SAFETY DATA SHEET

Glacial Acetic Acid 99.5%

SECTION 1: IDENTIFICATION

Product identifier used on a label:	Glacial Acetic Acid 99.5%
Product code:	1000
HS Code:	29152100
CAS-No.:	64-19-7
Synonyms:	ethanoic acid
Recommended use of the chemical and restrictions on use:	Acid
Chemical family:	Acid
Chemical formula:	CH_3COOH
Name, address and phone # of supplier:	Aqua Bond Inc. PO Box 63635 Toronto, ON, M1V 5K2 (416) 754-7211
24 Hr. Emergency phone #:	**CANUTEC (613) 996-6666**

SECTION 2: HAZARDS IDENTIFICATION

Classification of the chemical: This material is classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015).

Hazard classification:

GHS Classification

Flammable liquids (Category 3), H226
Skin corrosion (Category 1A), H314
Serious eye damage (Category 1), H318

Label elements:



Signal word: DANGER

Hazard statements:
H226 Flammable liquid and vapour.
H314 Causes severe skin burns and eye damage.

Precautionary statements:

Prevention
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.
P241 Use explosion-proof electrical/ ventilating/ lighting equipment.
P242 Use non-sparking tools.
P243 Take action to prevent static discharges.
P264 Wash skin thoroughly after handling.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.
P363 Wash contaminated clothing before reuse.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

Storage and Disposal
P403 + P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.
P501 Dispose of contents/ container to an approved waste disposal plant.

Other Hazards: Not available.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient name	Synonyms	CAS Number	Concentration (wt. %)
Acetic acid	ethanoic acid	64-19-7	≥ 99.5

SECTION 4: FIRST-AID MEASURES
Description of first aid measures:

Inhalation	If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
Skin contact	Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Call a physician immediately.
Eye contact	Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.
Ingestion	Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Most important symptoms and effects, both acute and delayed: No data available.

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

SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing media:	Use media appropriate for the surrounding fire.
Suitable:	Dry powder, Dry sand.
Unsuitable:	Do NOT use water jet.
Flash point:	Not Available.
Autoignition Temperature:	Not Available.
Specific hazards arising from the substance:	Carbon oxides
Hazardous thermal decomposition products:	Carbon oxides
Special protective equipment and precautions for fire-fighters:	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Suppress (knock down) gases/vapors/mists with a water spray jet. 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:	Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel from hazardous areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

Environmental precautions:	Should not be released into environment. Prevent further leakage or spillage if safe to do so. Do not let product enter drains.
Methods and materials for containment and cleaning up:	Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local/national regulations.
Special spill response procedures:	In case of transportation accident, contact CANUTEC (613) 996-6666.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling:	Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.
Conditions for safe storage:	Keep in a tightly closed container. Store in a cool, dry, ventilated area away from sources of heat, moisture and incompatibilities. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Moisture sensitive. Storage class (TRGS 510): 3: Flammable liquids
Incompatible materials:	Strong oxidizers, alkalis, metals and alloys, ammonium nitrate, aldehydes, sodium peroxide, hydroxides, phosphates, perchloric acid.
Hazardous decomposition products:	Carbon oxides.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

Ingredient	**Exposure limits**
Acetic acid (CAS No.: 64-19-7)	TWA 10 ppm 25 mg/m^3 Canada. Alberta, Occupational Health and Safety Code (table 2: OEL) STEL 15 ppm 37 mg/m^3 Canada. Alberta, Occupational Health and Safety Code (table 2: OEL) TWA 10 ppm Canada. British Columbia OEL STEL 15 ppm Canada. British Columbia OEL TWAEV 10 ppm 25 mg/m^3 Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants STEV 15 ppm 37 mg/m^3 Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for

airborne contaminants
TWA 10 ppm USA. ACGIH Threshold Limit Values (TLV)
STEL 15 ppm USA. ACGIH Threshold Limit Values (TLV)

Individual protection measures:

Use mechanical exhaust or laboratory fumehood to avoid exposure. Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Eye Protection: Use chemical safety goggles and / or a full face shield where splashing is possible. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Maintain eye wash fountain and quick-drench facilities in work area.
Skin Protection: Wear appropriate protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact. Handle with gloves. Gloves must be inspected prior to use.
Respiratory protection: Where risk assessment shows air-purifying respirators are appropriate use a fullface respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Liquid (colorless to pale yellow)
Odour:	Pungent (vinegar)
Odour threshold:	No data available
pH:	< 2.5 (1% solution)
Melting point/Freezing point:	16.6 °C
Initial boiling point/boiling range:	118 °C
Flash point:	40.0 °C (104.0 °F) - closed cup
Evaporation rate:	No data available
Flammability (solid; gas) :	No data available
Upper/lower flammable/explosive limit:	Upper explosion limit: 19.9 %(V) Lower explosion limit: 4 %(V)
Vapour pressure:	11 mmHg @20 °C
Vapour density:	No data available.
Relative density:	1.049 g/cm^3 at 25 °C (77 °F)
Solubility:	Miscible with water
Partition coefficient (n-octanol/water) :	log Pow: -0.17
Auto-ignition temperature:	485.0 °C (905.0 °F)

Glacial Acetic Acid 99.5%

Decomposition temperature:	No data available
Viscosity:	No data available

SECTION 10: STABILITY AND REACTIVITY

Reactivity:	No data available.
Chemical stability:	Stable under recommended storage conditions.
Possibility of hazardous reactions:	No data available.
Conditions to avoid:	Heat, flames and sparks. Incompatible products.
Incompatible materials:	Oxidizing agents, Soluble carbonates and phosphates, Hydroxides, Metals, Peroxides, permanganates, for example potassium permanganate, Amines, Alcohols, Nitric acid
Hazardous decomposition products:	Hazardous decomposition products formed under fire conditions: Carbon oxides

SECTION 11: TOXICOLOGICAL INFORMATION

Toxicity data:

Acetic Acid

Acute toxicity
LD50 Oral - Rat - 3,310 mg/kg (RTECS)
LC50 Inhalation - Mouse - 4 h - 2,819 mg/l (RTECS)

Skin corrosion/irritation
Skin – Rabbit Result: Causes burns. - 4 h (OECD Test Guideline 404) (IUCLID)

Serious eye damage/eye irritation
Eyes – Rabbit Result: Causes burns. - 4 h (OECD Test Guideline 405) (IUCLID)
Causes serious eye damage.

Respiratory or skin sensitisation: No data available

Germ cell mutagenicity: Ames test, Salmonella typhimurium, Result: negative
Mutagenicity (mammal cell test): chromosome aberration.
Chinese hamster ovary cells, Result: negative

Mutagenicity (micronucleus test): Rat - male and female - Bone marrow
Result: negative

Information on the likely routes of exposure:	Skin, eye, inhalation, ingestion

Potential health effects (acute):	Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. Ingestion or inhalation of concentrated acetic acid causes damage to tissues of the respiratory and digestive tracts. Symptoms include: hematemesis, bloody diarrhea, edema and/or perforation of the esophagus and pylorus, pancreatitis, hematuria, anuria, uremia, albuminuria, hemolysis, 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.
Target organ effects:	Specific target organ systemic toxicity - single exposure: The substance or mixture is not classified as specific target organ toxicant, single exposure. Specific target organ systemic toxicity - repeated exposure: The substance or mixture is not classified as specific target organ toxicant, repeated exposure.
Carcinogenicity:	IARC: No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC. ACGIH: No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH. No data available.
Potential chronic health effects:	No data available.
Teratogenicity:	No data available.
Developmental effects:	No data available.
Fertility effects:	No data available.
Irritation/corrosion:	No data available.

SECTION 12: ECOLOGICAL INFORMATION

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. (IUCLID)
Bioaccumulation:	No data available.
Biodegradation:	No data available.
Abiotic Degradation:	No data available.
Mobility in soil, water:	No data available.
Other adverse effects:	No data available.
Persistence and degradability:	No data available.

SECTION 13: DISPOSAL CONSIDERATIONS

Disposal methods: The generation of waste should be avoided or minimized wherever possible. Dispose of surplus and nonrecyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

Contaminated packaging: Dispose of as unused product.

SECTION 14: TRANSPORT INFORMATION

Land transport (DOT)	
UN number	UN 2789
Proper shipping name	Acetic acid, glacial
Class	8 (3)
Packing group	II
Air transport (IATA)	
UN number	UN 2789
Proper shipping name	Acetic acid, glacial
Class	8 (3)
Packing group	II
Sea transport (IMDG)	
UN number	UN 2789
Proper shipping name	ACETIC ACID, GLACIAL
Class	8 (3)
Packing group	II
EMS-No:	F-E, S-C

Special precautions for user:	Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident.

SECTION 15: REGULATORY INFORMATION

This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations (HPR) and the SDS contains all the information required by the HPR.

SECTION 16: OTHER INFORMATION

Revision date: October 26, 2023
UN = United Nations

Disclaimer

While the information and recommendations set forth are believed to be accurate as of data hereof, Aqua Bond Inc., makes no warranty with respect thereto and disclaims all liability from reliance thereon.