SAFETY DATA SHEET

Acetic Acid, Glacial — Laboratory Reagent, Analytical Reagent, HPLC and Ultrapure PPB grades

Prepared in accordance with 29 CFR 1910.1200 (OSHA Hazard Communication Standard, 2024 amendment / GHS Rev. 7), UN GHS, US DOT 49 CFR Parts 171–180 and Canada HPR (SOR/2015-17)

SDS number	**HP-SDS-20100-US-01**
Version / Revision	Version 1.0
Issue date	01 November 2026
Supersedes	Not applicable (first issue)
Review due	01 November 2029, or earlier if new hazard information becomes available
Companion sheet	A GB/EU sheet for supply by Highpuris Ltd will be issued separately. Do not substitute one sheet for the other — the classification is the same but the exposure limits, supply restrictions and legal references are not.

1 SECTION 1: IDENTIFICATION

1.1 Product identifier

Product name	**Acetic Acid, Glacial**
Product description	Glacial (anhydrous) acetic acid, assay ≥ 99.5 % w/w (Laboratory Reagent) or ≥ 99.8 % w/w (Analytical Reagent / ACS, HPLC and Ultrapure PPB grades). All grades carry the same hazard classification and transport description.
Synonyms	Glacial acetic acid; Ethanoic acid; Methanecarboxylic acid; Vinegar acid; Acide acétique glacial
CAS number	64-19-7
EC (EINECS) number	200-580-7
EU Index number	607-002-00-6
REACH registration number	Not applicable to supply in the United States. A REACH registration (or coverage under a registrant's supply chain) is required before placement in the EU/EEA or Northern Ireland; UK REACH applies to Great Britain.
Molecular formula	$C_2H_4O_2$ (CH_3COOH)
Molecular weight	60.05 g/mol
Highpuris product code	**20100** — the 9-digit catalogue SKUs below are built as product code · grade · pack
Pack sizes covered	250 mL, 500 mL, 1 L and 2.5 L glass bottles (GL45), 5 L HDPE containers and 25 L HDPE drums, in UN-certified multi-unit shipping cases

Catalogue SKUs covered by this SDS

Grade	Assay	Pack size and SKU
Laboratory Reagent	≥ 99.5 %	500 mL **201000123** · 1 L **201000141** · 2.5 L **201000142** · 5 L **201000144** · 25 L **201000162**
Analytical Reagent	≥ 99.8 %	500 mL **201000223** · 1 L **201000241** · 2.5 L **201000242** · 5 L **201000244**
HPLC	≥ 99.8 %	1 L **201000641** · 2.5 L **201000642**
Ultrapure PPB	≥ 99.8 %	250 mL **201000422** · 500 mL **201000423** · 1 L **201000441**

1.2 Relevant identified uses of the substance and uses advised against

- **Identified uses:** laboratory analytical reagent; solvent and mobile-phase modifier for HPLC; acidification, buffer preparation, titration and extraction; trace-metal (ppb) applications in semiconductor, photovoltaic and ICP-MS laboratories; further formulation and repackaging by professional users.
- **Uses advised against:** not for food, drug, cosmetic, medicinal, household or consumer use. Not intended for use by the general public. Not to be used in any application resulting in human ingestion or direct dermal application.

1.3 Details of the supplier of the safety data sheet

Supplier	**Highpuris LLC** 9920 Pacific Heights Blvd, Suite 150 San Diego, CA 92121-4361 United States of America
Telephone	+1 (401) 288-1196
E-mail (SDS contact)	admin@highpuris.com · noreply@highpuris.com
Website	www.highpuris.com

1.4 Emergency telephone number

24-hour emergency (USA / Canada)	**CHEMTREC 1-800-424-9300**
24-hour emergency (international)	**CHEMTREC +1 703-527-3887** (collect calls accepted)
CHEMTREC contract number	**CCN 1024800** — Highpuris LLC, registered August 2026. Quote this number when calling; it must appear with the emergency telephone number on shipping papers under 49 CFR 172.604
Non-emergency (business hours)	+1 (401) 288-1196, 09:00 – 17:00 Pacific Time, Monday to Friday

2 SECTION 2: HAZARD(S) IDENTIFICATION

2.1 Classification of the substance or mixture

Classification under 29 CFR 1910.1200 (OSHA HCS 2024), UN GHS Rev. 7, EU CLP (EC) No 1272/2008 and Canada HPR:

Hazard class	Category	Hazard statement
Flammable liquids	Category 3	H226 — Flammable liquid and vapor
Skin corrosion / irritation	Category 1A	H314 — Causes severe skin burns and eye damage
Serious eye damage / eye irritation	Category 1	H318 — Causes serious eye damage

H318 is not required on the label where H314 is assigned (GHS labelling precedence rules). The harmonised EU classification for acetic acid (Index No. 607-002-00-6) is Flam. Liq. 3, H226; Skin Corr. 1A, H314, with specific concentration limits: Skin Corr. 1A at C ≥ 90 %; Skin Corr. 1B at 25 % ≤ C < 90 %; Skin Irrit. 2 / Eye Irrit. 2 at 10 % ≤ C < 25 %.

2.2 GHS label elements

Hazard pictograms — required on the label and on every shipped container:



GHS02 — Flame



GHS05 — Corrosion

Pictograms must be a square set on a point, with a black symbol on a white ground and a red border wide enough to be clearly visible. Minimum size is one-fifteenth of the label surface area and never smaller than 10 mm × 10 mm (16 mm × 16 mm where the package holds more than 3 L). Where the corresponding DOT transport label is displayed on the outer packaging, the duplicate GHS pictogram may be omitted from that outer packaging under 29 CFR 1910.1200(f)(5); all pictograms remain required on the inner container label.

Signal word	**DANGER**
Hazard statements	H226 — Flammable liquid and vapor. 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 and lighting equipment.
- P242 — Use non-sparking tools.
- P243 — Take action to prevent static discharges.
- P260 — Do not breathe mist, vapours or spray.
- P264 — Wash hands and exposed skin thoroughly after handling.
- P280 — Wear protective gloves, protective clothing, eye protection and face protection.

Precautionary statements — 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 or shower.
- 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.
- P363 — Wash contaminated clothing before reuse.
- P370 + P378 — In case of fire: use dry chemical, carbon dioxide or alcohol-resistant foam to extinguish.

Precautionary statements — Storage and disposal

- P403 + P235 — Store in a well-ventilated place. Keep cool.
- P405 — Store locked up.
- P501 — Dispose of contents and container in accordance with federal, state, provincial and local regulations.

2.3 Other hazards which do not result in classification

- Vapour is heavier than air (vapour density 2.1) and can travel a considerable distance to a source of ignition and flash back. Explosive vapour–air mixtures form above the flash point of 40 °C (104 °F) within the range 4.0 – 19.9 vol %.
- Corrosive to many metals in the presence of moisture, liberating flammable hydrogen gas which can accumulate in container headspace.
- Freezes at approximately 16.6 °C (62 °F). The solid expands on freezing and can fracture glass containers; thaw gently at room temperature before opening — never with direct heat.
- Reacts violently with strong oxidising agents (chromic acid, nitric acid, permanganates, peroxides, perchlorates) and exothermically with strong bases; mixing with hypochlorite bleach liberates chlorine.
- The vapour is strongly irritating; concentrations above the ceiling limits cause lachrymation and respiratory irritation before obvious discomfort.
- The substance does not meet PBT or vPvB criteria under REACH Annex XIII and is not an identified endocrine disruptor.

2.4 Unknown acute toxicity

Not applicable. Acute toxicity data are available for the substance; no component of unknown acute toxicity is present.

3 SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

Substance — single component. All Highpuris grades are ≥ 99.5 % acetic acid; the balance is water. Trace impurities are controlled to the grade specification and are not present at levels that alter the classification.

Chemical name	CAS No.	EC No.	Conc. (% w/w)	GHS classification of the ingredient
Acetic acid (glacial)	64-19-7	200-580-7	≥ 99.5 – 100	Flam. Liq. 3, H226; Skin Corr. 1A, H314; Eye Dam. 1, H318
Water	7732-18-5	231-791-2	≤ 0.5	Not classified

EU Index number for acetic acid: 607-002-00-6. Specific concentration limits in EU CLP Annex VI: Skin Corr. 1A / H314 at C ≥ 90 %; Skin Corr. 1B / H314 at 25 % ≤ C < 90 %; Skin Irrit. 2 / H315 and Eye Irrit. 2 / H319 at 10 % ≤ C < 25 %.

Impurities and stabilising additives: none deliberately added.

4 SECTION 4: FIRST-AID MEASURES

4.1 Description of first-aid measures

General. Move the casualty out of the danger area. Rescuers must protect themselves — wear eye/face protection, gloves and, where mist or vapour is present, respiratory protection. Remove all contaminated clothing and footwear immediately while flushing. Never give anything by mouth to an

unconscious or convulsing person. Show this Safety Data Sheet to the attending physician. Immediate medical attention is required for all exposures.
Inhalation. Move the casualty to fresh air at once and keep at rest in a position comfortable for breathing. If breathing is difficult, trained personnel should give oxygen. If breathing has stopped, give artificial respiration — do not use mouth-to-mouth; use a bag-valve mask or other mechanical device. Obtain medical attention immediately. Pulmonary oedema may be delayed; keep the casualty under medical observation.
Skin contact. Immediately flush the affected area with copious quantities of lukewarm, gently flowing water for at least 15 minutes (30 minutes for large-area contact), removing contaminated clothing, shoes and jewellery while flushing. Do not attempt to neutralise the acid. Obtain medical attention immediately. Wash contaminated clothing, including the inside, before re-use.
Eye contact. Immediately flush the eyes with lukewarm, gently flowing water for at least 15 minutes, holding the eyelids wide open. Remove contact lenses if present and if it can be done without delay; do not interrupt flushing to do so. Obtain immediate medical attention from an ophthalmologist. Continue irrigation en route to medical care.
Ingestion. Do NOT induce vomiting — re-exposure of the oesophagus and the risk of aspiration make vomiting dangerous. If the casualty is conscious and alert, rinse the mouth thoroughly with water. Do not give sodium bicarbonate or other neutralising agents. Do not attempt gastric lavage. Obtain medical attention immediately.

4.2 Most important symptoms and effects, both acute and delayed

- Skin: immediate pain, redness, blistering and deep chemical burns; repeated contact causes dermatitis and skin thickening.
- Eyes: severe pain, lacrimation, corneal burns and opacification; risk of permanent damage and blindness.
- Inhalation: burning of the nose and throat, cough, hoarseness, chest tightness and dyspnoea; high concentrations may cause chemical pneumonitis and delayed pulmonary oedema.
- Ingestion: severe burns of the mouth, throat, oesophagus and stomach; severe swelling, damage to delicate tissue and danger of perforation; circulatory collapse in severe cases.
- Systemic: symptoms of over-exposure may include headache, dizziness, tiredness, nausea and vomiting.

4.3 Indication of any immediate medical attention and special treatment needed

- Treat as a severe acid burn. Symptomatic and supportive treatment.
- Monitor the airway closely after inhalation; laryngeal oedema and bronchospasm may require early intubation. Observe for delayed-onset pulmonary oedema.
- Following ingestion, endoscopy within 12 – 24 hours may be indicated to assess the extent of injury. Activated charcoal is of no value and obscures the endoscopic view.
- Do not use chemical neutralising agents on burns or in the gastrointestinal tract.

5 SECTION 5: FIRE-FIGHTING MEASURES

5.1 Extinguishing media

- Suitable: dry chemical, carbon dioxide, dry sand or alcohol-resistant foam. Water spray or fog may be used to cool fire-exposed containers and to disperse vapour.
- Unsuitable: do NOT use a solid water jet — it may spread the burning liquid. Ordinary (non-alcohol-resistant) foam breaks down on contact with the polar solvent.

5.2 Special hazards arising from the substance or mixture

- Flammable liquid (flash point 40 °C / 104 °F, closed cup). Vapour is heavier than air, may travel along the ground to a distant source of ignition and flash back. Vapour–air mixtures are explosive between 4.0 and 19.9 vol %.
- Autoignition temperature 427 °C (800.6 °F).
- Containers may rupture violently when heated owing to pressure build-up; evolved hydrogen from contact with metals adds to the hazard.
- Thermal decomposition produces carbon monoxide, carbon dioxide and irritating, corrosive vapours of acetic acid.
- The product itself causes severe burns of the eyes, skin and mucous membranes; fire-fighting water run-off is acidic and corrosive.

5.3 Advice for fire-fighters

- Wear a positive-pressure self-contained breathing apparatus (NIOSH-approved) and full acid-resistant protective clothing. Structural fire-fighting turnout gear alone provides only limited protection against this material.
- Evacuate and isolate the area. Approach from upwind. Stay out of low areas where vapour may collect.
- Use water spray to cool fire-exposed containers; withdraw immediately if a rising sound from a venting safety device or discolouration of a tank occurs.
- Prevent run-off water from entering drains and watercourses; collect contaminated fire-fighting water separately for disposal.
- Refer to ERG 2024 Guide 132 (Flammable liquids — corrosive).

6 SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel. Evacuate the area immediately. Remove all sources of ignition — no smoking, flares, sparks or flames in the immediate area. Move upwind. Restrict access. Do not walk through spilled material. Avoid all contact with liquid and vapour. Alert the site emergency response team.

For emergency responders. Do not attempt response without suitable PPE: chemical splash goggles with full face shield, acid-resistant suit and boots, butyl rubber gloves, and a NIOSH-approved air-purifying respirator with organic-vapour/acid-gas cartridges or SCBA where vapour concentrations are unknown or exceed exposure limits. Use only intrinsically safe equipment and non-sparking tools. Ventilate confined spaces before entry. Initial isolation of at least 50 m (150 ft) in all directions for a small liquid spill is recommended; increase the distance for large spills and consult ERG Guide 132.

6.2 Environmental precautions

- Prevent entry into drains, sewers, surface water, groundwater and soil. Dyke or bund the spill.
- The acid is harmful to aquatic life through pH depression and oxygen demand and will corrode concrete and metal drainage infrastructure.
- Report releases as required by law. Under CERCLA, a release of 5,000 lb (2,270 kg; approximately 570 US gal) or more of acetic acid in a 24-hour period must be reported immediately to the National Response Center (1-800-424-8802).

6.3 Methods and material for containment and cleaning up

- Stop the leak if it can be done without risk. Upright leaking containers and transfer the contents to a sound, labelled, acid-resistant container.
- Contain the spill with inert, non-combustible absorbent — dry sand, earth, vermiculite, diatomaceous earth or a proprietary acid absorbent. Do NOT use combustible absorbents such as sawdust, paper or cloth.
- Small spills may be carefully neutralised with a dry alkaline material such as soda ash, sodium bicarbonate or lime, added slowly from a distance. Neutralisation liberates carbon dioxide, heat and spray — never confine the reaction.
- Collect the absorbed or neutralised material with non-sparking tools into a labelled, sealed, corrosion-resistant container for disposal.
- Flush the residual area with large volumes of water only after the bulk has been removed, collecting the wash water for pH adjustment and disposal.
- Ventilate the area thoroughly and monitor for acetic acid vapour and flammable atmosphere before releasing the area.

6.4 Reference to other sections

See Section 8 for exposure controls and personal protection, and Section 13 for disposal considerations.

7 SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

- Handle only in a chemical fume hood or under local exhaust ventilation. Open and dispense with the sash lowered.
- Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating and lighting equipment and non-sparking tools.
- Ground and bond containers and receiving equipment when transferring; take precautionary measures against static discharge. Use only acid-resistant transfer equipment (PTFE, PP, HDPE, PVDF, glass, 316 stainless steel).
- Wear the personal protective equipment specified in Section 8 at all times when handling. Avoid breathing vapour or mist; avoid contact with skin, eyes and clothing.
- Open containers slowly to relieve any internal pressure; point the opening away from the face and body.
- Do not eat, drink or smoke in the handling area. Wash hands and exposed skin thoroughly after handling.
- Keep the container tightly closed when not in use. Do not return unused material to the original container.
- Ensure an emergency eyewash station and safety shower are within 10 seconds' unobstructed travel of the work area.
- Empty containers retain product residue and vapour and remain flammable and corrosive — do not cut, weld, drill or reuse.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions	Cool, dry, well-ventilated flammables / corrosives store away from direct sunlight and sources of heat or ignition. Keep locked up or in an area accessible only to authorised, trained personnel. Store in accordance with NFPA 30 / 29 CFR 1910.106 (Class II combustible liquid).
Recommended temperature	17 – 25 °C (63 – 77 °F). Protect from freezing — the product solidifies at approximately 16.6 °C (62 °F) and may fracture glass containers on expansion.
Containment	Store on an acid-resistant, bunded or kerbed floor with secondary containment of at least 110 % of the largest container. Segregate from other chemical classes.
Suitable materials	Original supplier packaging: borosilicate or soda-lime glass with PTFE-faced closures; HDPE, PP, PTFE, PVDF, 316 stainless steel, aluminium (glacial grade only).

Unsuitable materials	Carbon steel, zinc, galvanised surfaces, copper, brass, bronze, lead and mild steel; concrete and limestone are attacked.
Incompatible storage	Segregate from strong oxidising agents (nitric acid, chromic acid, permanganates, peroxides, perchlorates, hypochlorites), strong bases and amines, metals and metal powders, acetaldehyde, acetic anhydride, carbonates and chlorosulfonic acid.
Shelf life	Indefinite when stored as specified in unopened original packaging; ultrapure grades should be opened only in a clean environment, after which trace-metal levels can no longer be guaranteed against the released specification.

7.3 Specific end use(s)

Laboratory reagent, chromatography solvent and industrial process chemical. No further specific guidance beyond the identified uses in Section 1.2.

8 SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Occupational exposure limits — acetic acid (CAS 64-19-7)

Source	Type	Value
OSHA PEL (29 CFR 1910.1000, Table Z-1)	8-hour TWA	10 ppm (25 mg/m³)
NIOSH REL	10-hour TWA / 15-minute STEL	10 ppm (25 mg/m³) / 15 ppm (37 mg/m³)
ACGIH TLV	8-hour TWA / STEL	10 ppm / 15 ppm
NIOSH IDLH	Immediately dangerous to life or health	50 ppm
Cal/OSHA PEL (8 CCR 5155)	8-hour TWA / STEL	10 ppm (25 mg/m³) / 15 ppm (37 mg/m³)
Mexico OEL (NOM-010-STPS)	TWA / STEL	10 ppm / 15 ppm
EU IOELV (Directive 2017/164/EU)	8-hour TWA / STEL	25 mg/m³ (10 ppm) / 50 mg/m³ (20 ppm)

Derived No-Effect Levels (DNELs) — workers: long-term inhalation, local: 25 mg/m³; acute inhalation, local: 25 mg/m³. Predicted No-Effect Concentrations (PNECs): freshwater 3.058 mg/L; marine water 0.3058 mg/L; sewage treatment plant 85 mg/L.

8.2 Exposure controls

Appropriate engineering controls

- Use in a certified chemical fume hood with a minimum face velocity of 0.5 m/s (100 ft/min), or under equivalent local exhaust ventilation captured at the point of generation.
- Provide general dilution ventilation sufficient to keep airborne concentrations below the exposure limits and well below the lower explosion limit. Exhaust ducting and fans must be corrosion-resistant and explosion-proof.
- Safety shower and eyewash station must be immediately available (ANSI/ISEA Z358.1).

Eye and face protection

- Chemical splash goggles conforming to ANSI/ISEA Z87.1 or EN 166, worn together with a full face shield whenever there is any risk of splashing, pouring or pressurised release. Ordinary safety spectacles are not adequate.

Skin and body protection

- Gloves: butyl rubber (≥ 0.5 mm; breakthrough time > 480 minutes, EN ISO 374 performance level 6) is the preferred material. Neoprene is suitable for extended contact; nitrile is suitable only for incidental splash and must be changed immediately on contact. Natural rubber latex and PVC are not recommended. Confirm performance with the glove manufacturer for the specific task.
- Body: acid-resistant apron or coveralls over a flame-resistant laboratory coat for small-scale work; a full chemically resistant suit (Type 3/4, EN 14605) with hood for bulk transfer, drumming and spill response.
- Feet: closed, chemically resistant boots or overboots. Trouser legs worn outside the boots.

Respiratory protection

- Not normally required where work is carried out in an effective fume hood. Where the exposure limits may be exceeded, use a NIOSH-approved air-purifying respirator with organic-vapour/acid-gas cartridges (EN 14387 type ABE) within its assigned protection factor; add a P100/P3 particulate filter where mist is present.
- For unknown concentrations, oxygen-deficient atmospheres, emergency response or concentrations at or above 50 ppm (IDLH), use a positive-pressure self-contained breathing apparatus or a supplied-air respirator with escape bottle.
- Respirator use requires a written programme under 29 CFR 1910.134, including medical evaluation, fit testing and training.

Environmental exposure controls

- Do not discharge to the environment. Route vent gases through a scrubber where necessary. Neutralise aqueous effluent to the pH range permitted by the receiving authority before discharge.

9 SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Property	Value
Physical state	Liquid (solidifies below approximately 16.6 °C)
Colour	Colourless, clear
Odour	Pungent, vinegar-like
Odour threshold	0.2 – 1.0 ppm
Melting point / freezing point	16 – 16.5 °C (60.8 – 61.7 °F)
Boiling point / initial boiling point	117 – 118 °C (242.6 – 244.4 °F) at 101.3 kPa
Flammability	Flammable liquid and vapour (Category 3). Classified on the basis of test data.
Lower / upper explosion limit	4.0 vol % / 19.9 vol % in air
Flash point	40 °C (104 °F), closed cup
Auto-ignition temperature	427 °C (800.6 °F)
Decomposition temperature	No data available
pH	< 2.5 (10 g/L aqueous solution at 20 °C); approximately 2.4 for a 1 M solution
Kinematic / dynamic viscosity	Dynamic viscosity 1.53 mPa·s at 25 °C (kinematic ≈ 1.46 mm²/s)
Solubility (water)	Completely miscible with water in all proportions, with evolution of heat
Solubility (other)	Miscible with ethanol, diethyl ether, acetone, glycerol and most organic solvents; soluble in benzene; insoluble in carbon disulfide
Partition coefficient n-octanol/water (log Kow)	−0.17 to −0.2
Vapour pressure	1.52 kPa (11.4 mmHg) at 20 °C; 2.07 kPa at 25 °C
Density / relative density	1.048 – 1.049 g/cm³ at 20 °C (relative density 1.05)
Relative vapour density	2.10 (air = 1) — vapour is heavier than air and will collect in low areas
Particle characteristics	Not applicable (liquid)
Molecular weight	60.05 g/mol
Evaporation rate	0.97 (n-butyl acetate = 1)
Oxidising properties	None
Explosive properties	Not explosive; explosive vapour–air mixtures possible above the flash point
Surface tension	27.6 mN/m at 20 °C
Concentration	≥ 99.5 % w/w (Laboratory Reagent); ≥ 99.8 % w/w (Analytical Reagent, HPLC, Ultrapure PPB)

9.2 Other information

No additional physical or chemical hazard information. Test data above relate to glacial acetic acid unless otherwise stated.

10 SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

A weak organic acid that is nevertheless highly corrosive in the glacial form. Reacts exothermically with bases and with many metals, and vigorously with strong oxidising agents as detailed below. Reactive hazard: none known under normal conditions of use.

10.2 Chemical stability

Stable under the recommended storage and handling conditions. Not sensitive to mechanical impact. Vapour–air mixtures are sensitive to ignition by static discharge above the flash point. Hazardous polymerisation does not occur.

10.3 Possibility of hazardous reactions

- Violent, heat-generating reaction with alkalis, amines and other bases; can cause boiling and spattering.
- Reaction with most metals releases flammable hydrogen gas, which may form an explosive atmosphere in enclosed spaces or container headspace.
- Violent or explosive reaction with strong oxidising agents — chromic acid, nitric acid, hydrogen peroxide, permanganates, perchlorates, peroxides and sodium hypochlorite (which liberates chlorine).
- Exothermic reaction with acetic anhydride, acetaldehyde, chlorosulfonic acid, ethylenediamine, ethyleneimine, oleum and phosphorus trichloride.
- Reaction with carbonates and bicarbonates liberates carbon dioxide and can pressurise closed containers.

10.4 Conditions to avoid

Heat, sparks, open flames, hot surfaces and other ignition sources; static discharge; direct sunlight; freezing (expansion may fracture containers); contact with incompatible materials; confinement of evolved gas in closed systems.

10.5 Incompatible materials

Class	Examples
Oxidising agents	Chromic acid, nitric acid, hydrogen peroxide, permanganates, perchlorates, peroxides, sodium hypochlorite (bleach), chlorinated isocyanurates
Bases and amines	Sodium and potassium hydroxide, ammonia and ammonium hydroxide, ethanolamines, ethylenediamine, organic amines
Metals and alloys	Carbon steel, zinc, galvanised surfaces, copper, brass, bronze, lead, magnesium, metal powders
Reactive organics	Acetaldehyde, acetic anhydride, chlorosulfonic acid, ethyleneimine, 2-aminoethanol
Carbonates and cyanides	Carbonates and bicarbonates (CO_2 evolution); cyanides (hydrogen cyanide); sulfides (hydrogen sulfide)
Construction materials	Concrete, marble, limestone, unlined mild steel, natural rubber

10.6 Hazardous decomposition products

Carbon monoxide (CO), carbon dioxide (CO_2) and irritating, corrosive acetic acid vapour on heating or in a fire. Hydrogen gas on contact with metals.

11 SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on hazard classes as defined in 29 CFR 1910.1200(c) / GHS

Likely routes of exposure: skin and eye contact, inhalation of vapour or mist, and accidental ingestion.

Endpoint	Data and conclusion
Acute toxicity — oral	LD_{50} (rat): 3,310 mg/kg bw. Effects are principally local corrosion of the gastrointestinal tract. Not classified for acute oral toxicity (above the Category 4 cut-off of 2,000 mg/kg); corrosivity governs.
Acute toxicity — dermal	LD_{50} (rabbit): 1,060 mg/kg bw (literature value for undiluted acid; local corrosion dominates). Not classified.
Acute toxicity — inhalation	LC_{50} (rat, 4 h): > 40 mg/L (vapour); 11.4 mg/L (mouse, 1 h). Not classified; respiratory irritation and corrosivity govern.
Skin corrosion / irritation	Corrosive. Causes severe, full-thickness chemical burns on short contact. Classified Skin Corrosion Category 1A (exposure ≤ 3 minutes, observation ≤ 1 hour) on the basis of the harmonised EU classification for acetic acid ≥ 90 % and human experience. Animal testing is not required for a substance of known corrosivity.
Serious eye damage / irritation	Causes serious, irreversible eye damage, including corneal opacification and blindness. Classified Eye Damage Category 1.
Respiratory or skin sensitisation	Not a skin sensitiser (guinea-pig maximisation test negative) and not a respiratory sensitiser. Not classified.
Germ cell mutagenicity	Negative in the bacterial reverse mutation (Ames) test and in mammalian in vitro assays at non-cytotoxic, pH-controlled concentrations. Not classified.
Carcinogenicity	Not listed by IARC, NTP, ACGIH or OSHA as a carcinogen. Not classified.

Endpoint	Data and conclusion
Reproductive toxicity	No evidence of adverse effects on fertility or development in available studies (acetate is a normal metabolic intermediate). Not classified.
STOT — single exposure	Not classified. Vapour and mist are irritating to the respiratory tract; effects are covered by the corrosivity classification.
STOT — repeated exposure	Not classified. Repeated occupational exposure to vapour has been associated with erosion of dental enamel, chronic bronchitis, conjunctivitis and skin thickening, generally at concentrations well above current exposure limits.
Aspiration hazard	Based on available data, the classification criteria are not met.

11.2 Other information

Target organs: eyes, skin, mucous membranes, respiratory system, gastrointestinal tract and teeth. Persons with pre-existing skin disorders, eye disease or chronic respiratory disease (asthma, chronic bronchitis, emphysema) may be at increased risk from exposure. Endocrine disrupting properties: this product does not contain any known or suspected endocrine disruptors.

The toxicological properties of the glacial acid have not been fully investigated in all endpoints; the assessment above is based on the properties of acetic acid, its corrosivity and the pH of its solutions, which is the determining factor for local effects.

12 SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Endpoint	Value
Fish — acute	LC_{50} (Pimephales promelas, fathead minnow, 96 h): 88 mg/L. LC_{50} (Lepomis macrochirus, bluegill, 96 h): 75 mg/L.
Aquatic invertebrates — acute	EC_{50} (Daphnia magna, water flea, 24 h): 95 mg/L. EC_{50} (Daphnia magna, 48 h): 65 mg/L.
Algae	No reliable species-specific data available. Effects are attributable to acidification rather than to intrinsic toxicity of the acetate ion.
Microorganisms	EC_{50} (Photobacterium phosphoreum, Microtox, 5 – 25 min): 8.8 mg/L. Activated sludge respiration is inhibited only at pH values outside the tolerance range of the biomass.

The ecotoxicity of acetic acid is governed almost entirely by the pH depression it causes in the receiving water. In waters of adequate buffering capacity the substance dissociates to acetate and hydronium ions and is rapidly neutralised and biodegraded.

12.2 Persistence and degradability

Readily biodegradable (> 99 % in 28 days, OECD 301). Acetate is a normal metabolic intermediate and is rapidly mineralised in water, soil and sewage treatment plants. Persistence is unlikely.

12.3 Bioaccumulative potential

Not expected to bioaccumulate. log Kow = −0.17; estimated BCF 3.2 (fish).

12.4 Mobility in soil

Miscible with water and highly mobile in soil and groundwater owing to its water solubility; rapid biodegradation limits transport. Low adsorption to soil (Koc ≈ 1).

12.5 Results of PBT and vPvB assessment

The substance does not meet the criteria for PBT or vPvB under REACH Annex XIII.

12.6 Other adverse effects

Germany water hazard class WGK 1 (slightly hazardous to water). Not an ozone-depleting substance; global warming potential not applicable.

13 SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

- Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste under 40 CFR 261 and must consult federal, state and local hazardous waste regulations to ensure complete and accurate classification.
- Dispose of surplus and non-recyclable material via a licensed hazardous-waste contractor, preferably by incineration in a permitted facility with flue-gas scrubbing. Do not discharge to sewers, drains or watercourses.

- Small laboratory quantities may be diluted with a large excess of water and neutralised with dilute alkali (sodium carbonate or sodium bicarbonate) by trained personnel before disposal in accordance with the receiving authority's permit; neutralisation is exothermic and liberates carbon dioxide — never carry it out in a closed container.
- Empty containers retain product residue and flammable vapour and remain hazardous. Do not cut, weld, braze, drill, grind or expose to heat, flame or sparks.
- Triple-rinse containers with water, collecting the rinsate for neutralisation and permitted disposal, before offering for recycling or reconditioning; otherwise dispose of the container as unused product. Deface or remove the label from a properly cleaned container.
- Dispose of the container in accordance with local regulations. RCRA "empty" criteria are set out in 40 CFR 261.7.

13.2 Waste codes

RCRA (40 CFR 261): discarded unused product exhibits the ignitability characteristic (flash point < 60 °C) — EPA hazardous waste number D001 — and the corrosivity characteristic (aqueous solutions of pH ≤ 2) — D002. Not a P- or U-listed commercial chemical product. European waste catalogue: EWC code 16 05 06* (laboratory chemicals consisting of or containing hazardous substances) or 06 01 06* (other acids) from the manufacture, formulation, supply and use of acids. Final code allocation is the responsibility of the waste producer.

14 SECTION 14: TRANSPORT INFORMATION

This product is a regulated dangerous good in all modes of transport.

14.1 Common transport classification (all modes)

UN number / UN ID number	UN 2789
UN proper shipping name	Acetic acid, glacial (also "Acetic acid solution, with more than 80 % acid, by mass")
Transport hazard class	Class 8 — Corrosive substances
Subsidiary hazard	Class 3 — Flammable liquid
Packing group	II
Label(s) required	Class 8 "Corrosive" (white upper half / black lower half) and Class 3 "Flammable liquid" (red) — both labels on every package
Environmental hazards	Not classified as a marine pollutant under the IMDG Code and not an environmentally hazardous substance under ADR/RID.
Special precautions for user	Transport upright, secured against movement, away from foodstuffs. Segregate from bases, oxidisers and metals. Keep away from heat and ignition sources. Vehicles and containers must be of, or lined with, acid-resistant material. Protect from freezing below 16 °C.
Transport in bulk (MARPOL Annex II / IBC Code)	Acetic acid is listed in Chapter 17 of the IBC Code (pollution category Z, ship type 3). Not applicable to packaged goods; consult the ship's Certificate of Fitness for bulk carriage.

Transport hazard label(s) required on the package:



Class 8 — Corrosive



Class 3 — Flammable liquid

Minimum 100 mm × 100 mm on each side, set on a point, with a solid inner line 5 mm inside the edge (49 CFR 172.407). Reduced-size labels are permitted only where the package is too small to bear a full-size label. Where a subsidiary hazard label is required, it is displayed next to the primary label.

14.2 US DOT — 49 CFR (road, rail and domestic transport)

Hazardous materials table entry	Acetic acid, glacial or Acetic acid solution, with more than 80 percent acid, by mass — 8, UN2789, PG II
Label codes	8, 3
Special provisions (49 CFR 172.102)	A3, A6, A7, A10, B2, IB2, T7, TP2
Packaging — exceptions	49 CFR 173.154
Packaging — non-bulk	49 CFR 173.202
Packaging — bulk	49 CFR 173.242

Quantity limitation — passenger aircraft/rail	1 L
Quantity limitation — cargo aircraft only	30 L
Vessel stowage	Location A; other stowage provisions 40
Limited quantity	Authorised under 49 CFR 173.154(b): inner packagings not exceeding 1.0 L, package gross mass not exceeding 30 kg. Limited quantity marking required in place of labels.
Reportable quantity (RQ)	5,000 lb (2,270 kg) of acetic acid — approximately 570 US gal of product. Where a single package contains an RQ or more, the letters "RQ" must appear on the shipping paper and package marking.
ERG 2024 guide number	132 — Flammable liquids — corrosive
Emergency response telephone	Required on the shipping paper under 49 CFR 172.604 — see Section 1.4
Placarding	CORROSIVE placard required for bulk packagings and for non-bulk shipments where the aggregate gross weight of Table 2 materials is 454 kg (1,001 lb) or more. A FLAMMABLE placard may be displayed for the subsidiary hazard under 49 CFR 172.505 but is not required.

14.3 IMDG Code (sea)

UN number / class / PG	UN 2789, Class 8 (3), PG II
Proper shipping name	ACETIC ACID, GLACIAL
EmS (emergency schedules)	F-E (fire) and S-C (spillage)
Segregation group	Group 1 — Acids
Marine pollutant	No
Limited quantity	1 L
Excepted quantity	E2
Stowage and segregation	Stowage category A. Segregate from alkalis, oxidising agents (Class 5.1) and Class 4.3 substances; "away from" sources of heat. Refer to the IMDG Code edition in force for the stowage category and segregation table.

14.4 IATA DGR / ICAO Technical Instructions (air)

UN number / class / PG	UN 2789, Class 8 (3), PG II
Proper shipping name	Acetic acid, glacial
Passenger and cargo aircraft	Packing Instruction 851 — maximum net quantity 1 L per package
Cargo aircraft only	Packing Instruction 855 — maximum net quantity 30 L per package
Limited quantity (passenger aircraft)	Packing Instruction Y840 — maximum net quantity 0.5 L per package
Excepted quantity code	E2
ERG code (ICAO)	8F
Note	Packing instruction numbers change between editions of the IATA Dangerous Goods Regulations. Verify against the edition in force on the date of shipment before completing the Shipper's Declaration.

14.5 ADR / RID / ADN (European road, rail and inland waterway)

UN number / class / PG	UN 2789, Class 8, PG II
Classification code	CF1 — corrosive substances, flammable, liquid
Labels	8 + 3
Tunnel restriction code	(D/E)
Hazard identification number (Kemler)	83
Transport category / limited quantity	Transport category 2; limited quantity 1 L

Packing instructions	P001, IBC02
Note	Verify against the ADR/RID edition in force before shipment.

14.6 Shipping documentation example

UN2789, Acetic acid, glacial, 8, (3), PG II — followed by the number and type of packages, total quantity, packaging authorisation, emergency response telephone number and, where applicable, the "RQ" designation and limited-quantity marking.

The shipper is responsible for confirming that packaging is UN-performance tested and marked to the required standard, that all personnel involved are trained and certified under 49 CFR 172 Subpart H (and IATA/IMDG equivalents), and that the classification remains valid under the regulatory edition in force on the date of shipment.

15 SECTION 15: REGULATORY INFORMATION

15.1 United States federal regulations

Regulation	Status
TSCA (15 U.S.C. §2601 et seq.)	Acetic acid, CAS 64-19-7, is listed on the TSCA Chemical Substance Inventory with an "active" designation. No TSCA section 12(b) export notification requirement applies. Not subject to a section 5(a)(2) significant new use rule and not a TSCA 6(h) PBT substance.
OSHA Hazard Communication (29 CFR 1910.1200)	Classified as a hazardous chemical. This SDS is prepared to the HCS 2024 amendment (GHS Rev. 7), for which the compliance date for substances was 19 May 2026.
OSHA flammable liquids (29 CFR 1910.106)	Class II combustible liquid (flash point at or above 100 °F and below 140 °F) under the pre-2012 classification retained in NFPA 30; Category 3 flammable liquid under the current 29 CFR 1910.106. Storage and handling requirements apply.
OSHA PSM (29 CFR 1910.119, App. A)	Not a listed highly hazardous chemical.
CERCLA section 103 (40 CFR 302.4)	Hazardous substance. Reportable quantity 5,000 lb (2,270 kg). Releases at or above the RQ in any 24-hour period must be reported immediately to the National Response Center, 1-800-424-8802.
EPCRA section 302 (40 CFR 355, App. A)	Not an extremely hazardous substance; section 302 emergency planning notification is not triggered by this product.
EPCRA sections 311 / 312 (40 CFR 370)	Reportable. Applicable hazard classes: flammable (liquids), skin corrosion or irritation (Category 1A) and serious eye damage or eye irritation (Category 1). Reporting threshold 10,000 lb on site at any one time.
EPCRA section 313 (TRI, 40 CFR 372)	Not listed. No Toxics Release Inventory reporting requirement.
Clean Air Act section 112 / 112(r)	Not a listed hazardous air pollutant and not a regulated substance under 40 CFR 68.130.
Clean Water Act section 311 (40 CFR 116/117)	Designated hazardous substance; reportable quantity 5,000 lb. Not a section 307 priority pollutant or toxic pollutant.
RCRA (40 CFR 261)	Discarded unused product exhibits the ignitability (D001) and corrosivity (D002) characteristics. Not P- or U-listed.
DEA / Chemical Diversion and Trafficking Act (21 CFR 1310)	Not a List I or List II regulated chemical.
FDA / USDA	Not supplied as a food-grade, USP, FCC or NF material. Not for use in food, drug or cosmetic applications.
US Department of Homeland Security (6 CFR 27, App. A)	Not a chemical of interest.

15.2 United States state regulations

State list	Status
California Proposition 65	Acetic acid is not listed under the Safe Drinking Water and Toxic Enforcement Act of 1986. No Proposition 65 warning is required for this product.
California — other	Cal/OSHA PEL 10 ppm TWA / 15 ppm STEL. Not a CARB Toxic Air Contaminant.
Massachusetts Right-to-Know	Listed (Substance List, 105 CMR 670).
New Jersey Right-to-Know	Listed (Hazardous Substance List; substance list). Special Health Hazard Substance — corrosive, flammable.
Pennsylvania Right-to-Know	Listed (Hazardous Substance List).

State list	Status
Rhode Island, Minnesota, Texas	Listed on the respective state hazardous substance / right-to-know lists. Not listed: Illinois.

15.3 International regulations

Jurisdiction	Status
Canada	Classified under the Hazardous Products Regulations (SOR/2015-17) consistently with Section 2. Listed on the Domestic Substances List (DSL). Not subject to NPRI reporting.
European Union — CLP	Harmonised classification, Annex VI to Regulation (EC) No 1272/2008, Index No. 607-002-00-6: Flam. Liq. 3, H226; Skin Corr. 1A, H314, with the specific concentration limits given in Section 3.
European Union — REACH	Registered substance. Not on the Candidate List of substances of very high concern and not subject to authorisation (Annex XIV). Annex XVII restriction entry 75 (tattoo inks) applies to the use of the substance in tattoo inks only. Supplier REACH registration number to be inserted before EU/EEA placement.
Seveso III (Directive 2012/18/EU)	Not named individually; captured under hazard category P5c (flammable liquids, Category 2 or 3 not covered by P5a/P5b): lower tier 5,000 t / upper tier 50,000 t.
Rotterdam / Stockholm / Montreal Conventions	Not listed under the PIC procedure, not a persistent organic pollutant and not an ozone-depleting substance.
Basel Convention	Annex I — Y34 (acidic solutions or acids in solid form) when exported as waste.
Chemical Weapons Convention	Not a scheduled chemical.
Chemical inventories	Listed on TSCA (USA), DSL (Canada), EC Inventory / REACH (EU), AICS/AIIC (Australia), IECSC (China), ENCS and ISHL (Japan), KECI (Korea), PICCS (Philippines), NZIoC (New Zealand), TCSI (Taiwan) and the Indian Chemical Inventory.
Mexico	Moderate risk, Grade 2 (NOM-018-STPS). OEL (NOM-010-STPS): TWA 10 ppm; STEL 15 ppm.
Germany	Water Hazard Class WGK 1 (slightly hazardous to water).

15.4 Chemical safety assessment

A chemical safety assessment has been carried out for acetic acid under REACH by the registrant consortium. No exposure scenarios are annexed to this SDS; users placing the substance on the EU/EEA market should obtain the extended SDS from the registrant.

16 SECTION 16: OTHER INFORMATION

16.1 Hazard rating systems

System	Rating	Notes
NFPA 704	Health 3 · Flammability 2 · Instability 0 · Special: none	Corrosive; commonly also marked ACID or COR
HMIS® III	Health 3 · Flammability 2 · Physical hazard 0 · PPE: X	PPE code to be assigned by the employer based on the task



Rating scale 0 = minimal, 4 = severe. These ratings are supplementary and are not a substitute for the GHS classification in Section 2.

16.2 Full text of hazard statements referred to in this SDS

- H226 — Flammable liquid and vapour.
- H314 — Causes severe skin burns and eye damage.
- H315 — Causes skin irritation.
- H318 — Causes serious eye damage.
- H319 — Causes serious eye irritation.

16.3 Abbreviations and acronyms

Abbreviation	Meaning
ACGIH	American Conference of Governmental Industrial Hygienists
ADR / RID / ADN	European agreements concerning the international carriage of dangerous goods by road / rail / inland waterway
CAS	Chemical Abstracts Service

Abbreviation	Meaning
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CLP	Regulation (EC) No 1272/2008 on classification, labelling and packaging
DNEL / PNEC	Derived no-effect level / predicted no-effect concentration
EmS	Emergency schedule (IMDG Code)
EPCRA	Emergency Planning and Community Right-to-Know Act
ERG	Emergency Response Guidebook (PHMSA / Transport Canada / SCT)
GHS	Globally Harmonized System of Classification and Labelling of Chemicals
HCS	Hazard Communication Standard, 29 CFR 1910.1200
HMIS	Hazardous Materials Identification System
IARC	International Agency for Research on Cancer
IATA DGR	International Air Transport Association Dangerous Goods Regulations
IDLH	Immediately dangerous to life or health
IMDG	International Maritime Dangerous Goods Code
LC_{50} / LD_{50} / EC_{50}	Concentration / dose / effective concentration lethal or effective to 50 % of a test population
NFPA	National Fire Protection Association
NIOSH	National Institute for Occupational Safety and Health
NTP	National Toxicology Program
OSHA	Occupational Safety and Health Administration
PBT / vPvB	Persistent, bioaccumulative and toxic / very persistent and very bioaccumulative
PEL / REL / TLV	Permissible exposure limit / recommended exposure limit / threshold limit value
PG	Packing group
RCRA	Resource Conservation and Recovery Act
RQ / TPQ / TQ	Reportable quantity / threshold planning quantity / threshold quantity
SCBA	Self-contained breathing apparatus
STOT SE / RE	Specific target organ toxicity — single exposure / repeated exposure
TSCA	Toxic Substances Control Act
TWA / STEL	Time-weighted average / short-term exposure limit
WGK	Wassergefährdungsklasse (German water hazard class)

16.4 Key references

- 29 CFR 1910.1200, OSHA Hazard Communication Standard, as amended by the final rule of 19 July 2024 (89 FR 44144), aligning with GHS Revision 7.
- 49 CFR Parts 171–180, US DOT Hazardous Materials Regulations; Hazardous Materials Table, 49 CFR 172.101.
- 2024 Emergency Response Guidebook, Guide 132.
- IMDG Code and IATA Dangerous Goods Regulations, editions in force.
- 40 CFR 302.4, 40 CFR 355 Appendix A, 40 CFR 370, 40 CFR 372, 40 CFR 68.130 and 40 CFR 261.
- Regulation (EC) No 1272/2008 Annex VI, Index No. 607-002-00-6; Regulation (EC) No 1907/2006 Annex II.
- NIOSH Pocket Guide to Chemical Hazards, acetic acid; ACGIH TLVs and BEIs, current edition.
- Manufacturer safety data sheet for acetic acid (US OSHA HCS 2024 format, revision 8, December 2025) — source of the physical, toxicological and ecotoxicological test values reproduced here.
- ECHA registered substance dossier and PubChem CID 176, acetic acid.

16.5 Revision information

Version	1.0
Date of issue	01 November 2026

Reason for revision	First issue under Highpuris LLC. Content prepared in the 16-section format of 29 CFR 1910.1200, Appendix D, with full US DOT 49 CFR transport detail, IMDG / IATA / ADR classification, and the complete Highpuris catalogue SKU list for this product.
Sections revised	All — first issue
Prepared by	Regulatory Affairs, Highpuris LLC

16.6 Disclaimer

The information in this Safety Data Sheet is provided in good faith and is believed to be accurate as at the date of issue. It has been compiled from data on acetic acid, glacial published by regulatory authorities, manufacturers and recognised technical sources, and relates only to the specific material identified in Section 1. It does not constitute a warranty, express or implied, of merchantability, fitness for a particular purpose or of any other kind, and Highpuris LLC accepts no liability for loss or damage arising from the handling or use of the product. The material may present hazards in combination with other substances or in processes not described here. It is the responsibility of the user to determine the suitability of this information for their own particular purpose, to comply with all applicable laws and regulations, and to ensure that the material is handled only by adequately trained personnel. Transport classifications, exposure limits and regulatory listings change. This document must be reviewed against the regulatory editions in force at the date of each shipment.

— END OF SAFETY DATA SHEET —