3-CHLORO-1,2-PROPANEDIOL

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

1.1. Product identifier

Product name:	3-Chloro-1,2-propanediol
CAS Number:	96-24-2
EC number:	202-492-4

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

Product use:	Please consult manufacturer.
Uses advised against:	Please consult manufacturer.

1.3 Details of the supplier of the safety data sheet

Company name:

East Harbour Group Ltd
20 Clough Road, Severalls Industrial Park
Colchester, Essex, CO4 9QS
United Kingdom

Telephone: +44 (0) 333 242 0100
Email: info@eastharbourgroup.com

1.4 Emergency telephone number

Emergency telephone: 0800 246 1274

Section 2: Hazardous identification

2.1 Classification of the substance or mixture

Hazard classification according to GHS

Corrosive To Metals	Category 1
Acute Toxicity-Oral	Category 3
Acute Toxicity-Dermal	Category 4
Skin Corrosion/irritation	Category 2
Serious Eye Damage/irritation	Category 1
Acute Toxicity-Inhalation	Category 2
Carcinogenicity	Category 2
Reproductive Toxicity	Category 1
Specific Target Organ Toxicity-Single Exposure	Category 1
Specific Target Organ Toxicity (Repeated Exposure)	Category 1

2.2 Label elements

Pictogram(s) or Symbol(s)

Signal Word Danger

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Hazard Statement(s)

H290	May be corrosive to metals
H301	Toxic if swallowed
H312	Harmful in contact with skin
H315	Causes skin irritation
H318	Causes serious eye damage
H330	Fatal if inhaled
H351	Suspected of causing cancer
H360	May damage fertility or the unborn child
H370	Causes damage to organs
H372	Causes damage to organs through prolonged or repeated exposure

Precautionary statements

Prevention

P203	Obtain, read and follow all safety instructions before use.
P234	Keep only in original packaging.
P260	Do not breathe gas/mist vapour/spray.
P264	Wash hands and other parts of the body (if related) thoroughly after handling
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or with adequate ventilation.
P280	Wear protective gloves/protective clothing/eye protection/face protection/ hearing protection.
P284	In case of inadequate ventilation wear respiratory protection.
P264+P265	Wash hands and other parts of the body (if related) thoroughly after handling. Do not touch eyes.

Response

P316	Get emergency medical help immediately.
P317	Get medical help.
P318	IF exposed or concerned, get medical advice.
P319	Get medical help if you feel unwell.
P320	Specific treatment is urgent (see related instructions on the label).
P321	Specific treatment (see related instructions on the label).
P330	Rinse mouth.
P390	Absorb spillage to prevent material-damage.
P301+P316	IF SWALLOWED: Get emergency medical help immediately.
P302+P352	IF ON SKIN: Wash with plenty of water.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing
P308+P316	IF exposed or concerned: Get emergency medical help immediately
P332+P317	If skin irritation occurs: Get medical help.
P362+P364	Take off contaminated clothing and wash it before reuse.
P305+P354+P338	IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Storage

P405	Store locked up.
P406	Store in a corrosion resistant/container with a resistant inner liner.
P403+P233	Store in a well-ventilated place keep container tightly closed.

Disposal

P501	Dispose of contents/container in accordance with local/regional/national international regulations.

3-CHLORO-1,2-PROPANEDIOL

Hazard Description
Physical and chemical hazards

Inhaled	Cough. Sore throat. Further see Ingestion.
Ingestion	Cough. Sore throat. Headache. Dizziness. Drowsiness.
Skin Contact	See Ingestion.
Eye	Redness. Pain.

Environmental Hazards
Please refer to 12th chapter of SDS.

Section 3: Composition/information on ingredients

Substance/Mixture:
Substance

Component	CAS No.	EC No.	Concentration (Volume or weight percent, %)
3-Chloro-1,2-Propanediol	96-24-2	202-492-4	299

Section 4: First aid measures

Description of first aid measures
General advice
Immediate medical attention is required. Show this safety data sheet (SDS) to the doctor in attendance.

Eye contact
Rinse with plenty of water (remove contact lenses if easily possible). Refer for medical attention.

Skin contact
Remove contaminated clothes. Rinse skin with plenty of water or shower.

Ingestion
Rinse mouth. Give one or two glasses of water to drink. Refer immediately for medical attention.

Inhalation
Fresh air, rest. Refer for medical attention.

Protecting of first-aiders
Ensure that medical personnel are aware of the substance involved. Take precautions to protect themselves and prevent spread of contamination.

Most important symptoms/effects, acute and delayed
Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.

Indication of any immediate medical attention and special treatment needed
Treat symptomatically.
Symptoms may be delayed.

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Section 5: Fire-fighting measures

Extinguishing media
Suitable extinguishing media
Small fire: dry chemical, CO2 or water spray; Large fire: dry chemical, CO2, alcohol-resistant foam or water spray, Fire involving tanks, rail tank cars or highway tanks: Fight fire from maximum distance or use unmanned master stream devices or monitor nozzles. Cool containers with flooding quantities of water until well after fire is out. Do not get water inside containers.

Unsuitable extinguishing media
No information available.

Specific hazards arising from the substance or mixture
May emit poisonous fumes on fire.
Development of hazardous combustion gases or vapor possible in the event of fire.
May expansion or decompose explosively when heated or involved in fire.

Special protective equipment and precautions for fire-fighters
As in any fire, wear self-contained breathing apparatus (MSHANIOSH approved or equivalent) and full protective gear.
Fight fire from a safe distance, with adequate cover.
Prevent fire extinguishing water from contaminating surface water or the ground water system.

Section 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures
Fully encapsulating, vapor protective clothing should be worn for spills and leaks with no fire.
Do not touch or walk through spilled material.
Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
Use personal protective equipment, do not breathe gas/mist vapour/spray.
Ensure adequate ventilation. Remove all sources of ignition. Take precautionary measures against static discharges.
Evacuate personnel to safe areas. Keep people away from and upwind of spill leak.

Environmental precautions
Prevent further leakage or spillage if safe to do so.
Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up
Do not touch or cross spills.
Cover with anti-solvent foam to reduce evaporation.
It is recommended that emergency personnel wear positive pressure self-contained breathing apparatus and wear anti-virus suits.
Spray water disperses the vapor and dilutes the liquid spill.
Do not touch broken containers and spills before putting on appropriate protective clothing.
Cut off the source of the leak as much as possible.
Keep leaks in a ventilated place.
Absorb spilled material in dry sand or inert absorbent. In case of large amount of spillage, contain a spill by bunding.
Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

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Contain spillage and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container.

Section 7: Handling and storage

Precautions for safe handling
Handling is performed in a well-ventilated place.
Wear suitable protective equipment
Avoid contact with skin and eyes.
Keep away from heat/sparks/open flames/hot surfaces.

Conditions for safe storage, including any incompatibilities.
Keep containers tightly closed.
Keep containers in a dry, cool and well-ventilated place.
Keep away from heat/sparks/open flames/hot surfaces.
Store away from incompatible materials and foodstuff containers.

Section 8: Exposure controls/personal protection

Control parameters

Component	Country/Region	Limit value-Eight hours		Limit value-short term	
		ppm	mg/m³	ppm	mg/m³
3-Chloro-1,2-Propanediol	Switzerland	0.005	0.023	0.04	0.18
	Germany (DFG)	0.005	0.023	0.04	0.184

Biological limit values
No relevant regulations

Monitoring methods
EN 14042 Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents.
GBZ/T 300 series standard Determination of toxic substances in workplace air.

Engineering controls
Ensure adequate ventilation, especially in confined areas.
Ensure that eyewash stations and safety showers are close to the workstation location
Use explosion-proof electrical/ventilating/lighting/equipment.
Set up emergency exit and necessary risk-elimination area.

Personal protection equipment

General requirement	
Eye protection	Must wear appropriate anti-corrosion goggles.
Hand protection	Must wear acid and alkali resistant chemical protective gloves.
Respiratory protection	Must wear appropriate personal dust proof gas mask.
Skin and body protection	Must wear acid and alkali resistant chemical protective clothing.

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Section 9: Physical and chemical properties

Physical and chemical properties

Physical state	Transparent liquid
Colour	Light yellow
Odour	Nearly odourless
Odor threshold	No information available
pH	3-6 (20°C, 500g/L)
Melting point/freezing point(°C)	-40
Initial boiling point and boiling range(°C)	114 - 120(1.9kPa)
Flash point (Closed cup, °C)	113
Evaporation rate	No information available
Flammability	Not flammable
Upper/lower explosive limits[%(VM)]	Upper limit: No information available. Lower limit: No information available
Vapor pressure	27 Pa (20℃)
Relative vapour density (Air=1)	3.8
Relative density (Water=1)	1.32
Solubility	Miscible with water
n-octanol water partition coefficient	-0.53
Auto-ignition temperature(°C)	No information available
Decomposition temperature (°C)	213
Kinematic viscosity	728 mPa*s (20°C)
Particle characteristics	Not applicable

Section 10: Stability and Reactivity

Stability and reactivity
Reactivity
Contact with incompatible substances can cause decomposition or other chemical reactions.

Chemical stability
Stable under proper operation and storage conditions.

Possibility of hazardous reactions
No information available.

Conditions to avoid
Incompatible materials, heat, flame and spark.

Incompatible materials
No information available.

Hazardous decomposition products
Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11: Toxicological Information

3-CHLORO-1,2-PROPANEDIOL

Acute toxicity

Component	LDs (oral)	LD_{50} (dermal)	LC_{50} (inhalation,4h)
3-Chloro-1,2-Propanediol	112mgkg (Rat)	1060mg/kg (Rabbit)	>0.407mg/L (Mouse)

Carcinogenicity

Component	List of carcinogens by the IARC Monographs	Report on Carcinogens by NTP
3-Chloro-1,2-Propanediol	Category 2B	Not Listed

Others	
3-Chloro-1,2-Propanediol (Component)	
Skin corrosion/irritation	Causes skin irritation (Category 2)
Serious eye damage/irritation	Causes serious eye damage (Category 1)
Skin sensitization	Based on available data, the classification criteria are not met
Respiratory sensitization	Based on available data, the classification criteria are not met
Reproductive toxicity	May damage fertility or the unborn child (Category 1)
STOT-single exposure	Causes damage to organs (Category 1)
STOT-repeated exposure	Causes damage to organs through prolonged or repeated exposure (Category 1)
Aspiration hazard	Based on available data, the classification criteria are not met
Germ cell mutagenicity	Based on available data, the classification criteria are not met

Section 12: Ecological Information

Acute aquatic toxicity

Component	Fish	Crustaceans	Algae
3-Chloro-1,2-Propanediol	No information available	EC_{50}:>100mg/L (48h) (Crustaceans)	No information available

Chronic aquatic toxicity

Chronic aquatic toxicity	No information available

Persistence and degradability

Component	Persistence (water soil)	Persistence (air)
3-Chloro-1,2-Propanediol	Low	Low

Bioaccumulative potential

Component	Bioaccumulative potential	Comments
3-Chloro-1,2-Propanediol	Low	Log Kow=-0.53

Mobility in soil

Component	Mobility in soil	Soil Organic Carbon-Water Partitioning Coefficient (Koc)
3-Chloro-1,2-Propanediol	High	1

Results of PBT and vPvB assessment

Component	Results of PBT and vPVB assessment [according to(EC)No 190712006]
3-Chloro-1,2-Propanediol	No information available

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Section 13: Disposal considerations

Disposal considerations
Waste chemicals
Before disposal should refer to the relevant national and local laws and regulation. Recommend the use of incineration disposal.

Contaminated packaging
Containers may still present chemical hazard when empty. Keep away from hot and ignition source of fire. Return to supplier for recycling if possible.

Disposal recommendations
Refer to section waste chemicals and contaminated packaging.

Section 14: Transport Information

IMDG-CODE

UN number	2689
UN proper shipping name	GLYCEROL-alpha-MONOCHLOROHYDRIN
Transport hazard class	6.1
Transport subsidiary hazard class	None
Packing group	III
Marine pollutant (Yes or no)	No

ICAO/IATA-DGR

UN number	2689
UN proper shipping name	GLYCEROL-alpha-MONOCHLOROHYDRIN
Transport hazard class	6.1
Transport subsidiary hazard class	None
Packing group	III

UN-ADR

UN number	2689
UN proper shipping name	GLYCEROL-alpha-MONOCHLOROHYDRIN
Transport hazard class	6.1
Transport subsidiary hazard class	None
Packing group	III

Section 15: Regulatory Information

Component	EC inventory	TSCA	DSL	IECSC	NZIoC	PICCS	KECI	AIICS	ENCS
3-Chloro-1,2-Propanediol	√	√	x	√	√	√	√	√	√

Note:
√ Indicates that the substance included in the regulations.
x No data or not included in the regulations.

[EC inventory] European Inventory of Exis ting Commercial Chemical Substances

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[TSCA]	United States Toxic Substances Control Act Inventory
[DSL]	Canadian Domestic Substances List
[IECSC]	China Inventory of Existing Chemical Substances
[NZIoC]	New Zealand Inventory of Chemicals
[PICCS]	Philippines Inventory of Chemicals and Chemical Substances
[KECI]	Korea Existing Chemicals Inventory
[AIICS]	Australian Inventory of industrial Chemical
[ENCS]	Japan Inventory of Existing & New Chemical Substances

Section 16: Other Information

Reference

IPCS The International Chemical Safety Cards (ICSC),
website://ww.ilo.org/dynicsc/showcard.home.

IARC
website: http://www.iarc.fil

OECD The Global Portal to Information on Chemical Substances,
website: https:/ww.echemportal.org/echemportav

CAMEO Chemicals,
website: http://cameochemicals.noaa.gov/search/simple

NLM ChemIDplus,
website: http://chem.sis.nlm.nihgov/chemidplus/chemidlite

EPA Integrated Risk Information System,
website: http/cfpub.epa.govirisl.

US Department of Transportation: ERG,
website: http:/ww.phmsa.dotgov/hazmat/lbrary/erg.

Germany GESTIS-database on hazard substance,
website: http:/gestis-en.itrust.del.