MATERIAL SAFETY DATA SHEET

3-CHLORO-1,2-PROPANEDIOL

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

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

Product use:	For laboratory research purposes

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

OSHA Haz Com: CFR 1910.1200:
Acute Toxicity - Oral [Category 3]
Acute Toxicity - Dermal [Category 3]
Acute Toxicity - Inhalation [Category 3]
Skin Corrosion/Irritation [Category 2]
Eye Damage/Irritation [Category 2]

2.2 Label elements

Signal Word: Danger!

Hazard Statement(s):
Causes serious eye irritation.
Causes skin irritation.
Toxic if swallowed.
Toxic in contact with skin.
Toxic if inhaled.

Pictogram(s) or Symbol(s)

3-CHLORO-1,2-PROPANEDIOL

Precautionary Statement(s):
Prevention
Do not eat, drink, or smoke when using this product. Wash hands and face thoroughly after handling. Wear protective gloves and protective clothing. Do not breathe dusts or mists. Use only outdoors or in a well-ventilated area. Wear protective gloves. Wear eye and face protection.
Response
If swallowed: Immediately call a poison centre or doctor. Rinse mouth. If on skin: Wash with plenty of water. Call a poison centre or doctor if you feel unwell. Take off immediately all contaminated clothing and wash it before reuse. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison centre or doctor. If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice or attention.
Storage
Store locked up. Store in a well-ventilated place. Keep container tightly closed.
Disposal
Dispose of contents and container in accordance with US EPA guidelines for the classification and determination of hazardous waste listed in 40 CFR 261.3. (See section 13)

Section 3: Composition/information on ingredients

Substance/Mixture:

Substance Components:	3-Chloro-1,2-propanediol
Percent:	>98%
CAS Number:	96-24-2
Molecular Weight:	110.54
Chemical Formula:	C3H7ClO2

Section 4: First aid measures

4.1 Description of first aid measures
Inhalation:
Immediately call a poison centre or doctor. Move victim to fresh air. Give artificial respiration if victim is not breathing. Administer oxygen if breathing is difficult. Keep victim warm and quiet. Treat symptomatically and supportively. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.
Skin contact:
Immediately call a poison centre or doctor. Remove and wash contaminated clothing before re-use. In case of contact with substance, immediately flush skin with running water for at least 20 minutes. Treat symptomatically and supportively. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.
Eye contact:
IMMEDIATELY flush eyes with running water for at least 15 minutes, keeping eyelids open. Contact with material may irritate or burn eyes. Call emergency medical service. Move victim to fresh air. Check for and remove any contact lenses. Keep victim warm and quiet. Treat symptomatically and supportively. Effects of exposure to substance may be delayed. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.
Ingestion:
Toxic if swallowed. Do not induce vomiting without medical advice. Call a physician or Poison Control Centre immediately. Do not use mouth-to-mouth method if victim ingested the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Loosen

tight clothing such as a collar, tie, belt, or waistband. If a person vomits place them in the recovery position so that vomit will not re-enter the mouth and throat. Rinse mouth. Keep victim warm and quiet. Treat symptomatically and supportively. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

4.2 Most important symptoms and effects, both acute and delayed.
Acute: Redness.
Delayed: No data available

4.3 Indication of any immediate medical attention and special treatment needed.
WARNING:
It might be dangerous to the person providing aid to give mouth-to-mouth respiration, because the inhaled material is toxic. If breathing has stopped, perform artificial respiration. Use first aid treatment according to the nature of the injury. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

Section 5: Fire-fighting measures

5.1 Fire Fighting Media and Instructions:
Suitable extinguishing media: Dry chemical, CO2 or water spray. Consult with local fire authorities before attempting large scale firefighting operations.

5.2 Special hazards arising from the substance or mixture
Hazardous combustion products:
These products include: Carbon oxides Nitrogen oxides Halogenated compounds
Other specific hazards:
WARNING: Highly toxic HCl gas is produced during combustion.

5.3 Advice for firefighters
Special precautions for fire-fighters: Use water spray or fog; do not use straight streams. Dike fire-control water for later disposal; do not scatter the material. Containers may explode when heated. Move containers from fire area if you can do it without risk.
Special protective equipment for fire-fighters: Wear positive pressure self-contained breathing apparatus (SCBA). Structural fire fighters' protective clothing provides limited protection in fire situations ONLY; it may not be effective in spill situations. Wear chemical protective clothing which is specifically recommended by the manufacturer. It may provide little or no thermal protection.

Section 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Personal precautions:
Avoid contact with skin, eyes, and clothing. Keep people away from and upwind of spill/leak. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing (Section 8). Warn unnecessary personnel to move away. Stop leak if you can do it without risk. Ensure adequate ventilation. Isolate the hazard area and deny entry to unnecessary and unprotected person.
Personal protective equipment:
Wear eye protection (splash goggles) and face protection (full length face shield). Lab coat. Dust respirator. Be sure to use a MSHA/NIOSH approved respirator or equivalent. Wear protective gloves (nitrile).

Emergency procedures: Prevent dust cloud. In case of a spill and/or a leak, always shut off any sources of ignition, ventilate the area, and exercise caution. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Warn personnel to move away. Prevent entry into sewers, basements, or confined areas; dike if needed.

6.2 Environmental precautions
Keep away from living quarters. Prevent further leakage or spillage if safe to do so. Water runoff can cause environmental damage. Prevent entry into sewers, basements, or confined areas; dike if needed.

6.3. Methods and material for containment and cleaning up.
ELIMINATE all ignition sources (no smoking, flares, sparks, or flames in immediate area). Stop leak if without risk. Ventilate the area. Absorb with an inert material and put the spilled material in an appropriate waste disposal container. Use clean non-sparking tools to collect absorbed material.

Section 7: Handling and storage

7.1 Precautions for safe handling
Avoid inhalation of vapor or mist. Do not ingest. Avoid contact with skin and eyes. Avoid contact with skin. Good general ventilation should be sufficient to control airborne levels. Keep container dry. Handle and open container with care. Wear suitable protective clothing, gloves, and eye/face protection. When using do not eat, drink, or smoke. Keep away from sources of ignition.

7.2 Conditions for safe storage, including any incompatibilities.
Store locked up. Keep containers tightly closed in a cool, well-ventilated place. Keep away from incompatibles. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Avoid prolonged storage periods.
Storage incompatibilities: Store away from oxidizing agents

Section 8: Exposure controls/personal protection

Exposure limits: No data available
Appropriate engineering controls:
Good general ventilation should be sufficient to control airborne levels. Ventilation is normally required when handling or using this product. Eyewash fountains should be provided in areas where there is any possibility that workers could be exposed to the substance. Follow safe industrial engineering/laboratory practices when handling any chemical.
Personal protective equipment

Respiratory protection:	Dust respirator. Be sure to use a MSHA/NIOSH approved respirator or equivalent.
Hand protection:	Nitrile gloves.
Eye protection:	Safety glasses.
Skin and body protection:	Lab coat

Section 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance:	Colourless to light yellow liquid
Melting point:	No data available

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Boiling point:	213 °C (415 °F) - lit
Flash point:	113 °C (235 °F) - closed cup
Relative density:	1.322 g/cm3 at 25 °C (77 °F)
Kinematic Viscosity:	No data available
Partition coefficient:	log Pow: -0.53
Flammability (solid, gas):	No data available

Section 10: Stability and Reactivity

10.1 Reactivity	No data available
10.2 Chemical Stability	No data available
10.3 Possibility of hazardous reactions	No data available
10.4 Conditions to avoid	No data available
10.5 Incompatible materials	No data available
10.6 Hazardous decomposition products	No data available

Section 11: Toxicological Information

Acute Toxicity:	No data available
Skin corrosion/irritation:	No data available
Serious eye damage/irritation:	No data available
Respiratory or skin sensitization:	No data available
Germ cell mutagenicity:	No data available
Carcinogenicity:	No data available
IARC:	No data available
NTP:	No data available
OSHA:	No data available
Reproductive toxicity:	No data available

Routes of Exposure: Inhalation, Eye contact, Ingestion, Skin contact.
Symptoms related to exposure: Overexposure may result in serious illness or death. Skin contact may result in inflammation; characterized by itching, scaling, reddening, or occasionally blistering. Skin contact may result in redness, pain, or dry skin. Eye contact may result in redness or pain.
Potential Health Effects: Skin and eye contact may result in irritation.
Target organ(s): No data available

Section 12: Ecological Information

Ecotoxicity Fish:	No data available
Crustacea:	No data available
Algae:	No data available
Persistence and degradability:	No data available
Bioaccumulative potential (BCF):	No data available
Mobility in soil:	No data available
Partition coefficient: n-octanol/water (log Pow)	No data available
Soil adsorption (Koc):	No data available
Henry's Law: constant (PaM3 /mol)	No data available

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Section 13: Disposal considerations

13.1 Waste treatment methods
Waste disposal of substance:
Disposal of product: Recycle to process if possible. It is the generator's responsibility to comply with Federal, State and Local rules and regulations. You may be able to dissolve or mix material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber system. This section is intended to provide assistance but does not replace these laws, nor does compliance in accordance with this section ensure regulatory compliance according to the law. US EPA guidelines for Identification and Listing of Hazardous Waste are listed in 40 CFR Parts 261. The product should not be allowed to enter the environment, drains, water ways, or the soil.
Container disposal:
Dispose of as unused product. Do not re-use empty containers.
Other considerations:
Observe all federal, state and local regulations when disposing of the substance.

Section 14: Transport Information

DOT (US)			
UN Number:	**Proper Shipping Name:**	**Class or Division:**	**Packing Group:**
UN2689	Glycerol alpha-monochlorohydrin.	6.1	III
IATA			
UN Number:	**Proper Shipping Name:**	**Class or Division:**	**Packing Group:**
UN2689	Glycerol alpha-monochlorohydrin.	6.1	III
IMDG			
UN Number:	**Proper Shipping Name:**	**Class or Division:**	**Packing Group:**
UN2689	GLYCEROL-alpha-MONOCHLOROHYDRIN.	6.1	III

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

Section 15: Regulatory Information

Toxic Substance Control Act (TSCA 8b.): This product is NOT on the EPA Toxic Substances Control Act (TSCA) inventory. The following notices are required by 40 CFR 720.36 (C) for those products not on the inventory list:
(i) These products are supplied solely for use in research and development by or under the supervision of a technically qualified individual as defined in 40 CFR 720.0 et sec.
(ii) The health risks of these products have not been fully determined. Any information that is or becomes available will be supplied on a SDS sheet.
US Federal Regulations
CERCLA Hazardous substance and Reportable Quantity:
SARA 313: Not Listed
SARA 302: Not Listed
State Regulations
State Right-to-Know

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Massachusetts: Not Listed
New Jersey: Not Listed
Pennsylvania: Not Listed
California Proposition 65: Not Listed

Other Information

NFPA Rating:
Health: 2
Flammability: 0
Instability: 0
HMIS Classification:
Health: 2
Flammability: 0
Physical: 0

International Inventories

WHMIS hazard class:
D1B: Materials causing immediate and serious toxic effects. (Toxic)
D2B: Materials causing other toxic effects. (Toxic)

Section 16: Other Information

The information herein is believed to be correct but does not claim to be all inclusive and should be used only as a guide. Neither the above-named supplier nor any of its affiliates or subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All chemical reagents must be handled with the recognition that their chemical, physiological, toxicological, and hazardous properties have not been fully investigated or determined. All chemical reagents should be handled only by individuals who are familiar with their potential hazards and who have been fully trained in proper safety, laboratory, and chemical handling procedures. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist. Our MSDS are based only on data available at the time of shipping and are subject to change without notice as new information is obtained. Avoid long storage periods since the product is subject to degradation with age and may become more dangerous or hazardous. It is the responsibility of the user to request updated MSDS for products that are stored for extended periods. Disposal of unused product must be undertaken by qualified personnel who are knowledgeable in all applicable regulations and follow all pertinent safety precautions including the use of appropriate protective equipment (e.g., protective goggles, protective clothing, breathing equipment, face mask, fume hood). For proper handling and disposal, always comply with federal, state, and local regulations.