ChemicalBook

Chemical Safety Data Sheet MSDS / SDS

PERCHLORIC ACID

Revision Date:2025-02-01 Revision Number:1

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

Product identifier

Product name	: PERCHLORIC ACID
CBnumber	: CB4348487
CAS	: 7601-90-3
EINECS Number	: 231-512-4
Synonyms	: PERCHLORIC ACID,neoprene rubber

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

Relevant identified uses	: For R&D use only. Not for medicinal, household or other use.
Uses advised against	: none

Company Identification

Company	: Chemicalbook
Address	: Building 1, Huihuang International, Shangdi 10th Street, Haidian District, Beijing
Telephone	: 010-86108875

SECTION 2: Hazards identification

GHS Label elements, including precautionary statements

Symbol(GHS)

Signal word Danger

Precautionary statements

P405 Store locked up.

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 … for extinction.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continuerinsing.

P303+P361+P353 IF ON SKIN (or hair): Remove/Take off Immediately all contaminated clothing. Rinse SKIN with water/shower.

P283 Wear fire/flame resistant/retardant clothing.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P221 Take any precaution to avoid mixing with combustibles/…

P210 Keep away from heat/sparks/open flames/hot surfaces. — No smoking.

Hazard statements

H373 May cause damage to organs through prolonged or repeated exposure

H318 Causes serious eye damage

H314 Causes severe skin burns and eye damage

H312 Harmful in contact with skin

H303 May be harmfulif swallowed

H302 Harmful if swallowed

H290 May be corrosive to metals

H272 May intensify fire; oxidizer

H271 May cause fire or explosion; strong oxidiser

H226 Flammable liquid and vapour

SECTION 3: Composition/information on ingredients

Substance

Product name	: PERCHLORIC ACID
Synonyms	: PERCHLORIC ACID,neoprene rubber
CAS	: 7601-90-3
EC number	: 231-512-4
MF	: ClHO4
MW	: 100.46

SECTION 4: First aid measures

Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5: Firefighting measures

Extinguishing media

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable extinguishing media

High volume water jet

Special hazards arising from the substance or mixture

Chlorine

Hydrogen chloride gas

Container explosion may occur under fire conditions. Combustible.

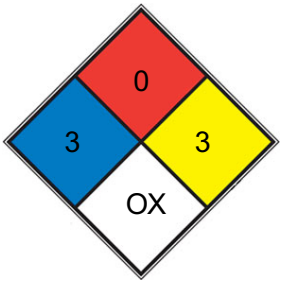
Advice for firefighters

No data available

Further information

No data available

NFPA 704



■	HEALTH	3	Short exposure could cause serious temporary or moderate residual injury (e.g. liquid hydrogen, sulfuric acid, calcium hypochlorite, hexafluorosilicic acid)
■	FIRE	0	Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand. Materials that will not burn in air when exposed to a temperature of 820 °C (1,500 °F) for a period of 5 minutes.(e.g. Carbon tetrachloride)
■	REACT	3	Capable of detonation or explosive decomposition but requires a strong initiating source, must be heated under confinement before initiation, reacts explosively with water, or will detonate if severely shocked (e.g. ammonium nitrate, cesium, hydrogen peroxide)
□	SPEC. HAZ.	OX	

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

For personal protection see section 8.

Environmental precautions

No data available

Methods and materials for containment and cleaning up

No data available

Reference to other sections

For disposal see section 13.

SECTION 7: Handling and storage

Precautions for safe handling

For precautions see section 2.2.

Conditions for safe storage, including any incompatibilities

No data available

Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

---

SECTION 8: Exposure controls/personal protection

control parameter

Hazard composition and occupational exposure limits

Does not contain substances with occupational exposure limits.

Exposure controls

Personal protective equipment

Skin protection

required

Control of environmental exposure

Prevent product from entering drains.

SECTION 9: Physical and chemical properties

Information on basic physicochemical properties

Appearance	colorless liquid, clear
Odour	No data available
Odour Threshold	No data available
pH	0.1 (H_2O, 20°C)
Melting point/freezing point	-18 °C ca.
Initial boiling point and boiling range	203 °C at 1.013 hPa
Flash point	104 °F
Evaporation rate	No data available
Flammability (solid, gas)	No data available
Upper/lower flammability or explosive limits	No data available
Vapour pressure	9,1 hPa at 25 °C
Vapour density	~2.1 (vs air)

Relative density	1,664 g/cm3 at 25 °C
Water solubility	completely miscible
Partition coefficient: n-octanol/water	No data available
Autoignition temperature	No data available
Decomposition temperature	No data available
Viscosity	Viscosity, kinematic: No data available Viscosity, dynamic: No data available
Explosive properties	Not explosive
Oxidizing properties	The substance or mixture is classified as oxidizing with the category 1.

Other safety information

No data available

SECTION 10: Stability and reactivity

Reactivity

No data available

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

Amines and alcohols cause exothermic reactions.

Conditions to avoid

No data available

Incompatible materials

Strong bases, Strong acids, Amines, Phosphorus halides, Alcohols, Organic materials, Powdered metals, Strong reducing agents

Hazardous decomposition products

In the event of fire: see section 5

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity

LD50 Oral - Rat - < 2.000 mg/kg (OECD Test Guideline 423)

Skin corrosion/irritation

Extremely corrosive and destructive to tissue.

Serious eye damage/eye irritation

Corrosive

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

Ames test

Salmonella typhimurium Result: negative

Carcinogenicity

IARC: No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

May cause damage to organs through prolonged or repeated exposure. - Thyroid

Aspiration hazard

No data available

Toxicity

LD50 oral (rat) 1100 mg/kg

LD50 oral (dog) 400 mg/kg

SECTION 12: Ecological information

Toxicity

Mixture

Toxicity to daphnia and other aquatic invertebrates

Immobilization EC50 - Daphnia magna (Water flea) - > 100 mg/l - 48 h

(OECD Test Guideline 202)

Persistence and degradability

No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Results of PBT and vPvB assessment

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

Other adverse effects

Do not empty into drains. Neutralization will not reduce ecotoxic effects.

Components Perchloric acid

Toxicity to fish flow-through test EC50 - Lepomis macrochirus (Bluegill sunfish)

- 1.470 mg/l - 96 h (US-EPA)

Remarks: (in analogy to similar products)

The value is given in analogy to the following substances: Sodium perchlorate monohydrateThe value is given in analogy to the following substances: Sodium perchlorate

Toxicity to daphnia and other aquatic invertebrates

static test EC50 - Daphnia magna (Water flea) - > 100 mg/l - 48 h

(OECD Test Guideline 202)

Toxicity to algae static test ErC50 - Pseudokirchneriella subcapitata (green algae) - > 435,7 mg/l - 72 h

(OECD Test Guideline 201)

Remarks: (in analogy to similar products)

The value is given in analogy to the following substances: Sodium perchlorate

Toxicity to bacteria static test EC50 - activated sludge - > 1.000 mg/l - 3 h (ISO 8192)

Remarks: (in analogy to similar products)

The value is given in analogy to the following substances: Sodium perchlorate

---

SECTION 13: Disposal considerations

Waste treatment methods

Incompatibilities

Oxidizable organic compounds including alcohols, ketones, aldehydes, ethers, and dialkyl sulfoxides can react violently with concentrated perchloric acid. All perchlorates are potentially hazardous when in contact with reducing agents.

Product

No data available

Waste Disposal

Excess perchloric acid and waste material containing this substance should be placed in an appropriate container, clearly labeled, and handled according to your institution's waste disposal guidelines.

SECTION 14: Transport information

UN number

ADR/RID: 1873 IMDG: 1873 IATA: 1873

14.2 UN proper shipping name ADR/RID: PERCHLORIC ACID IMDG: PERCHLORIC ACID

IATA: Perchloric acid

Passenger Aircraft: Not permitted for transport

14.3 Transport hazard class(es)

ADR/RID: 5.1 (8) IMDG: 5.1 (8) IATA: 5.1 (8)

Packaging group

14.4

ADR/RID: I IMDG: I IATA: I

Environmental hazards

14.5

ADR/RID: no IMDG Marine pollutant: no IATA: no

Special precautions for user

14.6

No data available

SECTION 15: Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

Regulations on the Safety Management of Hazardous Chemicals

China Catalog of Hazardous chemicals 2015:Listed. website: https://www.mem.gov.cn/

Measures for Environmental Management of New Chemical Substances

Vietnam National Chemical Inventory:Listed. website: https://chemicaldata.gov.vn/

United States Toxic Substances Control Act (TSCA) Inventory:Listed. website: https://www.epa.gov/

Philippines Inventory of Chemicals and Chemical Substances (PICCS):Listed. website: https://emb.gov.ph/

New Zealand Inventory of Chemicals (NZIoC):Listed. website: https://www.epa.govt.nz/

Korea Existing Chemicals List (KECL):Listed. website: http://ncis.nier.go.kr

European Inventory of Existing Commercial Chemical Substances (EINECS):Listed. website: https://echa.europa.eu/

EC Inventory:Listed.

Chinese Chemical Inventory of Existing Chemical Substances (China IECSC):Listed. website: https://www.mee.gov.cn/

SECTION 16: Other information

Abbreviations and acronyms

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

CAS: Chemical Abstracts Service

EC50: Effective Concentration 50%

IATA: International Air Transportation Association

IMDG: International Maritime Dangerous Goods

LC50: Lethal Concentration 50%

LD50: Lethal Dose 50%

RID: Regulation concerning the International Carriage of Dangerous Goods by Rail

STEL: Short term exposure limit

TWA: Time Weighted Average

References

【1】CAMEO Chemicals, website: http://cameochemicals.noaa.gov/search/simple

【2】ChemIDplus, website: http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp

【3】ECHA - European Chemicals Agency, website: https://echa.europa.eu/

【4】eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website:

http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en

【5】ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: http://www.phmsa.dot.gov/hazmat/library/erg

【6】Germany GESTIS-database on hazard substance, website: http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp

【7】HSDB - Hazardous Substances Data Bank, website: https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm

【8】IARC - International Agency for Research on Cancer, website: http://www.iarc.fr/

【9】IPCS - The International Chemical Safety Cards (ICSC), website: http://www.ilo.org/dyn/icsc/showcard.home

【10】Sigma-Aldrich, website: https://www.sigmaaldrich.com/

Other Information

DO NOT use perchloric acid in a hood designed for other purposes.The symptoms of lung oedema often do not become manifest until a few hours have passed and they are aggravated by physical effort. Rest and medical observation are therefore essential.Immediate administration of an appropriate inhalation therapy by a doctor, or by an authorized person, should be considered.Rinse contaminated clothing with plenty of water because of fire hazard.NEVER pour water into this substance; when dissolving or diluting always add it slowly to the water.