



MATERIAL SAFETY DATA SHEET

Version :02

PRODUCT NAME: PERCHLORIC ACID

CAS Number: 7601-90-3

1. IDENTIFICATION:

Product Code : 90201, 90202, 90203, 90738, 91627, 92622, 97135

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2. HAZARDS IDENTIFICATION:**Hazard classification****Physical hazards**

Corrosive to Metals : Category 1

Oxidizing liquids : Category 1

Health hazards

Acute toxicity, Oral : Category 4

Skin corrosion : Sub-category 1A

Serious eye damage : Category 1

**Specific target organ
toxicity - repeated
exposure, Thyroid** : Category 2

Labels elements :

Hazard symbol :



Signal word : Danger

May cause fire or explosion; strong oxidizer.

May be corrosive to metals.

Hazard statement : Harmful if swallowed.

Causes severe skin burns and eye damage.

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

Precautionary statement

Prevention : Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

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

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



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Keep container tightly closed. Ground/ bond container and receiving equipment.

Response	: IF exposed or concerned: Get medical advice/ attention. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Storage	: Store in a dry & well-ventilated place. Keep container tightly closed. Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Disposal	: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.
Other hazards which do not result in GHS classification	: 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.

3. COMPOSITION/ INFORMATION ON INGREDIENTS:

Ingredient	CAS Number	Percent	Hazardous
Perchloric Acid	7601-90-3	60.0% to 73.0%	Yes

4. FIRST AID MEASURES:

General information	: Get medical advice/attention if you feel unwell. Show this safety data sheet to the doctor in attendance.
Ingestion	: Call a physician or poison control center immediately. Rinse mouth. Do NOT induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
Inhalation	: Move to fresh air. Call a physician or poison control center immediately. If breathing stops, provide artificial respiration. If breathing is difficult, give oxygen.
Skin contact	: Get medical attention if symptoms persist.
Eye contact	: Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention.
Most important symptoms/effects, acute and delayed	: Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention.
Indication of immediate medical attention and special treatment needed	: The most important known symptoms and effects are described in the labelling.
	: No data available.



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5. FIRE FIGHTING MEASURES:**General information****Suitable (and unsuitable) extinguishing media**

Suitable extinguishing media	: Water spray, alcohol-resistant foam, dry chemical or carbon dioxide
Unsuitable extinguishing media	: High volume water jet
Specific hazards arising from the chemical	: Chlorine, Hydrogen chloride gas, Container explosion may occur under fire conditions. Combustible.
Special protective equipment and precautions for firefighters	

Special firefighting procedures	: Use water spray to keep fire-exposed containers cool. Water may be ineffective in fighting the fire. Fight fire from a protected location. Move containers from fire area if you can do so without risk.
Special protective equipment for fire-fighters	: Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

6. ACCIDENTAL RELEASE MEASURES:

Personal precautions, protective equipment and emergency procedures	: ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Avoid breathing mists or vapors. Keep upwind. Ventilate closed spaces before entering them. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Keep unauthorized personnel away.
Methods and material for containment and cleaning up	: Eliminate all ignition sources if safe to do so. Use only non-sparking tools. Take precautionary measures against static discharges. Stop leak if possible without any risk. Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Clean surface thoroughly to remove residual contamination.
Notification Procedures	: Prevent entry into waterways, sewer, basements or confined areas. Inform authorities if large amounts are involved.
Environmental precautions	: Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

7. HANDLING AND STORAGE:

Precautions for safe handling	: Do not handle until all safety precautions have been read and understood. DO NOT handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Take precautionary measures against static discharges. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting/equipment. Use only non-sparking tools. Wear protective gloves/protective clothing/eye protection/ face protection. Avoid contact with eyes, skin, and clothing. Do not breathe mist or vapor. Use only with adequate ventilation. Wash hands thoroughly after handling.
Conditions for safe storage, including any incompatibilities	: Keep away from food, drink and animal feeding stuffs. Keep container tightly closed in a dry, well-ventilated place.



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8. EXPOSURE CONTROLS PERSONAL PROTECTION:**Control parameters****Appropriate engineering****controls** : No data available**Individual protection measures, such as personal protective equipment**

General information : Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. An eye wash and safety shower must be available in the immediate work area. Use explosion-proof ventilation equipment.

Eye/face protection : Wear safety glasses with side shields (or goggles).

Hand protection : Chemical resistant gloves.

Other : Wear suitable protective clothing.

Respiratory protection : In case of inadequate ventilation use suitable respirator.

Hygiene measures : Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Provide eyewash station and safety shower. Avoid contact with eyes, skin, and clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES:

Appearance : Clear, colorless liquid

Odor : Pungent

Solubility : Miscible in water.

Formula : HClO_4

Molecular Weight : 100.46 g/mol

Density : About 1.54 to 1.67 g/cm³ at 25°C

pH : No data available.

% Volatiles by volume @ 21°C (70°F) : No data available.

Boiling Point : 203°C

Melting Point : -18°C

Flash Point : No data available

Vapor Density (Air=1) : No data available

Vapor Pressure (mm Hg) : 9.1 hPa @ 25°C



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Evaporation Rate (BuAc=1) : No data available.

10. STABILITY AND REACTIVITY:

Reactivity	: No data available
Chemical stability	: Material is stable under ambient 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

11. TOXICOLOGICAL INFORMATION:

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral Product	: LD 50 (Rat): - < 2.000 mg/kg
Dermal Product	: No data available
Inhalation Product	: No data available.
Repeated dose toxicity Product	: No data available.
Skin corrosion/irritation Product	: Extremely corrosive and destructive to tissue.
Serious eye damage/eye irritation Product	: Eye damage.
Respiratory or skin sensitization Product	: No data available.
Carcinogenicity Product	: No data available
IARC Monographs on the Evaluation of Carcinogenic Risks to Humans	: No data available
US. National Toxicology Program (NTP) Report on Carcinogens	: No data available
US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)	: No data available
Germ cell mutagenicity	
In vitro Product	: No data available.



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Reproductive toxicity	: No data available
Product	
Specific target organ	
toxicity - single exposure	: No data available
Product	
Specific target organ	
toxicity - repeated	: May cause damage to organs through prolonged or repeated exposure - Thyroid
exposure Product	
Aspiration hazard Product	: No data available
Other effects	: No data available

12. ECOLOGICAL INFORMATION:

Ecotoxicity

Acute hazards to the aquatic environment

Mixture

Toxicity to daphnia : EC 50 Daphnia magna (Water flea) 48 h): > 100 mg/l .

Aquatic invertebrates : No data available.

Product

Chronic hazards to the aquatic environment

Fish Product : No data available.

Aquatic invertebrates : No data available.

Product

Toxicity to Aquatic Plants : No data available.

Product:

Persistence and degradability

Biodegradation Product : No data available.

BOD/COD ratio Product : No data available.

Bioaccumulative potential

Bioconcentration factor : No data available on bioaccumulation.

(BCF) Product

Partition coefficient n-octanol / water (log Kow) : No data available.

Product

Mobility in soil : No data available.

Other adverse effects : Do not empty into drains. Neutralization will not reduce ecotoxic effects.

Components

Toxicity to fish : Flow-through test EC50 - Lepomis macrochirus (Bluegill sunfish) - 1.470 mg/l - 96 h



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Toxicity to daphnia and other aquatic invertebrates	: Static test EC50 - Daphnia magna (Water flea) - > 100 mg/l - 48 h
Toxicity to algae	: Static test ErC50 - Pseudokirchneriella subcapitata (green algae) - > 435,7 mg/l - 72 h
Toxicity to bacteria	: Static test EC50 - activated sludge - > 1.000 mg/l - 3 h
Toxicity to fish(Chronic toxicity)	: Semi-static test NOEC - Danio rerio (zebra fish) - 10 mg/l - 12 Weeks

13. DISPOSAL CONSIDERATION:

Disposal instructions	: Discharge, treatment, or disposal may be subject to national, state, or local laws. Disposal recommendations are based on uncontaminated material.
Contaminated packaging	: Since emptied containers retain product residue, follow label warnings even after container is emptied.

14. TRANSPORT INFORMATION:

	UN No.	UN proper shipping name	Hazard Class(es)	Packaging group	Marine Pollutant
DOT	UN 1873	Perchloric Acid	5.1	I	No
IMDG	UN 1873	Perchloric Acid	5.1	I	No
IATA	UN 1873	Perchloric Acid	5.1	I	No

15. REGULATORY INFORMATION:

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.
Safety, health and environmental regulations/legislation specific for the substance or mixture
No Data Available.

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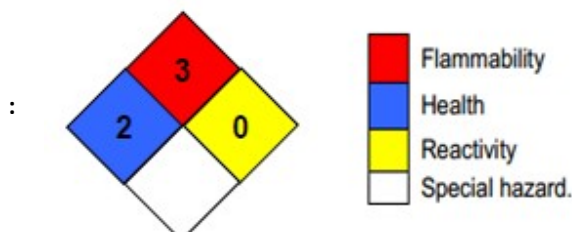
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16. OTHER INFORMATION:

NFPA Hazard ID



Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe

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