Safety Data Sheet

Cat. # BC25-50

EDC

Size: 50mg
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-ethylcarbodiimide hydrochloride / 1,3-propanediamine, N'-(ethylcarbonimidoyl)-N,N-dimethyl-, monohydrochloride / EDAP (=1-ethyl-3-(3-dimethylamino)propyl carbodiimide, hydrochloride) / EDC (=1-ethyl-3-(3-dimethylamino)propyl carbodiimide, hydrochloride) / EDC-HCl (=1-Ethyl-3-(3-dimethylaminopropyl)propyl carbodiimide, Hydrochlorid) / EDCI (=1-ethyl-3-(3-dimethylaminopropyl)propyl carbodiimide, hydrochloride) / N-(3-dimethylaminopropyl)-N'-(3-diethylaminopropyl)carbodiimide hydrochloride / N'-ethyl-N'-(3-dimethylaminopropyl)carbodiimide hydrochloride / N-Ethyl-N'-(3-dimethylaminopropyl)carbodiimide hydrochloride / WSC (=1-ethyl-3-(3-dimethylamino)propylcarbodiimide, hydrochloride) / WSC-HCl (=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>
<thead>
<tr>
<th>Country</th>
<th>Organisation/Company</th>
<th>Address</th>
<th>Emergency number</th>
<th>Comment</th>
</tr>
</thead>
<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>
<td></td>
</tr>
<tr>
<td>United Kingdom</td>
<td>National Poisons Information Service (Cardiff Centre)</td>
<td>Penarth CF64 2XX Cardiff</td>
<td>0344 892 0111</td>
<td></td>
</tr>
<tr>
<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>
<td></td>
</tr>
<tr>
<td>United Kingdom</td>
<td>National Poisons Information Service (Newcastle Centre)</td>
<td>Claremont Place Newcastle-upon-Tyne NE1 4LX Newcastle</td>
<td>0344 892 0111</td>
<td></td>
</tr>
</tbody>
</table>
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

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]

Hazard pictograms (CLP):

<table>
<thead>
<tr>
<th>GHS05</th>
<th>GHS07</th>
</tr>
</thead>
</table>

CLP Signal word: Danger
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.
- P321 - 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.
- 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>
</tr>
</thead>
<tbody>
<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
1-ethyl-3-(3-dimethylamino)propyl carbodiimide, hydrochloride
Safe Storage Data Sheet

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


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.


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.
**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

Safety Data Sheet

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

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

9.2. Other information
VOC content : 0 %
Other properties : Hygroscopic.

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
1.2. Persistence and degradability

| 1-ethyl-3-(3-dimethylamino)propyl carbodiimide, hydrochloride (25952-53-8) | Biodegradability in water: no data available. |

1.3. 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). |

1.4. Mobility in soil

No additional information available

1.5. Results of PBT and vPvB assessment

No additional information available

1.6. 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.
- **Waste treatment methods:** Waste treatment methods.
- **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
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

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

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.