

ENCES G-Biosciences, St Louis, MO, USA | 1-800-628-7730 | 1-314-991-6034 | technical@GBiosciences.com

A Geno Technology, Inc. (USA) brand name

Safety Data Sheet

Cat. # 786-067

HOOK[™] Peptide Coupling Kit (Amine Reactive)

Size: 5 Reactions





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: Id	entification of the subst	ance/mixture and of the	company/undertaking	
1.1. Product ide	ntifier			
Product form		: Substance		
Substance name		, , , , , , , , , , , , , , , , , , ,	propyl carbodiimide, hydrochlori	de
Chemical name		: EDC		
EC-No.		: 247-361-2		
CAS-No.		: 25952-53-8		
Product code		: 009E		
Type of product		: Pure substance,Hygroscopie dry state only	c substance. Preventive measu	res apply to the substance in
Formula		: C8H17N3.HCI		
Synonyms		3-ethylcarbodiimide hydroch dimethyl-, monohydrochloric hydrochloride) / EDC (=1-etl EDCI (=1-ethyl-3-(3-dimethy dimethylaminopropyl)-N'-eth dimethylpropane-1,3-diamin	/lcarbodiimide monohydrochlori loride / 1,3-Propanediamine, N' le / EDAP (=1-ethyl-3-(3-dimeth hyl-3-(3-dimethylamino)propyl c 'lamino)propyl carbodiimide, hyu ylcarbodiimide hydrochloride / hy e monohydrochloride / N-ethyl-l mide hydrochloride / WSC (=1-ethyl-)	-(ethylcarbonimidoyl)-N,N- ylamino)propyl carbodiimide, arbodiimide, hydrochloride) / drochloride) / N-(3- N'-(ethylcarbonimidoyl)-N,N- N'-(3-
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 ide No additional inform				
1.2.2. Uses advise No additional inform	•			
Geno Technology, 9800 Page Avenue 63132-1429 Saint I T 800-628-7730 - F	ouis - United States			
1.4. Emergency telephone number Emergency number : Chemtrec 1-800-424-9300 (USA/Canada), +1-703-527-3887 (Intl)				
Country	Organisation/Company	Address	Emergency number	Comment

Country	Organisation/Company	Address	Emergency number	Comment
United Kingdom	National Poisons Information Service (Belfast Centre) Royal Victoria Hospital	Grosvenor Road BT12 6BA Belfast	0344 892 0111	
United Kingdom	National Poisons Information Service (Birmingham Centre) City Hospital	Dudley Road B18 7QH Birmingham	0344 892 0111	
United Kingdom	National Poisons Information Service (Cardiff Centre) Gwenwyn Ward, Llandough Hospital	Penarth CF64 2XX Cardiff	0344 892 0111	
United Kingdom	National Poisons Information Service Edinburgh Royal Infirmary of Edinburgh	Little France Crescent EH16 4SA Edinburgh	0344 892 0111	
United Kingdom	Guy's & St Thomas' Poisons Unit Medical Toxicology Unit, Guy's & St Thomas' Hospital Trust	Avonley Road SE14 5ER London	+44 20 7188 7188	
United Kingdom	National Poisons Information Service (Newcastle Centre) Regional Drugs and Therapeutics Centre, Wolfson Unit	Claremont Place Newcastle-upon-Tyne NE1 4LP Newcastle	0344 892 0111	

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. May cause damage to organs through prolonged or repeated exposure. Toxic in contact with skin. Harmful if swallowed. May cause an allergic skin reaction. Causes serious eye irritation. Very toxic to aquatic life with long lasting effects.

2.2. Label elements Labelling according to Regulation (EC) No. 1272/2008 [CLP] Hazard pictograms (CLP) GHS05 GHS07 CLP Signal word : Danger : H315 - Causes skin irritation. Hazard statements (CLP) H318 - Causes serious eye damage. H335 - May cause respiratory irritation. : P261 - Avoid breathing dust/fume/gas/mist/vapours/spray. Precautionary statements (CLP) 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 CENTRE or doctor if you feel unwell. P321 - Specific treatment (see supplemental first aid instruction on this label). P332+P313 - If skin irritation occurs: Get medical advice/attention. 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

This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII

This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

SECTION 3: Composition/information of 3.1. Substances Substance type	n ingredients : Mono-constituent		
Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
1-ethyl-3-(3-dimethylamino)propyl carbodiimide, hydrochloride	(CAS-No.) 25952-53-8 (EC-No.) 247-361-2	100	Skin Irrit. 2, H315 Eye Dam. 1, H318 STOT SE 3, H335
Full text of H-statements: see section 16 3.2. Mixtures Not applicable			

Safety Data Sheet endment Regulation (EU) 2015/830

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830			
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, I Symptoms/effects after inhalation			
Symptoms/effects after skin contact	: Irritation of the respiratory tract. Irritation of the nasal mucous membranes. : Tingling/irritation of the skin.		
Symptoms/effects after eve contact	: Irritation of the eye tissue.		
Symptoms/effects after ingestion	: Gastrointestinal complaints.		
Chronic symptoms	: Irritation of the gastric/intestinal mucosa. Respiratory difficulties.		
4.3. Indication of any immediate medical atte	5		
Treat symptomatically.			
SECTION 5: Firefighting measures			
5.1. Extinguishing media	Oright of the ADO must be offered by Oleve A form of the Weber (with original		
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. Special hazards arising from the substa Fire hazard	Ince or mixture : 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.		
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. 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 measures			
6.1. Personal precautions, protective equipment and emergency procedures			

6.1.1. For non-emergency personnel	
Protective equipment	: Gloves. Face-shield. Protective clothing. Dust cloud production: compressed air/oxygen apparatus. Dust cloud production: dust-tight suit.
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.

Safety Data Sheet

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

6.3. Methods and material for containn	nent 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 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. 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 storage, including a	ny 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. 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.		
7.3. Specific end use(s)			

No additional information available

SECTION 8: Exposure controls/personal protection 8.1. Control parameters		
1-ethyl-3-(3-dimethylamino)propyl carbodiimide, hydrochloride (25952-53-8)		
DNEL/DMEL (Workers)		
Acute - systemic effects, inhalation	1.64 mg/m ³	
Long-term - systemic effects, dermal	0.467 mg/kg bw/day	
Long-term - systemic effects, inhalation	1.64 mg/m ³	
PNEC (Water)		
PNEC aqua (freshwater)	0.005 mg/l	
PNEC aqua (marine water)	< 0.001 mg/l	
PNEC (STP)		
PNEC sewage treatment plant	10 mg/l	
8.2. Exposure controls		
Appropriate engineering controls:		
Ensure good ventilation of the work station.		
Hand protection:		
Protective gloves against chemicals (EN374)		
Eye protection:		
Face shield. In case of dust production: prote	active goggles	

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

Safety Data Sheet

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

Respiratory protection:

Dust production: dust mask with filter type P3. High dust production: self-contained breathing apparatus

Environmental exposure controls:

Avoid release to the environment.

SECTION 9: Physical and chemical properties		
9.1. Information on basic physical and che	mical properties	
Physical state	: Solid	
Appearance	: Solid.	
Molecular mass	: 191.71 g/mol	
Colour	: White to off-white.	
Odour	: Odourless.	
Odour threshold	: No data available	
рН	: No data available	
Relative evaporation rate (butylacetate=1)	: 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	
Auto-ignition temperature	: Not applicable	
Decomposition temperature	: >= 125 °C (Equivalent or similar to OECD 102, 1013 hPa)	
Flammability (solid, gas)	: Non flammable.	
Vapour pressure	: < 0.00002 hPa (20 °C, EU Method A.4: Vapour Pressure)	
Relative vapour density at 20 °C	: Not applicable	
Relative density	: Not applicable	
Density	: 1044 kg/m³ (20 °C, OECD 109: Density of Liquids and Solids)	
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)	
Viscosity, kinematic	: No data available	
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%	

 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

 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.

SECTION 11: Toxicologica	information
11.1. Information on toxicolog	ical effects
Acute toxicity (oral)	: Not classified
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified

OTION 4

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

1-ethyl-3-(3-dimethylamino)propyl carbodiimide, hydrochloride (25952-53-8)		
LD50 oral rat	500 mg/kg bodyweight (OECD 423: Acute Oral Toxicity – Acute Toxic Class Method, Rat, Female, Experimental value, Oral, 14 day(s))	
LD50 dermal rat	200 - 1000 mg/kg bodyweight (OECD 402: Acute Dermal Toxicity, 24 h, Rat, Male / female, Experimental value, Dermal)	
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	: Harmful if swallowed. Toxic in contact with skin. Causes skin irritation. Causes serious eye irritation.	

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. Very toxic to aquatic life with long lasting effects.
	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.
Acute aquatic toxicity :	Not classified
Chronic aquatic toxicity :	Not classified
1-ethyl-3-(3-dimethylamino)propyl carbodiimi	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 carbodiimi	de, hydrochloride (25952-53-8)
Persistence and degradability	Not readily biodegradable in water.
12.3. Bioaccumulative potential	
1-ethyl-3-(3-dimethylamino)propyl carbodiimi	de, 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 carbodiimi	de, hydrochloride (25952-53-8)
Ecology - soil	No (test)data on mobility of the substance available.
12.5. Results of PBT and vPvB assessment	
1-ethyl-3-(3-dimethylamino)propyl carbodiimi	de, hydrochloride (25952-53-8)
This substance/mixture does not meet the PBT criteria	of REACH regulation, annex XIII
This substance/mixture does not meet the vPvB criteria	of REACH regulation, annex XIII
12.6. Other adverse effects No additional information available	

SECTION 13: Disposal considerations

13.1. Waste treatment methods

: Waste treatment methods.

Waste treatment methods

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

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.
European List of Waste (LoW) code	: 15 01 10* - packaging containing residues of or contaminated by dangerous substances 07 05 13* - solid wastes containing dangerous substances

SECTION 14: Transport information	
In accordance with ADR / RID / IMDG / IATA / ADN	
14.1. UN number	
UN-No. (ADR)	: UN 2811
UN-No. (IMDG)	: UN 2811
UN-No. (IATA)	: UN 2811
UN-No. (ADN)	: UN 2811
UN-No. (RID)	: UN 2811
14.2. UN proper shipping name	
Proper Shipping Name (ADR)	: Toxic solid, organic, n.o.s.
Proper Shipping Name (IMDG)	: toxic solid, organic, n.o.s.
Proper Shipping Name (IATA)	: Toxic solid, organic, n.o.s.
Proper Shipping Name (ADN)	: Toxic solid, organic, n.o.s.
Proper Shipping Name (RID)	: Toxic solid, organic, n.o.s.
Transport document description (ADR)	: UN 2811 Toxic solid, organic, n.o.s., 6.1, III, (E)
Transport document description (IMDG)	: UN 2811 toxic solid, organic, n.o.s., 6.1, III, MARINE POLLUTANT
Transport document description (IATA)	: UN 2811 Toxic solid, organic, n.o.s., 6.1, III
Transport document description (ADN)	: UN 2811 Toxic solid, organic, n.o.s., 6.1, III
Transport document description (RID)	: UN 2811 Toxic solid, organic, n.o.s., 6.1, III
14.3. Transport hazard class(es)	

ADR

Transport hazard class(es) (ADR) Danger labels (ADR)

IMDG

Transport hazard class(es) (IMDG) Danger labels (IMDG)

ΙΑΤΑ

Transport hazard class(es) (IATA) Hazard labels (IATA)





: 6.1 : 6.1







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

ADN	
Transport hazard class(es) (ADN)	: 6.1
Danger labels (ADN)	: 6.1
	6
RID	
Transport hazard class(es) (RID)	: 6.1
Danger labels (RID)	: 6.1
14.4. Packing group	
Packing group (ADR)	: III
Packing group (IMDG)	: III
Packing group (IATA)	: III
Packing group (ADN)	: III
Packing group (RID)	: 111
14.5. Environmental hazards	
Dangerous for the environment	: No
Marine pollutant	: Yes (IMDG only)
Other information	: No supplementary information available
14.6. Special precautions for user	
Overland transport	
Transport regulations (ADR)	: Subject
Classification code (ADR)	: T2
Hazard identification number (Kemler No.) Orange plates	: 60 : 60 2811
Tunnel restriction code (ADR)	: E
EAC code	: 2X
Transport by sea	
Transport regulations (IMDG)	: Subject
EmS-No. (Fire)	: F-A
EmS-No. (Spillage)	: S-A
Air transport	
Transport regulations (IATA)	: Subject to the provisions
Inland waterway transport	
Classification code (ADN)	: T2
Carriage permitted (ADN)	: T
Rail transport	
Transport regulations (RID)	: Subject
Classification code (RID)	: T2
14.7. Transport in bulk according to Ann Not applicable	ex II of Marpol and the IBC Code

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

Safety Data Sheet

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

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

1-ethyl-3-(3-dimethylamino)propyl carbodiimide, hydrochloride is not subject to REGULATION (EU) No 649/2012 OF THE EUROPEAN

PARLIAMENT AND OF THE COUNCIL of 4 July 2012 concerning the export and import of hazardous chemicals.

1-ethyl-3-(3-dimethylamino)propyl carbodiimide, hydrochloride is not subject to Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC

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.

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.



Optimizer Buffer IV [5X] Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 Revision date: 5/11/2017

SECTION 1: Identification of the subst	ance/mixture and of the cor	nany/undertak	ina
1.1. Product identifier		ipany/undertak	
Product form	: Mixture		
Product name	: Optimizer Buffer IV [5X]		
Product code	: 2640		
Product group	: Trade product		
1.2. Relevant identified uses of the substa	•	d against	
1.2.1. Relevant identified uses			
No additional information available			
1.2.2. Uses advised against			
No additional information available			
1.3. Details of the supplier of the safety da	ta 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	s.com		
1.4. Emergency telephone number			
	Chemtrec 1-800-424-9300 (USA/Ca	nada), +1-703-527-3	887 (Intl)
SECTION 2: Hazards identification			
2.1. Classification of the substance or mix	ture		
Classification according to Regulation (EC) No.			
Not classified			
Adverse physicochemical, human health and ei			
To our knowledge, this product does not present ar	ny particular risk, provided it is handled	d in accordance with	good occupational hygiene and safet
practice.			
2.2. Label elements			
Labelling according to Regulation (EC) No. 127			
	2/2008 [CLP]		
	2/2008 [CLP]		
No labelling applicable	2/2008 [CLP]		
No labelling applicable 2.3. Other hazards	2/2008 [CLP]		
No labelling applicable 2.3. Other hazards	2/2008 [CLP]		
No labelling applicable 2.3. Other hazards No additional information available			
No labelling applicable 2.3. Other hazards No additional information available SECTION 3: Composition/information			
No labelling applicable 2.3. Other hazards No additional information available SECTION 3: Composition/information 3.1. Substances			
No labelling applicable 2.3. Other hazards No additional information available SECTION 3: Composition/information 3.1. Substances Not applicable			
No labelling applicable 2.3. Other hazards No additional information available SECTION 3: Composition/information 3.1. Substances Not applicable 3.2. Mixtures	on ingredients	0/	
No labelling applicable 2.3. Other hazards No additional information available SECTION 3: Composition/information 3.1. Substances Not applicable		%	Classification according to
No labelling applicable 2.3. Other hazards No additional information available SECTION 3: Composition/information 3.1. Substances Not applicable 3.2. Mixtures	on ingredients	%	Regulation (EC) No.
No labelling applicable 2.3. Other hazards No additional information available SECTION 3: Composition/information 3.1. Substances Not applicable 3.2. Mixtures Name	on ingredients Product identifier		Regulation (EC) No. 1272/2008 [CLP]
No labelling applicable 2.3. Other hazards No additional information available SECTION 3: Composition/information 3.1. Substances Not applicable 3.2. Mixtures Name Deionized water	on ingredients Product identifier (CAS-No.) 7732-18-5	50 - 80	Regulation (EC) No. 1272/2008 [CLP] Not classified
No labelling applicable 2.3. Other hazards No additional information available SECTION 3: Composition/information 3.1. Substances Not applicable 3.2. Mixtures Name Deionized water MES (2-(N-Morpholino)ethanesulfonic acid)	on ingredients Product identifier (CAS-No.) 7732-18-5 (CAS-No.) 4432-31-9	50 - 80 10 - 50	Regulation (EC) No. 1272/2008 [CLP] Not classified Not classified
No labelling applicable 2.3. Other hazards No additional information available SECTION 3: Composition/information 3.1. Substances Not applicable 3.2. Mixtures Name Deionized water	on ingredients Product identifier (CAS-No.) 7732-18-5	50 - 80	Regulation (EC) No. 1272/2008 [CLP] Not classified

SECTION 4: First aid measures	
4.1. Description of first aid measures	
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing.
First-aid measures after skin contact	: Wash skin with plenty of water.
First-aid measures after eye contact	: Rinse eyes with water as a precaution.
First-aid measures after ingestion	: Call a poison center or a doctor if you feel unwell.
4.2. Most important symptoms and effect	is, both acute and delayed
No additional information available	

Optimizer Buffer IV [5X] Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

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

SECTION 5: Firefighting measures	
5.1. Extinguishing media	
Suitable extinguishing media	: Water spray. Dry powder. Foam. Carbon dioxide.
5.2. Special hazards arising from the substa Hazardous decomposition products in case of fire	ance or mixture : Toxic fumes may be released.
5.3. Advice for firefighters	
Protection during firefighting	: Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measure	es
6.1. Personal precautions, protective equipr	
6.1.1. For non-emergency personnel Emergency procedures	: Ventilate spillage area.
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 a Methods for cleaning up	i <mark>nd cleaning up</mark> : Take up liquid spill into absorbent material.
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	: Ensure good ventilation of the work station. Wear personal protective equipment.
Hygiene measures	: Do not eat, drink or smoke when using this product. Always wash hands after handling the product.
7.2. Conditions for safe storage, including a	
Storage conditions	: Store in a well-ventilated place. Keep cool.
7.3. Specific end use(s) No additional information available	
SECTION 8: Exposure controls/persona	Il 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:	
Protective gloves	
Eye protection:	
Safety glasses	
Skin and body protection:	
Wear suitable protective clothing	
Respiratory protection:	
In case of insufficient ventilation, wear suitable respi	ratory equipment
Environmental exposure controls:	

Avoid release to the environment.

SECTION 9: Physical and	I chemical properties	
9.1. Information on basic ph	ysical and chemical properties	
Physical state	: Liquid	

Optimizer Buffer IV [5X] Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

	•
Colour	: No data available
Odour	: No data available
Odour threshold	: No data available
рН	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: Not applicable
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: Not applicable
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Solubility	: No data available
Log Pow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available
9.2. Other information	

No additional information available

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
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)	: Not classified
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified
sodium chloride (7647-14-5)	
LD50 oral rat	> 3980 mg/kg bodyweight (Rat, Experimental value, 20% aqueous solution, Oral)
LD50 dermal rabbit	> 10000 mg/kg (Rabbit, Experimental value, Dermal)
LC50 inhalation rat (mg/l)	> 42 mg/l air (1 h, Rat, Male, Experimental value, 20% aqueous solution, Inhalation (aerosol))
Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Not classified
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified

Optimizer Buffer IV [5X] Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

12.1. Toxicity	
Ecology - general	: The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.
Acute aquatic toxicity	: Not classified
Chronic aquatic toxicity	: Not classified
sodium chloride (7647-14-5)	
LC50 fish 1	5840 mg/l (ASTM, 96 h, Lepomis macrochirus, Flow-through system, Fresh water, Experimental value)
2.2. Persistence and degradability	
sodium chloride (7647-14-5)	
Persistence and degradability	Biodegradability: not applicable.
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable
2.3. Bioaccumulative potential	
sodium chloride (7647-14-5)	
Log Pow	-3 (Calculated)
Bioaccumulative potential	Not bioaccumulative.
I2.4. Mobility in soil	
sodium chloride (7647-14-5)	
Surface tension	73.03 mN/m (23 °C, 14.5 g/l)
Ecology - soil	No (test)data on mobility of the substance available.
12.5. Results of PBT and vPvB assessment	
Component	
sodium chloride (7647-14-5)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XI

No additional information available

SECTION 13: Disposal considerations	
13.1. Waste treatment methods	
Waste treatment methods	: Waste treatment methods.

SECTION 14: Transport information	
In accordance with ADR / RID / IMDG / IATA / ADN	
14.1. UN number	
UN-No. (ADR)	: Not applicable
UN-No. (IMDG)	: Not applicable
UN-No. (IATA)	: Not applicable
UN-No. (ADN)	: Not applicable
UN-No. (RID)	: Not applicable
14.2. UN proper shipping name	
Proper Shipping Name (ADR)	: Not applicable
Proper Shipping Name (IMDG)	: Not applicable
Proper Shipping Name (IATA)	: Not applicable
Proper Shipping Name (ADN)	: Not applicable
Proper Shipping Name (RID)	: Not applicable
14.3. Transport hazard class(es)	
ADR	
Transport hazard class(es) (ADR)	: Not applicable
IMDG	
Transport hazard class(es) (IMDG)	: Not applicable

Optimizer Buffer IV [5X]

Safety Data Sheet

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

ΙΑΤΑ	
Transport hazard class(es) (IATA)	: Not applicable
ADN	
Transport hazard class(es) (ADN)	: Not applicable
RID	
Transport hazard class(es) (RID)	: Not applicable
14.4. Packing group	
Packing group (ADR)	: Not applicable
Packing group (IMDG)	: Not applicable
Packing group (IATA)	: Not applicable
Packing group (ADN)	: Not applicable
Packing group (RID)	: Not applicable
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 applicable	
Transport by sea	
Not applicable	
Air transport	
Not applicable	
Inland waterway transport	
Not applicable	
Rail transport	
Not applicable	
11	

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

Contains no REACH substances with Annex XVII restrictions

Contains no substance on the REACH candidate list

Contains no REACH Annex XIV substances

Contains no substance subject to REGULATION (EU) No 649/2012 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 concerning the export and import of hazardous chemicals.

Substance(s) are not subject to Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC.

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

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.



Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 Revision date: 5/11/2017

1.1. Product identifier Product form	: Mixture		
Product form			
Product name	: Tube-O-DIALYZER Storage Solutic : Tube-O	ארו ארו	
Product group	: Blend		
8 1		ancient	
	substance or mixture and uses advised a	ayamsı	
I.2.1. Relevant identified uses No additional information available			
I.2.2. Uses advised against No additional information available			
I.3. Details of the supplier of the sa	ifety data sheet		
Geno Technology, Inc./ G-Biosciences 1800 Page Avenue 13132-1429 Saint Louis - United States - 800-628-7730 - F 314-991-1504 echnical@GBiosciences.com - www.GBic	sciences.com		
I.4. Emergency telephone number			
Emergency number	: Chemtrec 1-800-424-9300 (USA/Canad	da), +1-703-527- 3	3887 (Intl)
SECTION 2: Hazards identificati 2.1. Classification of the substance Classification according to Regulation Not classified	or mixture		
2.1. Classification of the substance Classification according to Regulation Not classified Adverse physicochemical, human healt To our knowledge, this product does not p practice.	or mixture (EC) No. 1272/2008 [CLP]	n accordance with	n good occupational hygiene and saf
2.1. Classification of the substance Classification according to Regulation Not classified Adverse physicochemical, human healt To our knowledge, this product does not p poractice. 2.2. Label elements Labelling according to Regulation (EC)	or mixture (EC) No. 1272/2008 [CLP] h and environmental effects resent any particular risk, provided it is handled ir	n accordance with	n good occupational hygiene and saf
2.1. Classification of the substance Classification according to Regulation Not classified Adverse physicochemical, human healt To our knowledge, this product does not p practice. 2.2. Label elements abelling according to Regulation (EC) No labelling applicable	or mixture (EC) No. 1272/2008 [CLP] h and environmental effects resent any particular risk, provided it is handled ir	n accordance with	n good occupational hygiene and saf
2.1. Classification of the substance Classification according to Regulation Not classified Adverse physicochemical, human healt To our knowledge, this product does not p practice. 2.2. Label elements abelling according to Regulation (EC) No labelling applicable 2.3. Other hazards	or mixture (EC) No. 1272/2008 [CLP] h and environmental effects resent any particular risk, provided it is handled ir	n accordance with	n good occupational hygiene and saf
2.1. Classification of the substance Classification according to Regulation Not classified Adverse physicochemical, human health To our knowledge, this product does not p practice. 2.2. Label elements abelling according to Regulation (EC) No labelling applicable 2.3. Other hazards	or mixture (EC) No. 1272/2008 [CLP] h and environmental effects resent any particular risk, provided it is handled ir	n accordance with	n good occupational hygiene and saf
Classification of the substance Classification according to Regulation Adverse physicochemical, human healt o our knowledge, this product does not p rractice. C.2. Label elements Label lements Labelling according to Regulation (EC) No labelling applicable C.3. Other hazards No additional information available	CEC) No. 1272/2008 [CLP] The and environmental effects resent any particular risk, provided it is handled ir No. 1272/2008 [CLP]	n accordance with	n good occupational hygiene and saf
2.1. Classification of the substance Classification according to Regulation Averse physicochemical, human healt o our knowledge, this product does not p practice. 2.2. Label elements Labelling according to Regulation (EC) No labelling applicable 2.3. Other hazards No additional information available SECTION 3: Composition/inform 3.1. Substances	CEC) No. 1272/2008 [CLP] The and environmental effects resent any particular risk, provided it is handled ir No. 1272/2008 [CLP]	n accordance with	n good occupational hygiene and saf
A.1. Classification of the substance Classification according to Regulation Iot classified Adverse physicochemical, human healt fo our knowledge, this product does not p ractice. A.2. Label elements abelling according to Regulation (EC) Io labelling applicable .3. Other hazards Io additional information available SECTION 3: Composition/inform .1. Substances Iot applicable	CEC) No. 1272/2008 [CLP] The and environmental effects resent any particular risk, provided it is handled ir No. 1272/2008 [CLP]	n accordance with	n good occupational hygiene and saf
Classification of the substance Classification according to Regulation Iot classified Adverse physicochemical, human healt fo our knowledge, this product does not p ractice. C. Label elements abelling according to Regulation (EC) Io labelling applicable C.3. Other hazards Io additional information available SECTION 3: Composition/inform S.1. Substances Iot applicable	CEC) No. 1272/2008 [CLP] The and environmental effects resent any particular risk, provided it is handled ir No. 1272/2008 [CLP]	n accordance with	n good occupational hygiene and saf
A.1. Classification of the substance Classification according to Regulation Iot classified Adverse physicochemical, human healt o our knowledge, this product does not p ractice. A.2. Label elements abelling according to Regulation (EC) Io labelling applicable	CEC) No. 1272/2008 [CLP] The and environmental effects resent any particular risk, provided it is handled ir No. 1272/2008 [CLP]	n accordance with	n good occupational hygiene and saf
Classification of the substance Classification according to Regulation Adverse physicochemical, human healt To our knowledge, this product does not p practice. C. Label elements abelling according to Regulation (EC) Jo labelling applicable C.3. Other hazards Jo additional information available SECTION 3: Composition/inform	CEC) No. 1272/2008 [CLP] th and environmental effects resent any particular risk, provided it is handled ir No. 1272/2008 [CLP] nation on ingredients		Classification according to Regulation (EC) No.

SECTION 4: First aid measures	
4.1. Description of first aid measures	
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing.
First-aid measures after skin contact	: Wash skin with plenty of water.
First-aid measures after eye contact	: Rinse eyes with water as a precaution.
First-aid measures after ingestion	: Call a poison center or a doctor if you feel unwell.
4.2. Most important symptoms and effect	is, both acute and delayed
No additional information available	

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

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

SECTION 5: Firefighting measures	
5.1. Extinguishing media	
Suitable extinguishing media	: Water spray. Dry powder. Foam. Carbon dioxide.
5.2. Special hazards arising from the substa Fire hazard	: Combustible liquid.
Hazardous decomposition products in case of fire	: Toxic fumes may be released.
5.3. Advice for firefighters	
Protection during firefighting	: Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures	
6.1. Personal precautions, protective equipment and emergency procedures	
6.1.1. For non-emergency personnel	
Emergency procedures	: Ventilate spillage area. No open flames, no sparks, and no smoking.
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 ar	nd cleaning up
Methods for cleaning up	: Take up liquid spill into absorbent material. Notify authorities if product enters sewers or public waters.
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	: Ensure good ventilation of the work station. Wear personal protective equipment. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Hygiene measures	: Do not eat, drink or smoke when using this product. Always wash hands after handling the product.
7.2. Conditions for safe storage, including a	ny incompatibilities
Storage conditions	: Store in a well-ventilated place. Keep cool.
7.3. Specific end use(s)	

No additional information available

SECTION 8: Exposure controls/personal p	protection
8.1. Control parameters	
ethanol (64-17-5)	
United Kingdom - Occupational Exposure Limits	
WEL TWA (mg/m³)	1920 mg/m³
WEL TWA (ppm)	1000 ppm
8.2. Exposure controls	
Appropriate engineering controls:	
Ensure good ventilation of the work station.	
Hand protection:	
Protective gloves	
Eye protection:	
Safety glasses	
Skin and body protection:	

Wear suitable protective clothing

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

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment

Environmental exposure controls:

Avoid release to the environment.

SECTION 9: Physical and chemical p	SECTION 9: Physical and chemical properties	
9.1. Information on basic physical and ch	nemical properties	
Physical state	: Liquid	
Colour	: No data available	
Odour	: No data available	
Odour threshold	: No data available	
рН	: No data available	
Relative evaporation rate (butylacetate=1)	: No data available	
Melting point	: Not applicable	
Freezing point	: No data available	
Boiling point	: No data available	
Flash point	: 65 °C	
Auto-ignition temperature	: No data available	
Decomposition temperature	: No data available	
Flammability (solid, gas)	: Not applicable	
Vapour pressure	: No data available	
Relative vapour density at 20 °C	: No data available	
Relative density	: No data available	
Solubility	: No data available	
Log Pow	: No data available	
Viscosity, kinematic	: No data available	
Viscosity, dynamic	: No data available	
Explosive properties	: No data available	
Oxidising properties	: No data available	
Explosive limits	: No data available	
9.2. Other information		

No additional information available

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
Stable under normal conditions.
10.3. Possibility of hazardous reactions
No dangerous reactions known under normal conditions of use.
10.4. Conditions to avoid
Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.
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
ethanol (64-17-5)	
LD50 oral rat	10740 mg/kg bodyweight (Rat; OECD 401: Acute Oral Toxicity; Experimental value)
LD50 dermal rabbit	> 16000 mg/kg (Rabbit; Literature study)
LC50 inhalation rat (mg/l)	> 20 mg/l (4 h, Rat, Inhalation)
Skin corrosion/irritation	: Not classified

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

Serious eye damage/irritation : Not classified Respiratory or skin sensitisation : Not classified Germ cell mutagenicity : Not classified Carcinogenicity : Not classified ethanol (64-17-5) I - Carcinogenic to humans IARC group 1 - Carcinogenic to humans Reproductive toxicity : Not classified STOT-single exposure : Not classified STOT-repeated exposure : Not classified Aspiration hazard : Not classified	5 5 (-, ,	5 () + + + + + + + + + + + + + + + + + +
Germ cell mutagenicity : Not classified Carcinogenicity : Not classified ethanol (64-17-5) IARC group IARC group 1 - Carcinogenic to humans Reproductive toxicity : Not classified STOT-single exposure : Not classified STOT-repeated exposure : Not classified	Serious eye damage/irritation	: Not classified
Carcinogenicity : Not classified ethanol (64-17-5) IARC group IARC group 1 - Carcinogenic to humans Reproductive toxicity : Not classified STOT-single exposure : Not classified STOT-repeated exposure : Not classified	Respiratory or skin sensitisation	: Not classified
ethanol (64-17-5) IARC group 1 - Carcinogenic to humans Reproductive toxicity : Not classified STOT-single exposure : Not classified STOT-repeated exposure : Not classified	Germ cell mutagenicity	: Not classified
IARC group 1 - Carcinogenic to humans Reproductive toxicity : Not classified STOT-single exposure : Not classified STOT-repeated exposure : Not classified	Carcinogenicity	: Not classified
Reproductive toxicity : Not classified STOT-single exposure : Not classified STOT-repeated exposure : Not classified	ethanol (64-17-5)	
STOT-single exposure : Not classified STOT-repeated exposure : Not classified	IARC group	1 - Carcinogenic to humans
STOT-single exposure : Not classified STOT-repeated exposure : Not classified		
STOT-repeated exposure : Not classified	Reproductive toxicity	: Not classified
	STOT-single exposure	: Not classified
Aspiration hazard : Not classified	STOT-repeated exposure	: Not classified
	Aspiration hazard	: Not classified

SECTION 12: Ecological information	
12.1. Toxicity	
	 The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.
	Not classified
Chronic aquatic toxicity	Not classified
ethanol (64-17-5)	
LC50 fish 1	14200 mg/l (US EPA, 96 h, Pimephales promelas, Flow-through system, Fresh water, Experimental value)
EC50 Daphnia 1	9300 mg/l (48 h, Daphnia magna, Pure substance)
EC50 72h algae (1)	275 mg/l (Equivalent or similar to OECD 201, Chlorella vulgaris, Static system, Fresh water, Experimental value, Growth rate)
12.2. Persistence and degradability	
ethanol (64-17-5)	
Persistence and degradability	Readily biodegradable in water. Biodegradable in the soil. No (test)data on mobility of the substance available.
Biochemical oxygen demand (BOD)	0.8 - 0.967 g O ₂ /g substance
Chemical oxygen demand (COD)	1.7 g O ₂ /g substance
ThOD	2.1 g O ₂ /g substance
BOD (% of ThOD)	0.43
12.3. Bioaccumulative potential	
ethanol (64-17-5)	
BCF fish 1	1 (Other, 72 h, Cyprinus carpio, Static system, Fresh water, Read-across)
Log Pow	-0.35 (Experimental value; OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method; 24 $^{\circ}\text{C}$)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).
12.4. Mobility in soil	
ethanol (64-17-5)	
Surface tension	0.0245 N/m (20 °C)
Ecology - soil	Highly mobile in soil.
12.5. Results of PBT and vPvB assessment	
Component	
ethanol (64-17-5)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII
12.6. Other adverse effects No additional information available	

SECTION 13: Disposal considerations	
13.1. Waste treatment methods	
Waste treatment methods	: Waste treatment methods.

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

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
ΙΑΤΑ	
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	I of Morrish and the IDC Code
14.7. Transport in bulk according to Annex I Not applicable	II OT MARPOI AND THE IBC CODE
SECTION 15: Regulatory information	

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

Contains no REACH substances with Annex XVII restrictions

Contains no substance on the REACH candidate list

Contains no REACH Annex XIV substances

Contains no substance subject to REGULATION (EU) No 649/2012 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 concerning the export and import of hazardous chemicals.

Safety Data Sheet

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

Substance(s) are not subject to Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC.

15.1.2. National regulations

No additional information available

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Full text of H- and EUH-statements:	
Flam. Liq. 2	Flammable liquids, Category 2
H225	Highly flammable liquid and vapour.

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.