

SAFETY DATA SHEET

according to 1907/2006/EC, Article 3

Revision date: 30/03 /2020

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

1.1 Product identifiers

Product name	Perchloric acid solution [0.1 M HClO ₄ (0.1N)]
Product Number	PSR40502
Brand	PureSynth research chemicals
CAS No.	7601-90-3

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

Identified uses : Laboratory chemicals

1.3 Details of the supplier of the safety data sheet

Company	PureSynth Research Chemicals Pvt. Ltd.
	A-27, A.P.I.E, Hyderabad, Telangana-500037

1.4 Emergency telephone number

Worldwide Helpline No.: 1800-120-1234-34

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

Oxidizing liquids (Category 1), H271
Corrosive to Metals (Category 1), H290
Acute toxicity, Oral (Category 4), H302
Skin corrosion (Sub-category 1A), H314
Serious eye damage (Category 1), H318
Specific target organ toxicity - repeated exposure
(Category 2), Thyroid, H373

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

2.2 Label elements

Labelling according Regulation (EC) No 1272/2008

Pictogram



Signal word Danger

Hazard statement(s)

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.
H373	May cause damage to organs (Thyroid) through prolonged or repeated exposure.

Precautionary statement(s)

P210	P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P312	IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P314	Get medical advice/ attention if you feel unwell.
Supplemental Hazard Statements	none

2.3 Other hazards

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

SECTION 3: Composition / information on ingredients

3.1 Substances

Common names & Synonyms	Mol. formula	CAS number
-	-	7601-90-3
Component	Classification	Concentration
Perchloric acid	Ox. Liq. 1; Met. Corr. 1; Acute Tox. 4; Skin Corr. 1A; Eye Dam. 1; STOT RE 2; H271, H290, H302, H314, H318, H373 Concentration limits: ≥ 50 %: Skin Corr. 1A, H314; 10 - < 50 %: Skin Corr. 1B, H314; 1 - < 10 %: Skin Irrit. 2, H315; 1 - < 10 %: Eye Irrit. 2, H319; > 50 %: Ox. Liq. 1, H271; ≤ 50 %: Ox. Liq. 2, H272; 1 - 50 %: Ox. Liq. 2, H272;	≥ 70 - < 90 %

SECTION 4: First aid measures

Description of first aid measures

General advice	Consult a physician. Show this safety data sheet to the doctor in attendance.
If inhaled	After inhalation: fresh air. Call in physician.
In case of skin contact	In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Consult a physician.
In case of eye contact	After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.
If swallowed	After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

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	Water Foam Carbon dioxide (CO ₂) Dry powder
Suitable extinguishing media	Chlorine
Special hazards arising from the substance or mixture	Hydrogen chloride gas Combustible. Development of hazardous combustion gases or vapours possible in the event of fire. Has a fire-promoting effect due to release of oxygen.
Advice for firefighters	Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.
Further information	Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures	Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8
Environmental precautions	Do not let product enter drains. Risk of explosion.
Methods and materials for containment and cleaning up	Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.
Reference to other sections	For disposal see section 13.

SECTION 7: Handling and storage

Precautions for safe handling	Work under hood. Do not inhale substance/mixture. Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance. For precautions see section 2.2.
Conditions for safe storage, including any incompatibilities	No metal containers. Tightly closed. Separately or together with other oxidising substances only and away from sources of ignition and heat. Because of their oxidation potential these products can raise the burning rate of combustible substances substantially or ignite combustible substances on contact with them. Storage class (TRGS 510): 5.1A: Strongly oxidizing hazardous materials
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 parameters	No data available
Exposure controls	
Appropriate engineering controls	No data available
Personal protective equipment:	
Eye / face protection	Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses
Skin protection	Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.
Body Protection	Protective clothing
Respiratory protection	Required when dusts are generated. The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.
Control of environmental exposure	Do not let product enter drains. Risk of explosion.

SECTION 9: Physical and chemical properties

Appearance	Form: liquid, clear Colour: colorless
Odour	No data available
pH - Value	No data available
Density	1.664 g/mL at 25 °C
Boiling Point	ca.203 °C at 1.013 hPa
Melting Point	-18 °C
Solubility in water	Completely miscible
Flash point	No data available
Vapour pressure	9.1 hPa at 25 °C
Auto -ignition temperature	No data available
Vapour density	No data available
Flammability (solid, gas)	No data available
Evaporation rate	No data available
Partition coefficient: n- octanol / water	No data available
Viscosity	No data available
Explosive properties	No data available
Upper / lower flammability or explosive limits	No data available
Oxidizing properties	No data available
Other safety information:	No data available

SECTION 10: Stability and reactivity

Reactivity	No data available
Chemical stability	The product is chemically stable under standard ambient conditions (room temperature). Stable under recommended storage conditions.
Possibility of hazardous reactions	Amines and alcohols cause exothermic reactions.
Condition to avoid	No information available
Incompatible materials	Strong bases, Strong acids, Amines, Phosphorus halides, Alcohols, Organic materials, Powdered metals, Strong reducing agents Strong oxidizing agents Metals
Hazardous decomposition products	In the event of fire: see section 5

SECTION 11: Toxicological information

Acute toxicity	LD50 Oral - Rat - < 2.000 mg/kg (OECD Test Guideline 423) Symptoms: mucosal irritations, Cough, Shortness of breath, Possible damages:, damage of respiratory tract Dermal: No data available
Skin corrosion/irritation	Mixture causes severe burns.
Serious eye damage/eye irritation	Mixture causes serious eye damage. Risk of blindness!
Respiratory or skin sensitization	No data available Test Type: Ames test Test system: Salmonella typhimurium
Germ cell mutagenicity	Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471 Result: negative
Carcinogenicity	No data available
Reproductive toxicity	No data available
Specific target organ toxicity - single exposure	No data available
Specific target organ toxicity - repeated exposure Aspiration hazard	Mixture may cause damage to organs through prolonged or repeated exposure. - Thyroid
Additional Information	
Endocrine disrupting properties	The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher. burning sensation, Cough, wheezing, laryngitis, Shortness of breath, spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. Other dangerous properties cannot be excluded. Handle in accordance with good industrial hygiene and safety practice.
Components	
Perchloric acid	
Acute toxicity	LD50 Oral - Rat - 1.100 mg/kg Remarks: Behavioural: Excitement. Lungs, Thorax, or Respiration: Dyspnea. Nutritional and Gross Metabolic: Changes in: Body temperature decrease. (RTECS) Inhalation: No data available Dermal: No data available

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	Test Type: Ames test Test system: Salmonella typhimurium Result: negative
Carcinogenicity	No data available
Reproductive toxicity	No data available
Specific target organ toxicity - single exposure	No data available
Specific target organ toxicity - repeated exposure	May cause damage to organs through prolonged or repeated exposure. - Thyroid
Aspiration hazard	No data available

SECTION 12: Ecological information

Toxicity

Mixture

Toxicity to fish	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. The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher
Endocrine disrupting properties	Do not empty into drains. Neutralization will not reduce ecotoxic effects.
Other adverse 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 monohydrate static test EC50 - Daphnia magna (Water flea) - > 100 mg/l - 48 h (OECD Test Guideline 202) static test ErC50 - Pseudokirchneriella subcapitata (green algae) - > 435,7 mg/l - 72 h (OECD Test Guideline 201)
Toxicity to daphnia and other aquatic invertebrates	Remarks: (in analogy to similar products) The value is given in analogy to the following substances: Sodium perchlorate static test EC50 - activated sludge - > 1.000 mg/l - 3 h (ISO 8192)
Toxicity to algae	Remarks: (in analogy to similar products) The value is given in analogy to the following substances: Sodium perchlorate
Toxicity to bacteria	

SECTION 13: Disposal considerations

Waste treatment methods	Offer surplus and non-recyclable solutions to a licensed disposal company. Waste material must be disposed of in accordance with the Directive on waste 2008/98/EC as well as other national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.
Products	
Contaminated packaging	Dispose of as unused product.

SECTION 14: Transport information

	UN no.	UN proper shipping name	Hazard Class(es)	Packaging group	Marine Pollutant
ADR / RID	1873	PERCHLORIC ACID	5.1 (8)	I	No
IMDG	1873	PERCHLORIC ACID	51 (8)	I	No
IATA	1873	Perchloric acid	5.1 (8)	I	No

SECTION 15: Regulatory information

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

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

Authorisations and/or restrictions on use

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII)

: OXIDISING LIQUIDS AND SOLIDS

Other regulations

Observe work restrictions regarding maternity protection in accordance to Dir 92/85/EEC or stricter national regulations where applicable.

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

Chemical safety assessment

For this product a chemical safety assessment was not carried out.

SECTION 16: Other information

The information in this SDS is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. The user must be determined suitability of this information for his application.