiimide monohydrochloride / 1-(3-dimethylaminopropyl)-3-ethylicarbodiimide hydrochloride / 1,3-propanediamine, N'-(ethylcarbonimidoyl)-N,N-dimethyl-, monohydrochloride / EDAP (=1-ethyl-3-(3-dimethylamino)propyl carbodiimide, hydrochloride) / EDC (=1-ethyl-3-(3-dimethylaminopropyl)carbodiimide, hydrochloride) / EDC-HCl (=1-Ethyl-3-(3-dimethylaminopropyl)carbodiimide, Hydrochlorid) / EDCI (=1-ethyl-3-(3-dimethylaminopropyl)carbodiimide, hydrochloride) / N-(3-dimethylaminopropyl)-N'-ethylcarbodiimid hydrochloride / EDAC (=1-Ethyl-3-(3-dimethylaminopropyl)carbodiimide, hydrochloride) / N-(3-Dimethylaminopropyl)-N'-(ethylcarbonimidoyl)-N,N-dimethylpropane-1,3-diamine monohydrochloride / N-ethyl-N'-(3-diethylaminopropyl)carbodiimide hydrochloride / N-Ethyl-N'-(3-dimethylaminopropyl)carbodiimidhydrochlorid / N'-((3-dimethylaminopropyl)ethylcarbodiimid, Hydrochlorid) / WSC (=1-ethyl-3-(3-dimethylamino)propyl carbodiimid, Hydrochlorid)

Product group: Raw material
BIG no: 26531

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

1.2.1. Relevant identified uses

Use of the substance/mixture: Industrial use

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Geno Technology, Inc./ G-Biosciences
9800 Page Avenue
63132-1429 Saint Louis - United States
T 800-628-7730 - F 314-991-1504
technical@GBiosciences.com - www.GBiosciences.com

1.4. Emergency telephone number

Emergency number: Chemtrec 1-800-424-9300 (USA/Canada), +1-703-527-3887 (Intl)

<table>
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<tr>
<th>Country</th>
<th>Organisation/Company</th>
<th>Address</th>
<th>Emergency number</th>
<th>Comment</th>
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<tbody>
<tr>
<td>United Kingdom</td>
<td>National Poisons Information Service (Belfast Centre)</td>
<td>Grosvenor Road BT12 8BA Belfast</td>
<td>0344 892 0111</td>
<td></td>
</tr>
<tr>
<td>United Kingdom</td>
<td>National Poisons Information Service (Birmingham Centre)</td>
<td>Dudley Road B18 7QH Birmingham</td>
<td>0344 892 0111</td>
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<td>United Kingdom</td>
<td>National Poisons Information Service (Cardiff Centre)</td>
<td>Penarth CF64 2XW Cardiff</td>
<td>0344 892 0111</td>
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<td>United Kingdom</td>
<td>National Poisons Information Service Edinburgh</td>
<td>Little France Crescent EH16 4SA Edinburgh</td>
<td>0344 892 0111</td>
<td></td>
</tr>
<tr>
<td>United Kingdom</td>
<td>Guy's &amp; St Thomas' Poisons Unit</td>
<td>Avonley Road SE14 5ER London</td>
<td>0870 243 2241</td>
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<tr>
<td>United Kingdom</td>
<td>National Poisons Information Service (Newcastle Centre)</td>
<td>Claremont Place Newcastle-upon-Tyne NE1 4LP Newcastle</td>
<td>0344 892 0111</td>
<td></td>
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</tbody>
</table>
SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

| Skin corrosion/irritation, Category 2 | H315 |
| Serious eye damage/eye irritation, Category 1 | H318 |
| Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation | H335 |

Full text of H statements: see section 16

Adverse physicochemical, human health and environmental effects
May cause respiratory irritation. Causes skin irritation. Causes serious eye damage.

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

CLP Signal word: Danger

Hazard pictograms (CLP): [GHS05, GHS07]

Hazard statements (CLP):
- H315 - Causes skin irritation.
- H318 - Causes serious eye damage.
- H335 - May cause respiratory irritation.

Precautionary statements (CLP):
- P261 - Avoid breathing dust/fume/gas/mist/vapours/spray.
- P264 - Wash hands, forearms and face thoroughly after handling.
- P271 - Use only outdoors or in a well-ventilated area.
- P280 - Wear protective gloves/protective clothing/eye protection/face protection.
- 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+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P310 - Immediately call a POISON CENTER or doctor.
- P312 - Call a POISON CENTER or doctor if you feel unwell.
- P313 - Specific treatment (see supplemental first aid instruction on this label).
- P362+P364 - Take off contaminated clothing and wash it before reuse.
- P403+P233 - Store in a well-ventilated place. Keep container tightly closed.
- P405 - Store locked up.
- P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

2.3. Other hazards
No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Substance type: Mono-constituent

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>Classification according to Regulation (EC) No. 1272/2008 [CLP]</th>
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<tr>
<td>1-ethyl-3-(3-dimethylamino)propyl carbodiimide, hydrochloride</td>
<td>(CAS-No.) 25952-53-8 (EC-No.) 247-361-2</td>
<td>100</td>
<td>Skin Irrit. 2, H315 Eye Dam. 1, H318 STOT SE 3, H335</td>
</tr>
</tbody>
</table>

Full text of H-statements: see section 16

3.2. Mixtures
Not applicable
### SECTION 4: First aid measures

#### 4.1. Description of first aid measures


**First-aid measures after inhalation**: Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.

**First-aid measures after skin contact**: Wash immediately with lots of water. Take victim to a doctor if irritation persists.

**First-aid measures after eye contact**: Rinse immediately with plenty of water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Do not apply neutralizing agents. Take victim to an ophthalmologist.

**First-aid measures after ingestion**: Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Do not induce vomiting. Consult a doctor/medical service if you feel unwell. Ingestion of large quantities: immediately to hospital.

#### 4.2. Most important symptoms and effects, both acute and delayed

**Symptoms/effects after inhalation**: Irritation of the respiratory tract. Irritation of the nasal mucous membranes.

**Symptoms/effects after skin contact**: Tingling/irritation of the skin.

**Symptoms/effects after eye contact**: Corrosion of the eye tissue. Inflammation/damage of the eye tissue.

#### 4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media


**Unsuitable extinguishing media**: Quick-acting BC powder extinguisher. Quick-acting CO2 extinguisher.

#### 5.2. Special hazards arising from the substance or mixture

**Hazardous decomposition products in case of fire**: Toxic fumes may be released.

#### 5.3. Advice for firefighters

**Precautionary measures fire**: Exposure to fire/heat: keep upwind. Exposure to fire/heat: consider evacuation. Exposure to fire/heat: have neighbourhood close doors and windows.

**Firefighting instructions**: Dilute toxic gases with water spray.

**Protection during firefighting**: Heat/fire exposure: compressed air/oxygen apparatus.

### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

##### 6.1.1. For non-emergency personnel


**Emergency procedures**: Mark the danger area. Prevent dust cloud formation. No naked flames. Wash contaminated clothes.

**Measures in case of dust release**: In case of dust production: keep upwind. Dust production: have neighbourhood close doors and windows.

##### 6.1.2. For emergency responders

**Protective equipment**: Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

#### 6.2. Environmental precautions

Avoid release to the environment.

#### 6.3. Methods and material for containment and cleaning up

**For containment**: Contain released product, pump into suitable containers. Plug the leak, cut off the supply. Knock down/dilute dust cloud with water spray.

**Methods for cleaning up**: Stop dust cloud by covering with sand/earth. Scoop solid spill into closing containers. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling.

**Other information**: Dispose of materials or solid residues at an authorized site.

#### 6.4. Reference to other sections

For further information refer to section 13.
1-ethyl-3-(3-dimethylamino)propyl carbodiimide, hydrochloride

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according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling: Avoid raising dust. Keep away from naked flames/heat. Carry operations in the open/under local exhaust/ventilation or with respiratory protection. Comply with the legal requirements. Remove contaminated clothing immediately. Clean contaminated clothing. Thoroughly clean/dry the installation before use.

Hygiene measures: Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions: Store locked up. Store in a well-ventilated place. Keep container tightly closed. Keep cool.

Heat and ignition sources: KEEP SUBSTANCE AWAY FROM: heat sources.

Information on mixed storage: KEEP SUBSTANCE AWAY FROM: water/moisture.

Storage area: Store in a dry area. Meet the legal requirements.

Special rules on packaging: SPECIAL REQUIREMENTS: closing. watertight. dry. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Exposure controls

Appropriate engineering controls:
Ensure good ventilation of the work station.

Hand protection:
Gloves

Eye protection:
Face shield. In case of dust production: protective goggles

Skin and body protection:
Protective clothing. In case of dust production: head/neck protection. In case of dust production: dustproof clothing

Respiratory protection:
Dust production: dust mask with filter type P2

Environmental exposure controls:
Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state: Solid
Appearance: Crystalline solid. Crystalline powder.
Molecular mass: 191.71 g/mol
Colour: White.
Odour: Odourless.
Odour threshold: No data available
pH: No data available
Relative evaporation rate (butylacetate=1): No data available
Melting point: 108 °C
Freezing point: Not applicable
Boiling point: No data available
Flash point: Not applicable
Auto-ignition temperature: Not applicable
Decomposition temperature: No data available
Flammability (solid, gas): Non flammable.
Vapour pressure: No data available
# 1-ethyl-3-(3-dimethylamino)propyl carbodiimide, hydrochloride

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Relative vapour density at 20 °C: Not applicable
Relative density: Not applicable
Solubility: Moderately soluble in water, Water: 3.2 g/100ml
Log Pow: 0.21 (Estimated value)
Viscosity, kinematic: Not applicable
Viscosity, dynamic: No data available
Explosive properties: No data available
Oxidising properties: No data available
Explosive limits: Not applicable

<table>
<thead>
<tr>
<th>9.2. Other information</th>
</tr>
</thead>
<tbody>
<tr>
<td>VOC content: 0 %</td>
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<td>Other properties: Hygroscopic</td>
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</table>

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

### 10.2 Chemical stability

Hygroscopic.

### 10.3 Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

### 10.4 Conditions to avoid

None under recommended storage and handling conditions (see section 7).

### 10.5 Incompatible materials

No additional information available

### 10.6 Hazardous decomposition products

Hazardous decomposition products.

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

- **Acute toxicity (oral)**: Not classified
- **Acute toxicity (dermal)**: Not classified
- **Acute toxicity (inhalation)**: Not classified
- **Skin corrosion/irritation**: Causes skin irritation.
- **Serious eye damage/irritation**: Causes serious eye damage.
- **Respiratory or skin sensitisation**: Not classified
- **Germ cell mutagenicity**: Not classified
- **Carcinogenicity**: Not classified
- **Reproductive toxicity**: Not classified
- **STOT-single exposure**: May cause respiratory irritation.
- **STOT-repeated exposure**: Not classified
- **Aspiration hazard**: Not classified
- **Potential adverse human health effects and symptoms**: Causes skin irritation. May cause respiratory irritation. Causes serious eye damage.

## SECTION 12: Ecological information

### 12.1 Toxicity

- **Ecology - general**: The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.
- **Ecology - air**: Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009).
- **Ecology - water**: No data available on ecotoxicity.
- **Acute aquatic toxicity**: Not classified
- **Chronic aquatic toxicity**: Not classified
12.2. Persistence and degradability

1-ethyl-3-(3-dimethylamino)propyl carbodiimide, hydrochloride (25952-53-8)

Persistence and degradability

Biodegradability in water: no data available.

12.3. Bioaccumulative potential

1-ethyl-3-(3-dimethylamino)propyl carbodiimide, hydrochloride (25952-53-8)

Log Pow 0.21 (Estimated value)

Bioaccumulative potential

Low potential for bioaccumulation (Log Kow < 4).

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional legislation (waste) : LWCA (the Netherlands): KGA category 04.


Product/Packaging disposal recommendations : Use appropriate containment to avoid environmental contamination. Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Remove to an incinerator for chlorinated waste materials with energy recovery. Dissolve or mix with a combustible solvent.


European List of Waste (LoW) code : 15 01 10* - packaging containing residues of or contaminated by dangerous substances 16 03 05* - organic wastes containing dangerous substances

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number

UN-No. (ADR) : Not regulated
UN-No. (IMDG) : Not regulated
UN-No. (IATA) : Not regulated
UN-No. (ADN) : Not regulated
UN-No. (RID) : Not regulated

14.2. UN proper shipping name

Proper Shipping Name (ADR) : Not regulated
Proper Shipping Name (IMDG) : Not regulated
Proper Shipping Name (IATA) : Not regulated
Proper Shipping Name (ADN) : Not regulated
Proper Shipping Name (RID) : Not regulated

14.3. Transport hazard class(es)

ADR

Transport hazard class(es) (ADR) : Not regulated

IMDG

Transport hazard class(es) (IMDG) : Not regulated

IATA

Transport hazard class(es) (IATA) : Not regulated

ADN

Transport hazard class(es) (ADN) : Not regulated
RID
Transport hazard class(es) (RID) : Not regulated

14.4. Packing group
Packing group (ADR) : Not regulated
Packing group (IMDG) : Not regulated
Packing group (IATA) : Not regulated
Packing group (ADN) : Not regulated
Packing group (RID) : Not regulated

14.5. Environmental hazards
Dangerous for the environment : No
Marine pollutant : No
Other information : No supplementary information available

14.6. Special precautions for user
- Overland transport
Not regulated
- Transport by sea
Not regulated
- Air transport
Not regulated
- Inland waterway transport
Not regulated
- Rail transport
Not regulated

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code
Not applicable

SECTION 15: Regulatory information
15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU-Regulations
No REACH Annex XVII restrictions
1-ethyl-3-(3-dimethylamino)propyl carbodiimide, hydrochloride is not on the REACH Candidate List
1-ethyl-3-(3-dimethylamino)propyl carbodiimide, hydrochloride is not on the REACH Annex XIV List
VOC content : 0 %

15.1.2. National regulations
Not listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. Chemical safety assessment
No chemical safety assessment has been carried out

SECTION 16: Other information
Full text of H- and EUH-statements:

Eye Dam. 1 Serious eye damage/eye irritation, Category 1
Skin Irrit. 2 Skin corrosion/irritation, Category 2
STOT SE 3 Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation
H315 Causes skin irritation.
H318 Causes serious eye damage.
H335 May cause respiratory irritation.
1-ethyl-3-(3-dimethylamino)propyl carbodiimide, hydrochloride
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Safety Data Sheet applicable for regions : GB - United Kingdom

SDS EU (REACH Annex II)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.