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A Geno Technology, Inc. (USA) brand name

Safety Data Sheet

Cat. # BC25-1

EDC (1-Ethyl-3-[3-dimethylaminopropyl]carbodiimide hydrochloride)

Size: 1g





Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations Date of issue: 03/25/2016 Revision date: 05/11/2017 Version: 7.1

CE	СТІ	1.	do	ntifi	cati	on
SE			lue		Call	

1.1. Identification			
Product form	: Substance		
Substance name	1-ethyl-3-(3-dimethylamino)propyl carbodiimide, hydrochloride		
Chemical name	: EDC		
CAS-No.	: 25952-53-8		
Product code	: 009E		
Formula	: C8H17N3.HCI		
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) / EDCI (=1-ethyl-3-(3- dimethylamino)propyl carbodiimide, hydrochloride) / N-(3-dimethylaminopropyl)-N'- ethylcarbodiimide hydrochloride / N'-(ethylcarbonimidoyl)-N,N-dimethylpropane-1,3-diamine monohydrochloride / N-ethyl-N'-(3-diethylaminopropyl)carbodiimide hydrochloride / WSC (=1- ethyl-3-(3-dimethylamino)propyl carbodiimide, hydrochloride)		
BIG No	: 26531		
1.2. Recommended use and restriction	is on use		
No additional information available			
4.0 Ourseller			

Supplier 1.3.

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1.4. **Emergency telephone number**

Emergency number

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

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS US classification

- Acute toxicity (oral) Category 4 Acute toxicity (dermal) Category 3 Skin corrosion/irritation Category 2 Serious eye damage/eye irritation Category 2 Skin sensitization, Category 1 Specific target organ toxicity (repeated exposure) Category 2 Hazardous to the aquatic environment - Acute Hazard Category 1 Hazardous to the aquatic environment - Chronic Hazard Category 1
- H302 Harmful if swallowed
- H311 Toxic in contact with skin
- H315 Causes skin irritation
- H319 Causes serious eye irritation
- H317 May cause an allergic skin reaction
- H373 May cause damage to organs through prolonged or repeated exposure
- H400 Very toxic to aquatic life
- H410 Very toxic to aquatic life with long lasting effects

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS US labeling	
Hazard pictograms (GHS US)	
Signal word (GHS US)	: Danger
Hazard statements (GHS US)	 H302 - Harmful if swallowed H311 - Toxic in contact with skin H315 - Causes skin irritation H317 - May cause an allergic skin reaction H319 - Causes serious eye irritation H373 - May cause damage to organs through prolonged or repeated exposure H400 - Very toxic to aquatic life

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	H410 - Very toxic to aquatic life with long lasting effects
Precautionary statements (GHS US)	 H410 - Very toxic to aquatic life with long lasting effects P260 - Do not breathe dust/fume/gas/mist/vapors/spray. P261 - Avoid breathing dust/fume/gas/mist/vapors/spray. P264 - Wash hands, forearms and face 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/eye protection/face protection. P301+P312 - If swallowed: Call a poison center or doctor if you feel unwell P302+P352 - If on skin: Wash with plenty of water P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing P312 - Call a poison center or doctor if you feel unwell P312 - Call a poison center or doctor if you feel unwell P312 - Specific treatment (see supplemental first aid instruction on this label) P322 - Specific treatment (see supplemental first aid instruction on this label) P330 - Rinse mouth. P333+P313 - If skin irritation occurs: Get medical advice/attention. P333+P313 - If skin irritation or rash occurs: Get medical advice/attention. P333+P313 - If skin irritation persists: Get medical advice/attention. P361+P364 - Take off immediately all contaminated clothing and wash it before reuse. P363 - Wash contaminated clothing before reuse. P363 - Wash contaminated clothing before reuse. P363 - Wash contaminated clothing before reuse. P363 - Billege. 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 which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Substance type	: Mono-constituent			
Name	Common Name (Synonyms)	Product identifier	%	GHS US classification
1-ethyl-3-(3-dimethylamino)propyl carbodiimide, hydrochloride (Main constituent)	(3- dimethylaminopropyl)ethylcarbodiimi de 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) / EDCI (=1-ethyl-3-(3-dimethylamino)propyl carbodiimide, hydrochloride) / N-(3- dimethylaminopropyl)-N'- ethylcarbodiimide hydrochloride / N'- (ethylcarbonimidoyl)-N,N- dimethylpropane-1,3-diamine monohydrochloride / N-ethyl-N'-(3- diethylaminopropyl)carbodiimide hydrochloride / WSC (=1-ethyl-3-(3- dimethylamino)propyl carbodiimide, hydrochloride)	(CAS-No.) 25952-53-8	100	Acute Tox. 4 (Oral), H302 Acute Tox. 3 (Dermal), H311 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1, H317 STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410

Full text of hazard classes and H-statements : see section 16

3.2. Mixtures

Not applicable

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SECTION 4: First-aid measures				
4.1. Description of first aid measures				
First-aid measures general :	Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with laboured breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital.			
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. Do not apply (chemical) neutralizing agents without medical advice. Consult a doctor/medical service.			
First-aid measures after eye contact :	Rinse immediately with plenty of water. Remove contact lenses, if present and easy to do. Continue rinsing. Do not apply (chemical) neutralizing agents without medical advice. Take victim to an ophthalmologist if irritation persists.			
First-aid measures after ingestion :	Rinse mouth with water. Do not apply (chemical) neutralizing agents without medical advice. Call Poison Information Centre (www.big.be/antigif.htm). Consult a doctor/medical service if you feel unwell. Ingestion of large quantities: immediately to hospital. Take the container/vomit to the doctor/hospital.			
4.2. Most important symptoms and effects	(acute and delayed)			
Potential Adverse human health effects and symptoms	Harmful if swallowed. Toxic in contact with skin. Causes skin irritation. Causes serious eye irritation.			
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 :	Irritation of the eye tissue.			
Symptoms/effects after ingestion :	Gastrointestinal complaints.			
Chronic symptoms :	Irritation of the gastric/intestinal mucosa. Respiratory difficulties.			
4.3. Immediate medical attention and spec	ial treatment, if necessary			
Treat symptomatically.				
SECTION 5: Fire-fighting measures				
5.1. Suitable (and unsuitable) extinguishin	g media			
Suitable extinguishing media :	Quick-acting ABC powder extinguisher. Class A foam extinguisher. Water (quick-acting extinguisher, reel). Water. Class A foam.			
Unsuitable extinguishing media :	Quick-acting BC powder extinguisher. Quick-acting CO2 extinguisher.			
5.2. Specific hazards arising from the cher	nical			
	DIRECT FIRE HAZARD: Non-flammable. Most organic solids may burn if strongly heated. INDIRECT FIRE HAZARD: Heating increases the fire hazard.			
Explosion hazard :	DIRECT EXPLOSION HAZARD: Most organic solids are liable to dust explosion hazard. INDIRECT EXPLOSION HAZARD: Dust cloud can be ignited by a spark.			
5.3. Special protective equipment and pred	cautions for fire-fighters			
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. Take account of toxic/corrosive precipitation water. Take account of toxic fire-fighting water. Use water moderately and if possible collect or contain it.			
Protection during firefighting :	Heat/fire exposure: compressed air/oxygen apparatus.			
SECTION 6: Accidental release measu	ires			
6.1. Personal precautions, protective equi	oment and emergency procedures			
6.1.1. For non-emergency personnel				
6.1.1. For non-emergency personnel				
0 91	Gloves. Face-shield. Protective clothing. Dust cloud production: compressed air/oxygen apparatus. Dust cloud production: dust-tight suit.			
Protective equipment :				

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6.1.2. For emergency responde Protective equipment	 rs 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					
void 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. Take account of toxic/corrosive precipitation water. 				
Methods for cleaning up	: Stop dust cloud by covering with sand/earth. Scoop solid spill into closing containers. Carefully collect the spill/leftovers. Clean contaminated surfaces with an excess of water. Take collected spill to manufacturer/competent authority. Wash clothing and equipment after handling.				
Other information	: Dispose of materials or solid residues at an authorized site.				
6.4. Reference to other section	ns				
For further information refer to section	n 13.				
SECTION 7: Handling and s	torage				
7.1. Precautions for safe hand	lling				
Precautions for safe handling	: Avoid raising dust. Keep away from naked flames/heat. In finely divided state: use spark- /explosionproof appliances. Finely divided: keep away from ignition sources/sparks. 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. Do not discharge the waste into the drain. Powdered form: no compressed air for pumping over. Keep container tightly closed.				
Hygiene measures	: Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product. Contaminated work clothing should not be allowed out of the workplace.				
7.2. Conditions for safe stora	ge, including any incompatibilities				
Storage conditions	: Store locked up. Store in a well-ventilated place. Keep container tightly closed. Keep cool.				
Heat-ignition	: KEEP SUBSTANCE AWAY FROM: heat sources. ignition sources.				
Information on mixed storage	: KEEP SUBSTANCE AWAY FROM: oxidizing agents. (strong) acids. water/moisture.				
Storage area	Store in a cool area. Store in a dry area. Keep container in a well-ventilated place. Keep locked up. Unauthorized persons are not admitted. Meet the legal requirements.				
Special rules on packaging	: SPECIAL REQUIREMENTS: closing. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.				
SECTION 8: Exposure contr	ols/personal protection				
8.1. Control parameters					
1-ethyl-3-(3-dimethylamino)propy	rl carbodiimide, hydrochloride (25952-53-8)				
No additional information available					
8.2. Appropriate engineering					
Appropriate engineering controls	: Ensure good ventilation of the work station.				
Environmental exposure controls	: Avoid release to the environment.				
	sures/Personal protective equipment				
Hand protection:					
Protective gloves against chemicals	; (EN374)				
Eye protection:					
Face shield. In case of dust product	ion: 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 P3. High dust production: self-contained breathing apparatus

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SECTION 9: Physical and chemical properties		
9.1. Information on basic physical and c	·	
Physical state	: Solid	
Appearance	: Solid.	
Color	: White to off-white	
Odor	: Odourless	
Odor threshold	: No data available	
pH	: No data available	
Melting point	: 120 °C (1013 hPa, Equivalent or similar to OECD 102)	
Freezing point	: Not applicable	
Boiling point	: Not applicable (decomposes)	
Flash point	: Not applicable	
Relative evaporation rate (butyl acetate=1)	: No data available	
Flammability (solid, gas)	: Non flammable.	
Vapor pressure	: < 0.00002 hPa (20 °C, EU Method A.4: Vapour Pressure)	
Relative vapor density at 20 °C	: Not applicable	
Relative density	: Not applicable	
Specific gravity / density	: 1044 kg/m ³ (20 °C, OECD 109: Density of Liquids and Solids)	
Molecular mass	: 191.71 g/mol	
Solubility	: Soluble in water.	
	Water: > 100 g/100ml (20 °C, OECD 105: Water Solubility)	
Log Pow	: -2.98 (Experimental value, OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method, 20 °C)	
Auto-ignition temperature	: Not applicable	
Decomposition temperature	: >= 125 °C (Equivalent or similar to OECD 102, 1013 hPa)	
Viscosity, kinematic	: No data available	
Viscosity, dynamic	: No data available	
Explosion limits	: Not applicable	
Explosive properties	: No data available	
Oxidizing properties	: No data available	
9.2. Other information		
VOC content	: 0%	
SECTION 10: Stability and reactivity		
10.1. Reactivity		
The product is non-reactive under normal condit	ions of use, storage and transport.	
10.2. Chemical stability		
Stable under normal conditions.		
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) : Harmful if swallowed.		
Acute toxicity (dermal)	: Toxic in contact with skin.	

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Acute toxicity (inhalation)	: Not classified
1-ethyl-3-(3-dimethylamino)propyl carbodiir	nide, hydrochloride (25952-53-8)
LD50 oral rat	500 mg/kg body weight (OECD 423: Acute Oral Toxicity – Acute Toxic Class Method, Rat, Female, Experimental value, Oral, 14 day(s))
LD50 dermal rat	200 - 1000 mg/kg body weight (OECD 402: Acute Dermal Toxicity, 24 h, Rat, Male / female Experimental value, Dermal)
ATE US (oral)	500 mg/kg body weight
ATE US (dermal)	200 mg/kg body weight
kin corrosion/irritation	: Causes skin irritation.
Serious eye damage/irritation	: Causes serious eye irritation.
Respiratory or skin sensitization	: May cause an allergic skin reaction.
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
eproductive toxicity	: Not classified
Specific target organ toxicity – single exposure	: Not classified
pecific target organ toxicity – repeated xposure	: May cause damage to organs through prolonged or repeated exposure.
spiration hazard	: Not classified
/iscosity, kinematic	: No data available
Potential Adverse human health effects and symptoms	: Harmful if swallowed. Toxic in contact with skin. Causes skin irritation. Causes serious eye irritation.
symptoms/effects after inhalation	: Irritation of the respiratory tract. Irritation of the nasal mucous membranes.
ymptoms/effects after skin contact	: Tingling/irritation of the skin.
ymptoms/effects after eye contact	: Irritation of the eye tissue.
symptoms/effects after ingestion	: Gastrointestinal complaints.
Chronic symptoms	: Irritation of the gastric/intestinal mucosa. Respiratory difficulties.

SECTION 12: Ecological information			
12.1. Toxicity			
Ecology - general	The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment. Very toxic to aquatic life with long lasting effects.		
Ecology - air	Not included in the list of substances which may contribute to the greenhouse effect (IPCC). Not included in the list of fluorinated greenhouse gases (Regulation (EU) No 517/2014). Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009).		
Ecology - water	Very toxic to crustacea. Toxic to fishes. Toxic to algae. Photolysis in water.		
1-ethyl-3-(3-dimethylamino)propyl carbodiimid	de, hydrochloride (25952-53-8)		
LC50 fish 1	4.6 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Cyprinus carpio, Static system, Experimental value, GLP)		
EC50 Daphnia 1	0.41 mg/l (ISO 6341 15 Water quality - Determination of the Inhibition of the Mobility of Daphnia magna Straus (Cladocera, Crustaceae), 48 h, Daphnia magna, Experimental value)		
12.2. Persistence and degradability			
1-ethyl-3-(3-dimethylamino)propyl carbodiimid	de, hydrochloride (25952-53-8)		
Persistence and degradability	Not readily biodegradable in water.		
12.3. Bioaccumulative potential			
1-ethyl-3-(3-dimethylamino)propyl carbodiimide, hydrochloride (25952-53-8)			
Log Pow	-2.98 (Experimental value, OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method, 20 °C)		
Bioaccumulative potential	Not bioaccumulative.		
12.4. Mobility in soil			
1-ethyl-3-(3-dimethylamino)propyl carbodiimio	de, hydrochloride (25952-53-8)		

1-ethyl-3-(3-dimethylamino)propyl carbodiimide, hydrochloride (25952-53-8)		
Ecology - soil	No (test)data on mobility of the substance available.	

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12.5. Other adverse effects

No additional information available

SECTION 13: Disposal consideration 13.1. Disposal methods	IS
Waste treatment methods	: Waste treatment methods.
Product/Packaging disposal recommendations	: Do not discharge into drains or the environment. 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. Refer to manufacturer/supplier for information on recovery/ recycling. Remove to an incinerator for chlorinated waste materials with energy recovery. Dissolve or mix with a combustible solvent.
Additional information	: Hazardous waste according to Directive 2008/98/EC, as amended by Regulation (EU) No 1357/2014 and Regulation (EU) No 2017/997.

SECTION 14: Transport information

Department of Transportation (DOT)
In accordance with DOT

Dangerous for the environment	
Marine pollutant	



Other information

Transportation of Dangerous Goods

Transport by sea

Transport document description (IMDG)	: UN 2811 toxic solid, organic, n.o.s., 6.1, III, MARINE POLLUTANT
UN-No. (IMDG)	: 2811
Proper Shipping Name (IMDG)	: toxic solid, organic, n.o.s.
Class (IMDG)	: 6.1 - Toxic substances
Packing group (IMDG)	: III - substances presenting low danger
EmS-No. (1)	: F-A
EmS-No. (2)	: S-A
Marine pollutant	: Yes
	^



Air transport

Transport document description (IATA)		
UN-No. (IATA)		
Proper Shipping Name (IATA)		
Class (IATA)		
Packing group (IATA)		

: UN 2811 Toxic solid, organic, n.o.s., 6.1, III

: No supplementary information available.

- : 2811
- : Toxic solid, organic, n.o.s.
- : 6.1 Toxic Substances
- : III Minor Danger

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SECTION 15: Regulatory information			
15.1. US Federal regulations			
1-ethyl-3-(3-dimethylamino)propyl carbodiimide, hydrochloride (25952-53-8)			
Not listed on the United States TSCA (Toxic Substances Control Act) inventory			

15.2. International regulations

CANADA

EU-Regulations

National regulations No additional information available

15.3. US State regulations

SECTION 16: Other information

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Revision date

: 05/11/2017

Full text of H-phrases:

uli					
	H302	Harmful if swallowed			
	H311	Toxic in contact with skin			
	H315	Causes skin irritation			
	H317	May cause an allergic skin reaction			
	H319	Causes serious eye irritation			
	H373	May cause damage to organs through prolonged or repeated exposure			
	H400	Very toxic to aquatic life			
	H410	Very toxic to aquatic life with long lasting effects			

SDS US (GHS HazCom 2012)

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.