ACETIC ACID, GLACIAL

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

1.1. Product identifier

Product name:	Acetic acid (glacial) 100%
CAS Number:	64-19-7
EC Number:	200-580-7

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

Product use:	Laboratory chemicals, Industrial & for professional use only

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

Classification according to Regulation (EC) No 1272/2008

Flammable liquids (Category 3), H226
Skin corrosion (Sub-category 1A), H314
Serious eye damage (Category 1), H318
For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 Label elements

Labelling according Regulation (EC) No 1272/2008

Pictogram

Signal Word Danger

ACETIC ACID, GLACIAL

Hazard Statement(s)

H226	Flammable liquid and vapor
H314	Causes severe skin burns and eye damage.

Precautionary statement(s)

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233	Keep container tightly closed.
P240	Ground and bond container and receiving equipment.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with 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.
Supplemental Hazard Statements	None

Reduced Labelling (<= 125 ml)

Pictogram Signal

Word Danger Hazard statement(s)

H314	Causes severe skin burns and eye damage.

Precautionary statement(s)

P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with 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.
Supplemental Hazard Statements	None

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Section 3: Composition/information on ingredients

3.1 Substances

Formula : C2H4O2
Molecular weight : 60.05 g/mol
CAS-No. : 64-19-7
EC-No. : 200-580-7

ACETIC ACID, GLACIAL

Component	Classification	Concentration
acetic acid		
CAS-No. 64-19-7 EC-No. 200-580-7 Index-No. 607-002-00-6	Flam. Liq. 3; Skin Corr. 1A; Eye Dam. 1; H226, H314, H318 Concentration limits: >= 90 %: Skin Corr. 1A, H314; 25 - < 90 %: Skin Corr. 1B, H314; 10 - < 25 %: Skin Irrit. 2, H315; 10 - < 25 %: Eye Irrit. 2, H319; 10 - < 25 %: Eye Irrit. 2, H319; 10 - < 25 %: Skin Irrit. 2, H315; 25 - < 90 %: Skin Corr. 1B, H314; >= 90 %: Skin Corr. 1A, H314; >= 90 %: 3, H226;	<=100%

For the full text of the H-Statements mentioned in this section, see section 16.

Section 4: First aid measures

4.1 Description of first aid measures
General advice
First aiders need to protect themselves. Show this material safety data sheet to the doctor in attendance.
If inhaled
After inhalation: fresh air. Call in physician.
In case of skin contact
In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Call a physician immediately.
In case of eye contact
After eye contact: rinse out with plenty of water. Immediately call-in ophthalmologist. Remove contact lenses.
If swallowed
After swallowing: make victim drink water (two glasses at most), avoid vomiting (risk of perforation). Call a physician immediately. Do not attempt to neutralise.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11.

4.3 Indication of any immediate medical attention and special treatment needed
No data available.

Section 5: Fire-fighting measures

5.1 Fire Fighting Media and Instructions:
Suitable extinguishing media: Water Foam Carbon dioxide (CO2) Dry powder.
Unsuitable extinguishing media: For this substance/mixture no limitations of extinguishing agents are given.

ACETIC ACID, GLACIAL

5.2 Special hazards arising from the substance or mixture:
Carbon oxides
Combustible.
Fire may cause evolution of: Acetic acid vapours.
Vapours are heavier than air and may spread along floors.
Forms explosive mixtures with air at elevated temperatures.
Development of hazardous combustion gases or vapours possible in the event of fire.

5.3 Advice for firefighters
Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

5.4 Further information
Remove container from danger zone and cool with water. Prevent fire extinguishing water from contaminating surface water or the ground water system.

Section 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Advice for non-emergency personnel: Do not breathe vapours, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8.

6.2 Environmental precautions
Do not let product enter drains. Risk of explosion.

6.3. Methods and material for containment and cleaning up
Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up with liquid-absorbent and neutralising material. Dispose of properly. Clean up affected area.

6.4 Reference to other sections
For disposal see section 13.

Section 7: Handling and storage

7.1 Precautions for safe handling
Advice on protection against fire and explosion
Keep away from open flames, hot surfaces, and sources of ignition. Take precautionary measures against static discharge.
Hygiene measures
Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance. For precautions see section 2.2.

ACETIC ACID, GLACIAL

EAST HARBOUR GROUP

7.2 Conditions for safe storage, including any incompatibilities:
Storage conditions Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition. Recommended storage temperature, see product label.
Storage class
Storage class (TRGS 510): 3: Flammable liquids

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

Section 8: Exposure controls/personal protection

8.1 Control parameters
Ingredients with workplace control parameters

Component	CAS No	Control parameters	Value	Basis
Acetic acid	64-19-7	TWA	10ppm 25 mg/m3	Europe. Commission Directive 2017/164/EU establishing a fourth list of indicative occupational exposure limit values
	Remarks	Indicative		
		STEL	20 ppm 50 mg/m3	Europe. Commission Directive 2017/164/EU establishing a fourth list of indicative occupational exposure limit values
		Indicative		
		STEL	20 ppm 50 mg/m3	UK. EH40 WEL - Workplace Exposure Limits
		TWA	10 ppm 25 mg/m3	UK. EH40 WEL - Workplace Exposure Limits

8.2 Exposure controls /
Appropriate engineering controls
Personal protective equipment
Eye/face protection Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Tightly fitting safety goggles.
Skin protection This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de). Full contact Material: butyl-rubber
Minimum layer thickness: 0.7 mm
Break through time: 480 min
Material tested: Butoject® (KCL 898)
This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).
Splash contact

ACETIC ACID, GLACIAL

Material: Latex gloves
Minimum layer thickness: 0.6 mm
Break through time: 30 min
Material tested: Lapren® (KCL 706 / Aldrich Z677558, Size M)

Body Protection

Flame retardant antistatic protective clothing.

Respiratory protection

Recommended Filter type: filter E-(P2)
The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

Control of environmental exposure

Do not let product enter drains. Risk of explosion.

Section 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	liquid
Colour	colourless
Odour	stinging
Melting point/freezing point	Melting point: 16.64 °C
Initial boiling point and boiling range	117.9 °C at 1,013.25 hPa
Flammability (solid, gas)	Not applicable
Upper/lower flammability or explosive limits	Upper explosion limit: 19.9 %(V) Lower explosion limit: 4 %(V)
Flash point	39 °C - closed cup
Autoignition temperature	463 °C
Decomposition temperature	Distillable in an undecomposed state at normal pressure.
pH	2.5 at 50 g/l at 20 °C
Viscosity	Viscosity, kinematic: 1.17 mm2/s at 20 °C Viscosity, dynamic: 1.05 mPa.s at 25 °C
Water solubility	602.9 g/l at 25 °C at 1,013 hPa - completely soluble
Partition coefficient: n-octanol/water	log Pow: -0.17 at 25 °C - Bioaccumulation is not expected., (ECHA)
Vapour pressure	20.79 hPa at 25 °C
Density	1.04 g/cm3 at 25 °C
Relative density	No data available
Relative vapor density	No data available
Particle characteristics	No data available
Explosive properties	No data available
Oxidizing properties	none

9.2 Other safety information

Surface tension	28.8 mN/m at 10.0 °C
Relative vapor density	2.07

ACETIC ACID, GLACIAL

EAST HARBOUR GROUP

Section 10: Stability and Reactivity

10.1 Reactivity
Vapor/air-mixtures are explosive at intense warming.
10.2 Chemical stability
The product is chemically stable under standard ambient conditions (room temperature) .
10.3 Possibility of hazardous reactions
Risk of explosion with:
peroxi compounds
perchloric acid
fuming sulfuric acid
phosphorus halides
hydrogen peroxide
chromium(VI) oxide
potassium permanganate
Peroxides
Strong oxidizing agents
Risk of ignition or formation of inflammable gases or vapours with:
Iron
Zinc
magnesium
Mild steel
Possible formation of:
Hydrogen
Violent reactions possible with:
strong alkalis
Aldehydes
alkali hydroxides
non-metallic halides
ethanolamine
Acetaldehyde
Alcohols
halogen-halogen compounds
chlorosulfonic acid
chromosulfuric acid
Potassium hydroxide
Nitric acid

10.4 Conditions to avoid.
Heating.

10.5 Incompatible materials.
various metals

ACETIC ACID, GLACIAL

10.6 Hazardous decomposition products
In the event of fire: see section 5.

Section 11: Toxicological Information

11.1 Information on toxicological effects
Acute toxicity
LD50 Oral - Rat - 3,310 mg/kg
Remarks: (RTECS)
LC50 Inhalation - Mouse - 4 h - 2,819 mg/l - vapor
Remarks: (RTECS)
Dermal: No data available
Skin corrosion/irritation
Skin - Rabbit
Result: Causes burns. - 4 h (OECD Test Guideline 404)
Remarks: (IUCLID)
Serious eye damage/eye irritation
Eyes - Rabbit
Result: Causes burns. - 4 h (OECD Test Guideline 405)
Remarks: (IUCLID)
Causes serious eye damage.
Respiratory or skin sensitization
No data available
Germ cell mutagenicity
Test Type: Ames test
Test system: Salmonella typhimurium
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative
Test Type: Mutagenicity (mammal cell test): chromosome aberration.
Test system: Chinese hamster ovary cells
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: negative
Test Type: Micronucleus test
Species: Rat Cell type: Bone marrow
Application Route: inhalation (vapor)
Method: Mutagenicity (micronucleus test)
Result: negative
Carcinogenicity No data available
Reproductive toxicity No data available
Specific target organ toxicity - single exposure No data available
Specific target organ toxicity - repeated exposure No data available

ACETIC ACID, GLACIAL

Aspiration hazard No data available.

11.2 Additional Information
Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea, Vomiting, Ingestion, or inhalation of concentrated acetic acid causes damage to tissues of the respiratory and digestive tracts. Symptoms include: hematemesis, bloody diarrhoea, edema and/or perforation of the oesophagus and pylorus, pancreatitis, haematuria, anuria, uraemia, albuminuria, haemolysis, convulsions, bronchitis, pulmonary edema, pneumonia, cardiovascular collapse, shock, and death. Direct contact or exposure to high concentrations of vapor with skin or eyes can cause: erythema, blisters, tissue destruction with slow healing, skin blackening, hyperkeratosis, fissures, corneal erosion, opacification, iritis, conjunctivitis, and possible blindness. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Section 12: Ecological Information

12.1 Toxicity
Toxicity to fish
semi-static test LC50 - Oncorhynchus mykiss (rainbow trout) - > 1,000 mg/l - 96 h (OECD Test Guideline 203)
Toxicity to daphnia and other aquatic invertebrates
static test EC50 - Daphnia magna (Water flea) - > 1,000 mg/l - 48 h (OECD Test Guideline 202)
Toxicity to algae
static test EC50 - Skeletonema costatum - > 1,000 mg/l - 72 h (ISO 10253)
Toxicity to bacteria
EC5 - Pseudomonas putida - 2,850 mg/l - 16 h Remarks: neutral (maximum permissible toxic concentration) (Lit.) microtox test EC50 - Photobacterium phosphoreum - 11 mg/l - 15 min Remarks: (IUCLID)

12.2 Persistence and degradability
Biodegradability
Result: 99 % - Readily biodegradable. (OECD Test Guideline 301D) Remarks: (HSDB) Result: 95 % - Readily eliminated from water (OECD Test Guideline 302B)
Biochemical Oxygen Demand (BOD)
880 mg/g Remarks: (Lit.)
Ratio BOD/ThBOD
76 % Remarks: (IUCLID)

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

ACETIC ACID, GLACIAL

12.5 Results of PBT and vPvB assessment
This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Endocrine disrupting properties
No data available

12.7 Other adverse effects
Biological effects: Harmful effect due to pH shift.
Caustic even in diluted form.
Discharge into the environment must be avoided.

Section 13: Disposal considerations

13.1 Waste treatment methods
Product
Notice Directive on waste 2008/98/EC. Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself. See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

Section 14: Transport Information

14.1 UN number
ADR/RID: 2789 IMDG: 2789 IATA: 2789

14.2 UN proper shipping name
ADR/RID: ACETIC ACID, GLACIAL
IMDG: ACETIC ACID, GLACIAL
IATA: Acetic acid, glacial

14.3 Transport hazard class(es)
ADR/RID: 8 (3) IMDG: 8 (3) IATA: 8 (3)

14.4 Packaging group
ADR/RID: II IMDG: II IATA: II

14.5 Environmental hazards
ADR/RID: no IMDG Marine pollutant: no IATA: no

14.6 Special precautions for user
No data available

ACETIC ACID, GLACIAL

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

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.
National legislation
Seveso III: Directive 2012/18/EU of the European Parliament and of the council on the control of major-accident hazards involving dangerous substances. : FLAMMABLE LIQUIDS

Other regulations Take note of Dir 94/33/EC on the protection of young people at work.

15.2 Chemical Safety Assessment
A Chemical Safety Assessment has been carried out for this substance.

Section 16: Other Information

Full text of H-Statements referred to under sections 2 and 3.
H226 Flammable liquid and vapor.
H314 Causes severe skin burns and eye damage.
H315 Causes skin irritation. H318 Causes serious eye damage.
H319 Causes serious eye irritation.

Further information
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product.