SAFETY DATA SHEET

Perchloric Acid (69–72 %) — Laboratory Reagent, Analytical Reagent 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-28100-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	**Perchloric Acid (69–72 %)**
Product description	Aqueous solution of perchloric acid, nominal 70 % w/w (assay range 69.0 – 72.0 % w/w $HClO_4$) in Laboratory Reagent, Analytical Reagent and Ultrapure PPB grades. All grades carry the same hazard classification and transport description. Perchloric acid above 72 % is not supplied.
Synonyms	Hyperchloric acid; Perchloric acid 70 %; Perchloric acid solution; Acide perchlorique
CAS number	7601-90-3
EC (EINECS) number	231-512-4
EU Index number	017-006-00-4
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	$HClO_4$ (aq)
Molecular weight	100.46 g/mol ($HClO_4$)
Highpuris product code	**28100** — 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), packed with inert absorbent in UN-certified multi-unit shipping cases (glass inner packagings only)

Catalogue SKUs covered by this SDS

Grade	HClO assay	Pack size and SKU
Laboratory Reagent	69.0–72.0 %	500 mL **281000123** · 2.5 L **281000142**
Analytical Reagent	69.0–72.0 %	500 mL **281000223** · 1 L **281000241** · 2.5 L **281000242**
Ultrapure PPB	69.0–72.0 %	250 mL **281000422** · 500 mL **281000423** · 1 L **281000441**

1.2 Relevant identified uses of the substance and uses advised against

- **Identified uses:** laboratory analytical reagent; acid for wet digestion and sample decomposition (in a dedicated perchloric-acid fume hood), titration in non-aqueous media, electrolyte and ion-chromatography applications; 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, pesticide, biocidal, 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. Not to be used as a reagent for the preparation of explosives or pyrotechnic compositions.

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
Oxidising liquids	Category 1	H271 — May cause fire or explosion; strong oxidizer
Corrosive to metals	Category 1	H290 — May be corrosive to metals
Acute toxicity — oral	Category 4	H302 — Harmful if swallowed
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
Specific target organ toxicity, single exposure (respiratory system)	Category 3	H335 — May cause respiratory irritation
Specific target organ toxicity, repeated exposure (thyroid)	Category 2	H373 — May cause damage to organs (thyroid) through prolonged or repeated exposure

H318 is not required on the label where H314 is assigned (GHS labelling precedence rules). The harmonised EU classification for perchloric acid (Index No. 017-006-00-4) is Ox. Liq. 1, H271 (C > 50 %); Ox. Liq. 2, H272 (10 % < C ≤ 50 %); Skin Corr. 1A, H314 (C ≥ 50 %); Skin Corr. 1B, H314 (10 % ≤ C < 50 %); Skin Irrit. 2, H315 / Eye Irrit. 2, H319 (1 % ≤ C < 10 %). At 69 – 72 % w/w this product falls in the Ox. Liq. 1 / Skin Corr. 1A bands. Acute Tox. 4, STOT SE 3, STOT RE 2 and Met. Corr. 1 reflect the manufacturer's OSHA classification and are carried on the Highpuris label.

2.2 GHS label elements

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



GHS03 — Flame over circle



GHS05 — Corrosion



GHS07 — Exclamation mark



GHS08 — Health hazard

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	H271 — May cause fire or explosion; strong oxidizer. H290 — May be corrosive to metals. H302 — Harmful if swallowed. H314 — Causes severe skin burns and eye damage. H335 — May cause respiratory irritation. H373 — May cause damage to organs (thyroid) through prolonged or repeated exposure.

Precautionary statements — Prevention

- P210 — Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- P220 — Keep away from clothing and other combustible materials.
- P221 — Take any precaution to avoid mixing with combustibles.
- P234 — Keep only in original packaging.
- P260 — Do not breathe mist, vapours or spray.
- P264 — Wash hands and exposed skin thoroughly after handling.
- P270 — Do not eat, drink or smoke when using this product.
- P271 — Use only outdoors or in a well-ventilated area.
- P280 — Wear protective gloves, protective clothing, eye protection and face protection.
- P283 — Wear fire resistant or flame retardant clothing.

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.
- P306 + P360 — IF ON CLOTHING: Rinse immediately contaminated clothing and skin with plenty of water before removing clothes.
- 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.
- P371 + P380 + P375 — In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.
- P370 + P378 — In case of fire: use CO_2, dry chemical or foam to extinguish.
- P390 — Absorb spillage to prevent material damage.

Precautionary statements — Storage and disposal

- P402 — Store in a dry place.
- P403 + P233 — Store in a well-ventilated place. Keep container tightly closed.
- P405 — Store locked up.
- P406 — Store in a corrosive-resistant container with a resistant inner liner.
- 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

- Powerful oxidiser. Contact with organic materials, alcohols, glycerol, dimethyl sulfoxide, acetic anhydride, metal powders, bismuth, antimony, paper, wood or grease may cause fire or an explosion. Organic materials soaked in the acid (clothing, wipers, absorbents, wood) can ignite spontaneously or detonate when they dry.
- Hot, concentrated acid (above about 150 °C) is an explosion hazard with any oxidisable material. Heating must be carried out only in a dedicated perchloric-acid fume hood with a wash-down system; never heat in an ordinary fume hood. There is a risk of explosion if the product is heated under confinement.
- Perchlorate crystals and salts deposited in hood ductwork, on surfaces or on organic residues are shock-sensitive and can detonate. Contact with strong dehydrating agents (sulfuric acid, phosphorus pentoxide) can generate anhydrous perchloric acid, which is unstable and may explode spontaneously.
- Corrosive to common metals; contact liberates flammable hydrogen gas which can accumulate in container headspace. Discoloured (yellow or brown) acid indicates decomposition or contamination and must be disposed of — do not use or heat it.
- Perchloric acid at a concentration of 60 % by weight or greater is a highly hazardous chemical covered by the OSHA Process Safety Management standard (29 CFR 1910.119, threshold quantity 5,000 lb) and is a Class 3 oxidiser under NFPA 400.
- The substance is not identified as a PBT or vPvB substance under REACH Annex XIII and is not an identified endocrine disruptor.

2.4 Unknown acute toxicity

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

3 SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

Mixture — aqueous solution. Perchloric acid above 72 % is not supplied; the 72 % limit is the upper bound of the UN 1873 entry.

Chemical name	CAS No.	EC No.	Conc. (% w/w)	GHS classification of the ingredient
Perchloric acid	7601-90-3	231-512-4	69 – 72	Ox. Liq. 1, H271; Met. Corr. 1, H290; Skin Corr. 1A, H314; Eye Dam. 1, H318
Water	7732-18-5	231-791-2	28 – 31	Not classified

EU Index number for perchloric acid: 017-006-00-4. Concentration limits in EU CLP Annex VI: Ox. Liq. 1 / H271 at C > 50 %; Ox. Liq. 2 / H272 at 10 % < C ≤ 50 %; Skin Corr. 1A / H314 at C ≥ 50 %; Skin Corr. 1B / H314 at 10 % ≤ C < 50 %; Skin Irrit. 2 / H315 and Eye Irrit. 2 / H319 at 1 % ≤ C < 10 %. The ingredient classification above is the physical and corrosive classification; the additional health classes in Section 2.1 (Acute Tox. 4, H302; STOT SE 3, H335; STOT RE 2, H373) are the manufacturer's classification of the mixture.

Impurities and stabilising additives: none deliberately added. Trace impurities are controlled to the grade specification and are not present at levels that alter the classification.

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 pocket mask with a one-way valve, a bag-valve mask or other proper respiratory medical device. Call a physician immediately. Pulmonary oedema may be delayed; keep the casualty under medical observation.
Skin contact. Immediately flush the affected area with copious quantities of water for at least 15 minutes (30 minutes for large-area contact), removing contaminated clothing, shoes, gloves and jewellery while flushing. If acid is on clothing, rinse the clothing and skin with plenty of water before removing the clothes. Do not attempt to neutralise the acid. Call a physician immediately. Wash contaminated clothing, including the inside, before re-use. Keep removed clothing wet until it is laundered or discarded — organic fabric contaminated with the acid becomes a fire hazard when dry.
Eye contact. Immediately flush the eyes with plenty of water, also under the eyelids, 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. Clean the mouth with water. Never give anything by mouth to an unconscious person. Use of gastric lavage or emesis is contraindicated. Do not give sodium bicarbonate or other neutralising agents. Call a physician immediately.

4.2 Most important symptoms and effects, both acute and delayed

- Causes burns by all exposure routes. The product is a corrosive material.
- Skin: immediate pain, redness, blistering and deep chemical burns; tissue destruction and scarring.
- 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; mist may cause chemical pneumonitis and delayed pulmonary oedema.
- Ingestion: severe swelling, severe damage to the delicate tissue of the mouth, throat, oesophagus and stomach and danger of perforation.
- Repeated exposure: the perchlorate ion inhibits iodide uptake by the thyroid; the thyroid is the target organ for repeated exposure.

4.3 Indication of any immediate medical attention and special treatment needed

- Treat symptomatically as a severe acid burn.
- Following ingestion, possible perforation of the stomach or oesophagus should be investigated; endoscopy within 12 – 24 hours may be indicated. Activated charcoal is of no value and obscures the endoscopic view. Gastric lavage and emesis are contraindicated.
- Monitor the airway closely after inhalation; laryngeal oedema and bronchospasm may require early intubation. Observe for delayed-onset pulmonary oedema.
- Do not use chemical neutralising agents on burns or in the gastrointestinal tract.

5 SECTION 5: FIRE-FIGHTING MEASURES

5.1 Extinguishing media

- Suitable (manufacturer): carbon dioxide, dry chemical, dry sand, alcohol-resistant foam. The acid itself does not burn; choose the medium appropriate to the surrounding fire. For fires involving the oxidising liquid, water applied in large quantity from a safe distance is generally the most effective means of cooling and diluting (ERG 2024 Guide 143).
- Unsuitable: none specified by the manufacturer. Do not allow combustible absorbents or packaging to become soaked with the acid, and do not direct a solid water jet into hot, concentrated acid, which may spatter.

5.2 Special hazards arising from the substance or mixture

- Oxidiser (Category 1): contact with combustible or organic material may cause fire. May ignite combustibles (wood, paper, oil, clothing, etc.) and intensifies any fire in its vicinity.
- The aqueous product is not flammable. The manufacturer reports a flash point of 113 °C (235.4 °F); no explosion limits or autoignition temperature are available. NFPA flammability rating 0.
- Risk of explosion if heated under confinement. Hot concentrated acid and dried perchlorate residues on organic material are explosive; containers may rupture violently when heated.
- Thermal decomposition produces hydrogen chloride gas and irritating, corrosive gases and vapours (including oxides of chlorine).
- Contact with metals evolves flammable hydrogen. 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

- In case of major fire and large quantities: evacuate the area and fight the fire remotely due to the risk of explosion.
- Wear a positive-pressure, pressure-demand self-contained breathing apparatus (NIOSH/MSHA-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 to cool fire-exposed containers from a protected position; withdraw immediately if a rising sound from a venting safety device or discolouration of a container occurs. Do not move cargo or vehicles if the load has been exposed to heat.
- Prevent run-off water from entering drains and watercourses; collect contaminated fire-fighting water separately for disposal.
- Refer to ERG 2024 Guide 143 (Oxidizers — unstable).

6 SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel. Evacuate the area immediately. Keep people away from and upwind of the spill or leak. Restrict access and remove all combustible and organic materials (paper, wood, cloth, solvents, grease) from the vicinity of the spill. Do not walk through spilled material. Avoid all contact with liquid and mist. Ensure adequate ventilation and 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 and flame-retardant suit and boots, butyl rubber or neoprene gloves, and a NIOSH-approved supplied-air respirator or SCBA where mist or vapour concentrations are unknown or exceed exposure guidelines. Do not wear leather or cotton outer garments that cannot be rinsed. 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 143.

6.2 Environmental precautions

- Should not be released into the environment. 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, will corrode concrete and metal drainage infrastructure, and forms perchlorate, which is highly mobile in water.
- Report releases as required by law. Perchloric acid has no CERCLA reportable quantity, but releases may still be reportable to state, local and tribal authorities and to the site's emergency coordinator; call the National Response Center (1-800-424-8802) where a release threatens a waterway.

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, glass or PTFE-lined container.
- Soak up with inert, non-combustible mineral absorbent — dry sand, diatomaceous earth or a proprietary acid absorbent. Do NOT use combustible absorbents such as sawdust, paper, cloth or wood shavings.
- Wipe or mop up residue with copious water only. Never use paper towels, rags, cloth or other organic wipers — organic materials wetted with the acid can ignite or explode as they dry.
- Small spills may then be neutralised cautiously with sodium bicarbonate or soda ash added slowly from a distance; neutralisation liberates carbon dioxide, heat and spray — never confine the reaction.
- Sweep up and shovel the absorbed material with non-sparking, non-metallic tools into suitable, labelled, closed containers for disposal. Keep the waste away from all organic material and dispose of it promptly.

- Flush the 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 before releasing it.

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. Open and dispense with the sash lowered. Wear personal protective equipment and face protection; do not get in eyes, on skin or on clothing.
- Heating must be carried out only in a dedicated perchloric-acid fume hood with a wash-down system and non-combustible ductwork; never heat in an ordinary hood. Perchlorate crystals deposited in ductwork are shock-sensitive. Do not heat hot concentrated acid (above about 150 °C) in the presence of any oxidisable material.
- Keep away from clothing and other combustible materials and take every precaution to avoid mixing with combustibles. Never allow contact with organic materials, alcohols, glycerol, dimethyl sulfoxide, acetic anhydride, metal powders, bismuth, antimony, paper, wood or grease. Do not use dehydrating agents (sulfuric acid, phosphorus pentoxide) with the acid.
- Use only glass, PTFE or ceramic transfer equipment and trays; do not use rubber, cork, wood, plastics not rated for oxidisers or metal tools in contact with the acid. Never use paper, cloth or sawdust to clean up spills — wipe with water only.
- When diluting, ALWAYS add the acid slowly to water with stirring and cooling — never add water to the acid.
- Do not breathe mist or vapours. 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 and never return unused material to the original container.
- Inspect the acid before use: discoloured (yellow or brown) acid must not be used or heated and must be disposed of. Wear fire-resistant or flame-retardant clothing; rinse any clothing splashed with the acid immediately and keep it wet until laundered or discarded.
- Ensure an emergency eyewash station and safety shower are within 10 seconds' unobstructed travel of the work area and are tested regularly.
- Empty containers retain product residue and remain hazardous — do not cut, weld, drill or reuse. This material is covered by OSHA PSM (29 CFR 1910.119) at 60 % by weight or greater where the threshold quantity is held in a process.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions	Keep containers tightly closed in a dry, cool, well-ventilated corrosives area, away from direct sunlight and heat. Store in a dedicated cabinet for perchloric acid, locked up or in an area accessible only to authorised, trained personnel. Do not store near combustible materials. Quantities are limited as a Class 3 oxidiser under NFPA 400 and the applicable fire code.
Recommended temperature	Below 30 °C (86 °F). The manufacturer reports a melting point of −18 °C (−0.4 °F).
Containment	Store bottles on glass or ceramic trays or in secondary containment of at least 110 % of the largest container, on a non-combustible, acid-resistant floor. Never use wooden shelving, paper, cardboard or plastic trays not rated for oxidisers. Keep stock to a minimum and remove packaging material promptly.
Suitable materials	Original supplier packaging: borosilicate or soda-lime glass with PTFE-faced closures. Glass, ceramic and PTFE secondary containment; polypropylene with a resistant inner liner where specified by the manufacturer.
Unsuitable materials	All common metals (carbon steel, stainless steel, aluminium, zinc, copper, brass, bismuth, antimony); wood, paper, cardboard, cork, rubber, grease and oils; plastics not rated for oxidisers.
Incompatible storage	Store away from all organic materials and flammables, alcohols, glycerol, amines, dimethyl sulfoxide, acetic anhydride, strong reducing agents, finely powdered metals, and dehydrating agents (sulfuric acid, phosphorus pentoxide). Do not store in the same cabinet as organic acids, solvents or other combustibles.
Shelf life	Stable when stored as specified in unopened original packaging. Date each container on receipt and opening and inspect it regularly; any discoloured (yellow or brown) or contaminated acid must be disposed of. 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 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

No occupational exposure limits have been established for perchloric acid. Control exposure to mist and vapour as for strong mineral acids (keep below 1 mg/m³ as a working guide, by analogy with sulfuric and phosphoric acid).

8.2 Exposure controls

Appropriate engineering controls

- Use only under a chemical fume hood. Any procedure that heats the acid must be carried out in a dedicated perchloric-acid fume hood with a wash-down system and non-combustible (e.g. stainless steel, ceramic or PVC-free) ductwork; the hood must not be used for organic work. 29 CFR 1910.1450 (laboratory standard) calls for a designated perchloric-acid hood.
- Wash down the hood and ductwork on a documented schedule so that perchlorate deposits cannot accumulate. Use a face velocity appropriate to the hood design (minimum 0.5 m/s / 100 ft/min).
- Ensure adequate ventilation, especially in confined areas. 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, OSHA 29 CFR 1910.133 or EN 166, worn together with a full face shield whenever there is any risk of splashing, pouring or heating. Ordinary safety spectacles are not adequate.

Skin and body protection

- Gloves: neoprene or butyl rubber is recommended for handling the acid; nitrile is suitable only for incidental splash and must be changed immediately on contact. Natural rubber latex and leather are not recommended. Confirm performance with the glove manufacturer for the specific task. Rinse gloves with water before removal.
- Body: acid-resistant apron or coveralls over a flame-resistant or flame-retardant laboratory coat; a full chemically resistant suit with hood for bulk transfer and spill response. Avoid cotton or other organic outer layers that can retain acid; rinse any contaminated clothing at once.
- Feet: closed, chemically resistant boots or overboots. Trouser legs worn outside the boots. Discard contaminated leather articles.

Respiratory protection

- Not required under normal use conditions in an effective fume hood. Where mist may be generated outside a hood, use a NIOSH-approved respirator with an acid-gas (EN 14387 type E) cartridge and a P100 / EN 143 particulate filter.
- For unknown concentrations, emergency response or oxygen-deficient atmospheres, use a positive-pressure self-contained breathing apparatus or supplied-air respirator.
- Respirator use requires a written programme under 29 CFR 1910.134, including medical evaluation, fit testing and training. Handle in accordance with good industrial hygiene and safety practice.

Environmental exposure controls

- Do not discharge to the environment or empty into drains. Wash-down water from perchloric-acid hoods must be collected, neutralised and disposed of in accordance with the receiving authority's requirements.

9 SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Property	Value
Physical state	Liquid
Colour	Colourless
Odour	Strong
Odour threshold	No information available
Melting point / freezing point	−18 °C (−0.4 °F)
Boiling point / initial boiling point	203 °C (397.4 °F) at 760 mmHg
Flammability	Not flammable (aqueous solution). Liquid oxidiser, Category 1
Lower / upper explosion limit	No data available
Flash point	113 °C (235.4 °F) as reported by the manufacturer (method not given); the aqueous product is not flammable
Auto-ignition temperature	No data available
Decomposition temperature	No data available
pH	0.1 at 20 °C
Kinematic / dynamic viscosity	Dynamic viscosity 3.5 mPa·s at 20 °C
Solubility (water)	Soluble

Property	Value
Solubility (other)	No information available
Partition coefficient n-octanol/water (log Kow)	No information available
Vapour pressure	6.8 mmHg (0.91 kPa) at 25 °C
Density / relative density	1.66 (specific gravity)
Relative vapour density	3.46 (air = 1)
Particle characteristics	Not applicable (liquid)
Molecular weight	100.46 g/mol ($HClO_4$)
Evaporation rate	No data available
Oxidising properties	Oxidiser — strong oxidising liquid (Category 1)
Explosive properties	Not classified as explosive. Contact with combustible or organic material may cause fire; risk of explosion if heated under confinement or when hot and concentrated in contact with oxidisable material
Surface tension	No data available
Concentration	69.0 – 72.0 % w/w $HClO_4$ (Laboratory Reagent, Analytical Reagent and Ultrapure PPB)

9.2 Other information

No additional physical or chemical hazard information. Test data above are those reported by the manufacturer for the aqueous solution; where the manufacturer's data relate to a lower assay (60 – 70 %) they are presented as indicative for this 69 – 72 % product.

10 SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

A strong oxidising acid. Reactive hazard: yes — contact with combustible or organic material may cause fire or explosion. Reacts violently or explosively with the reducing agents, organics, dehydrating agents and metals listed below, and corrodes common metals.

10.2 Chemical stability

Stable under the recommended storage and handling conditions at ambient temperature. Oxidiser: contact with combustible or organic material may cause fire. Hot concentrated acid and perchlorate residues are shock-sensitive and explosive. Hazardous polymerisation does not occur.

10.3 Possibility of hazardous reactions

- Violent or explosive reaction with organic materials, alcohols, glycerol, dimethyl sulfoxide, acetic anhydride, paper, wood, grease and other combustible materials; fire or explosion may follow contact even at ambient temperature when the organic material dries.
- Explosive reaction with finely powdered metals, bismuth and antimony and their alloys, and with strong reducing agents and amines.
- Dehydration by concentrated sulfuric acid or phosphorus pentoxide can produce anhydrous perchloric acid, which is unstable and may explode spontaneously.
- Hot concentrated acid (above about 150 °C) is an explosion hazard with any oxidisable material; perchlorate crystals deposited in ductwork or on equipment are shock-sensitive.
- Contact with common metals liberates flammable hydrogen gas, which may form an explosive atmosphere in enclosed spaces or container headspace.

10.4 Conditions to avoid

Heat and excess heat, particularly above 150 °C; incompatible products; contact with combustible and organic material; dehydrating agents; sparks and ignition sources; confinement while heated; discoloured (yellow or brown) acid; drying of acid on organic surfaces.

10.5 Incompatible materials

Class	Examples
Organic materials and combustibles	Paper, wood, cloth, grease, oils, solvents, plastics, rubber, sawdust and other combustible material; organic absorbents
Alcohols and reactive organics	Alcohols, glycerol, dimethyl sulfoxide, acetic anhydride, amines
Reducing agents and oxidisers	Strong reducing agents; other strong oxidising agents

Class	Examples
Metals	Finely powdered metals, bismuth, antimony and their alloys; common metals (carbon steel, aluminium, zinc, copper, brass) — hydrogen evolution
Dehydrating agents	Concentrated sulfuric acid, phosphorus pentoxide and other strong dehydrating agents
Construction materials	Wooden shelving, cardboard, cork, natural rubber, unprotected concrete and limestone

10.6 Hazardous decomposition products

Hydrogen chloride gas (manufacturer); on heating, oxides of chlorine, chlorine and oxygen, which may be explosive and are irritating and toxic.

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 mist, and accidental ingestion. Causes severe burns by all routes; may be harmful if inhaled and may be harmful in contact with skin.

Endpoint	Data and conclusion
Acute toxicity — oral	LD_{50} (rat): 200 – 2,000 mg/kg bw (OECD 423; perchloric acid). Classified Acute Toxicity Category 4 (H302) by the manufacturer.
Acute toxicity — dermal	No data available. The manufacturer notes the product may be harmful in contact with skin; corrosivity governs. Not classified.
Acute toxicity — inhalation	No data available. The manufacturer notes the product causes severe burns and may be harmful if inhaled; corrosivity and respiratory irritation govern. Not separately classified.
Skin corrosion / irritation	Corrosive. Causes severe, full-thickness chemical burns. Classified Skin Corrosion Category 1A.
Serious eye damage / irritation	Causes serious, irreversible eye damage, including corneal opacification and blindness. Classified Eye Damage Category 1.
Respiratory or skin sensitisation	No data available. Not classified.
Germ cell mutagenicity	No data available. Not classified.
Carcinogenicity	Not listed by IARC, NTP, ACGIH, OSHA or Mexico as a carcinogen (perchloric acid and water). Not classified.
Reproductive toxicity	No data available. Not classified.
STOT — single exposure	Category 3 (respiratory system) per the manufacturer's classification — mist and vapour may cause respiratory irritation (H335). No further data available in the manufacturer's toxicological section.
STOT — repeated exposure	Category 2 (thyroid) per the manufacturer's classification — may cause damage to organs through prolonged or repeated exposure (H373). The perchlorate ion competitively inhibits iodide uptake by the thyroid.
Aspiration hazard	No data available. 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 thyroid. Persons with pre-existing skin disorders, eye disease, chronic respiratory disease or thyroid disease may be at increased risk from exposure. No toxicologically synergistic products are known. Endocrine disrupting properties: this product does not contain any known or suspected endocrine disruptors.

The toxicological properties have not been fully investigated. The assessment above is based on the manufacturer's data and on the corrosivity and strong oxidising nature of the product, which determine the local effects.

12 SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Endpoint	Value
Fish — acute	No data available.
Aquatic invertebrates — acute	No data available.

Endpoint	Value
Algae	No data available.
Microorganisms	No data available.

No ecotoxicity data are reported by the manufacturer. Do not empty into drains. Strongly acidic solutions harm aquatic life through pH depression; the product should not be released into the environment.

12.2 Persistence and degradability

Soluble in water. The manufacturer states that persistence is unlikely based on information available. Note, however, that the perchlorate anion is chemically stable and mobile in water and can persist in groundwater under aerobic conditions; it is degraded by perchlorate-reducing bacteria under anoxic conditions. Releases must therefore be prevented.

12.3 Bioaccumulative potential

No information available.

12.4 Mobility in soil

Will likely be mobile in the environment due to its water solubility; the perchlorate ion is highly mobile in soil and groundwater.

12.5 Results of PBT and vPvB assessment

The substance is not identified as a PBT or vPvB substance under REACH Annex XIII. No data are available to the contrary.

12.6 Other adverse effects

Germany water hazard class WGK 1 (slightly hazardous to water). Not an ozone-depleting substance. Not a persistent organic pollutant.

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 experienced in oxidising waste. Dispose of contents and container to an approved waste disposal plant. Do not discharge to sewers, drains or watercourses.
- Keep perchloric-acid waste strictly separate from all organic waste, solvents, alcohols and other combustibles, and never collect it in a container that has held organic material. Collect in clearly labelled glass or PTFE-lined containers marked OXIDIZER — PERCHLORIC ACID — NO ORGANICS. Do not allow the waste to concentrate or dry.
- Discoloured (yellow or brown) acid must be disposed of promptly through the hazardous-waste contractor and must not be heated, concentrated or stored for later use.
- Empty containers retain product residue and remain hazardous. Rinse thoroughly with water, collecting the rinsate as hazardous waste, before offering for recycling; do not cut, weld, drill or reuse. Wipers, absorbents and PPE contaminated with the acid must be rinsed with water and kept wet until disposal, as they can ignite when dry.
- 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 as an oxidiser (40 CFR 261.21(a)(4)) — EPA hazardous waste number D001 — and the corrosivity characteristic (aqueous solutions of pH ≤ 2) — D002. The reactivity characteristic D003 may also apply to contaminated or heated material. Not a P- or U-listed commercial chemical product. European waste catalogue: EWC code 06 01 06* (other acids) or 16 05 06* (laboratory chemicals consisting of or containing hazardous substances). 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 1873
UN proper shipping name	Perchloric acid with more than 50 percent but not more than 72 percent acid, by mass
Transport hazard class	Class 5.1 — Oxidizing substances
Subsidiary hazard	Class 8 — Corrosive substances
Packing group	I

Label(s) required	Class 5.1 "Oxidizer" (yellow) and Class 8 "Corrosive" (white upper half / black lower half) — 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	Glass inner packagings only, packed in outer packagings with inert absorbent. Transport upright, secured against movement, and away from foodstuffs. Segregate from organic materials, flammables, reducing agents, powdered metals, alkalis and dehydrating agents. Keep away from heat. Forbidden on passenger aircraft and passenger rail; cargo aircraft only.
Transport in bulk (MARPOL Annex II / IBC Code)	Not applicable to packaged goods; this product is not supplied in bulk by sea. Any bulk movement would require assessment under MARPOL Annex II and the IBC Code before shipment.

Transport hazard label(s) required on the package:



Class 5.1 — Oxidizer



Class 8 — Corrosive

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	Perchloric acid with more than 50 percent but not more than 72 percent acid, by mass — 5.1, UN1873, PG I
Label codes	5.1, 8
Special provisions (49 CFR 172.102)	A2, N41, T10, TP1
Packaging — exceptions	None
Packaging — non-bulk	49 CFR 173.201 — inner packagings glass only (special provision N41); outer packagings with inert absorbent
Packaging — bulk	49 CFR 173.243
Quantity limitation — passenger aircraft/rail	Forbidden
Quantity limitation — cargo aircraft only	2.5 L
Vessel stowage	Location D; other stowage provisions 66, 90
Limited quantity	Not authorised (Packing Group I). Excepted quantity E0 — not permitted.
Reportable quantity (RQ)	Not listed — perchloric acid has no CERCLA reportable quantity; the "RQ" designation is not required on the shipping paper or package.
ERG 2024 guide number	143 — Oxidizers (unstable)
Emergency response telephone	Required on the shipping paper under 49 CFR 172.604 — see Section 1.4
Placarding	OXIDIZER placard required for bulk packagings and ≥ 454 kg aggregate of Table 2 materials; Class 5.1 PG I is not a Table 1 material.

14.3 IMDG Code (sea)

UN number / class / PG	UN 1873, Class 5.1 (8), PG I
Proper shipping name	PERCHLORIC ACID with more than 50 % but not more than 72 % acid, by mass
EmS (emergency schedules)	F-H (fire) and S-Q (spillage)
Segregation group	Group 1 — Acids
Marine pollutant	No
Limited quantity	0 (none)
Excepted quantity	E0

Stowage and segregation	Stowage category D. Segregate "separated from" organic materials, flammable substances, Class 4.1 and 4.3 substances, powdered metals and alkalis. 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 1873, Class 5.1 (8), PG I
Proper shipping name	Perchloric acid
Passenger and cargo aircraft	Forbidden
Cargo aircraft only	Packing Instruction 553 — maximum net quantity 2.5 L per package
Limited quantity (passenger aircraft)	Forbidden
Excepted quantity code	E0
ERG code (ICAO)	5C
Note	Packing instruction numbers and quantity limits 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 1873, Class 5.1, PG I
Classification code	OC1 — oxidising substances, corrosive, liquid
Labels	5.1 + 8
Tunnel restriction code	(E)
Hazard identification number (Kemler)	558
Transport category / limited quantity	Transport category 1; limited quantity 0
Packing instructions	P502
Note	Verify against the ADR/RID edition in force before shipment.

14.6 Shipping documentation example

UN1873, Perchloric acid with more than 50 percent but not more than 72 percent acid, by mass, 5.1, (8), PG I — followed by the number and type of packages, total quantity, packaging authorisation, emergency response telephone number and CHEMTREC contract number. No "RQ" designation or limited-quantity marking applies.

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.)	Perchloric acid, CAS 7601-90-3, is listed on the TSCA Chemical Substance Inventory with an "active" designation. No TSCA section 12(b) export notification requirement applies. 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)	Not a flammable or combustible liquid. The product is a strong oxidiser (NFPA 400 Class 3 oxidiser at 60 – 72.5 %); storage and handling requirements for oxidisers apply. 29 CFR 1910.1450 (laboratory standard) requires a designated perchloric-acid hood where the acid is heated.

Regulation	Status
OSHA PSM (29 CFR 1910.119, App. A)	Listed highly hazardous chemical: "Perchloric acid (concentration 60 % by weight or greater)", threshold quantity 5,000 lb. APPLIES to this product (69 – 72 %) where the threshold quantity is held in a process.
CERCLA section 103 (40 CFR 302.4)	Not listed. Perchloric acid has no CERCLA reportable quantity. Releases may still be reportable under state and local requirements.
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: oxidiser, skin corrosion (Category 1A), serious eye damage (Category 1) and corrosive to metals; the manufacturer's classification also includes acute toxicity (oral) and STOT. 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)	Not designated as a hazardous substance. Not a section 307 priority pollutant or toxic pollutant.
RCRA (40 CFR 261)	Discarded unused product exhibits the ignitability (oxidiser, 40 CFR 261.21(a)(4), D001) and corrosivity (D002) characteristics; D003 (reactivity) may apply to contaminated or heated material. 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. (Perchlorate salts are chemicals of interest; the acid is not individually listed.)

15.2 United States state regulations

State list	Status
California Proposition 65	Perchloric acid is not listed under the Safe Drinking Water and Toxic Enforcement Act of 1986 (the perchlorate ion is not currently listed). No Proposition 65 warning is required for this product.
California — other	Cal/OSHA: no PEL established. The California Fire Code (NFPA 400) classifies the product as a Class 3 oxidiser; storage quantity limits apply.
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 — oxidiser, corrosive.
Pennsylvania Right-to-Know	Listed (Hazardous Substance List).
Rhode Island, Minnesota, Texas	Rhode Island: listed. Not listed: Illinois, Minnesota. Texas: no listing information in the manufacturer data; verify against the current Texas Hazard Communication list before first sale.

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. 017-006-00-4: Ox. Liq. 1, H271; Skin Corr. 1A, H314, with the concentration limits given in Section 3. Pictograms GHS03 + GHS05; Danger.
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. Regulation (EU) 2019/1148 on explosives precursors: perchloric acid is not an Annex I or Annex II substance (perchlorates at ≥ 40 % are Annex I; the acid is not listed). Supplier REACH registration number to be inserted before EU/EEA placement.
Seveso III (Directive 2012/18/EU)	Not named individually; captured under hazard category P8 (oxidising liquids, Category 1): lower tier 50 t / upper tier 200 t.

Jurisdiction	Status
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; KE-28137), PICCS (Philippines), NZIoC (New Zealand), TCSI (Taiwan) and the Indian Chemical Inventory.
Mexico	Slight risk, Grade 1 (manufacturer data). No occupational exposure limit established in NOM-010-STPS.
Germany	Water Hazard Class WGK 1 (slightly hazardous to water).

15.4 Chemical safety assessment

A chemical safety assessment has been carried out for perchloric acid under REACH by the registrant. 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 0 · Instability 3 · Special: OX	Oxidiser; strong oxidiser with corrosive health hazard (manufacturer rating)
HMIS® III	Health 3 · Flammability 0 · Physical hazard 3 · 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

- H271 — May cause fire or explosion; strong oxidizer.
- H272 — May intensify fire; oxidizer.
- H290 — May be corrosive to metals.
- H302 — Harmful if swallowed.
- H314 — Causes severe skin burns and eye damage.
- H315 — Causes skin irritation.
- H318 — Causes serious eye damage.
- H319 — Causes serious eye irritation.
- H335 — May cause respiratory irritation.
- H373 — May cause damage to organs through prolonged or repeated exposure.

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
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

Abbreviation	Meaning
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 143.
- 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; 29 CFR 1910.119 Appendix A and 29 CFR 1910.1450.
- Regulation (EC) No 1272/2008 Annex VI, Index No. 017-006-00-4; Regulation (EC) No 1907/2006 Annex II; Regulation (EU) 2019/1148.
- NFPA 400, Hazardous Materials Code; NFPA 45, Fire Protection for Laboratories Using Chemicals.
- Manufacturer safety data sheet for perchloric acid (US OSHA HCS 2024 format, revision 7, 18 December 2025) — source of the physical, toxicological and regulatory values reproduced here.
- ECHA registered substance dossier and PubChem CID 24247, perchloric 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 perchloric acid (69–72 %).
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 perchloric acid (69–72 %) 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 —

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