



SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Revision Date 01/27/2015

Version 1.3

SECTION 1. Identification

Product identifier

Product number	100514
Product name	Perchloric acid 70% for analysis (max. 0.0000005% Hg) EMSURE® ACS,ISO,Reag. Ph Eur

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

Identified uses	Reagent for analysis, Chemical production
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Details of the supplier of the safety data sheet

Company	EMD Millipore Corporation 290 Concord Road, Billerica, MA 01821, United States of America General Inquiries: +1-978-715-4321 Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5)
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Emergency telephone	800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week
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SECTION 2. Hazards identification

GHS Classification

Oxidizing liquid, Category 1, H271
Corrosive to Metals, Category 1, H290
Skin corrosion, Category 1A, H314
Serious eye damage, Category 1, H318

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

GHS-Labeling

Hazard pictograms



Signal Word

Danger

Hazard Statements

H271 May cause fire or explosion; strong oxidizer.
H290 May be corrosive to metals.
H314 Causes severe skin burns and eye damage.

Precautionary Statements

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Version 1.3

P210 Keep away from heat.
P220 Keep/Store away from clothing/ combustible materials.
P221 Take any precaution to avoid mixing with combustibles.
P234 Keep only in original container.
P264 Wash skin thoroughly after handling.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P283 Wear fire/ flame resistant/ retardant clothing.
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing.
Rinse skin with water/ shower.
P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position 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.
P306 + P360 IF ON CLOTHING: rinse immediately contaminated clothing and skin with plenty of water before removing clothes.
P310 Immediately call a POISON CENTER or doctor/ physician.
P321 Specific treatment (see supplemental first aid instructions on this label).
P363 Wash contaminated clothing before reuse.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
P371 + P380 + P375 In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.
P390 Absorb spillage to prevent material damage.
P405 Store locked up.
P406 Store in corrosive resistant stainless steel container with a resistant inliner.
P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. Composition/information on ingredients

Chemical nature Aqueous solution of inorganic compounds.

Hazardous ingredients

Chemical Name (Concentration)

CAS-No.

Perchloric acid ($\geq 70\%$ - $< 90\%$)

7601-90-3

Exact percentages are being withheld as a trade secret.

SECTION 4. First aid measures

Description of first-aid measures

General advice

First aider needs to protect himself.

Inhalation

After inhalation: fresh air. Call in physician.

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Skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician immediately.

Eye contact

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist.

Ingestion

After swallowing: make victim drink water (two glasses at most), avoid vomiting (risk of perforation!). Call a physician immediately. Do not attempt to neutralize.

Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed

Irritation and corrosion, Cough, Shortness of breath, cardiac arrest, Risk of blindness!

Indication of any immediate medical attention and special treatment needed

No information available.

SECTION 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

Special hazards arising from the substance or mixture

Not combustible.

Has a fire-promoting effect due to release of oxygen.

Explosive decomposition possible on heating.

Ambient fire may liberate hazardous vapors.

Fire may cause evolution of:

Hydrogen chloride gas

Advice for firefighters

Special protective equipment for fire-fighters

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: Avoid substance contact. Do not breathe vapors, aerosols. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders: Protective equipment see section 8.

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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 and neutralizing material (e.g. Chemizorb® H⁺, Art. No. 101595).

Dispose of properly. Clean up affected area.

SECTION 7. Handling and storage

Precautions for safe handling

Observe label precautions.

Keep all containers, equipment and working place clean. Explosive perchlorates may develop.

Carefully avoid drying of perchloric acid solution at inaccessible places (e.g. cracks in tiles and jointings).

Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers

No metal or light-weight-metal containers.

Tightly closed. Separately or together with other oxidizing 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.

Store at +5°C to +30°C (+41°F to +86°F).

SECTION 8. Exposure controls/personal protection

Exposure limit(s)

Contains no substances with occupational exposure limit values.

Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

Individual protection measures

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled. The chemical resistance of the protective equipment should be inquired at the respective supplier.

Hygiene measures

Immediately change contaminated clothing. Apply skin- protective barrier cream. Wash hands and face after working with substance.

Eye/face protection

Tightly fitting safety goggles

Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Other protective equipment:

Acid-resistant protective clothing.

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Version 1.3

Respiratory protection

required when vapors/aerosols are generated.

Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

SECTION 9. Physical and chemical properties

Physical state	liquid
Color	colorless
Odor	odorless
Odor Threshold	Not applicable
pH	at 68 °F (20 °C) strongly acid
Melting point	-18 °C
Boiling point/boiling range	389.7 °F (198.7 °C) at 1,013 hPa
Flash point	Not applicable
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	No information available.
Upper explosion limit	No information available.
Vapor pressure	No information available.
Relative vapor density	No information available.
Density	1.68 g/cm ³ at 68 °F (20 °C)
Relative density	No information available.
Water solubility	at 68 °F (20 °C) soluble
Partition coefficient: n-octanol/water	No information available.
Autoignition temperature	No information available.

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Decomposition temperature	No information available.
Viscosity, dynamic	No information available.
Explosive properties	Not classified as explosive.
Oxidizing properties	The substance or mixture is classified as oxidizing with the category 1.
Corrosion	May be corrosive to metals.

SECTION 10. Stability and reactivity

Reactivity

Explosive

Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

Possibility of hazardous reactions

Risk of explosion with:

semimetals, Antimony oxide, Metals, Hydrogen, Impurities, organic combustible substances, acetic acid, Halogenated hydrocarbon, Hydrogen halides, Fluorine, Ether, sulfoxides, metallic oxides, Alcohols, acetonitrile, Lead oxides, Hydrogen chloride gas, chromium(VI) oxide, dimethyl sulfoxide, Iron, ferric oxide, Acetic anhydride, ethanol, glycerol, Methanol, dichloromethane, phenol, phosphine, Oxides of phosphorus, pyridine, Reducing agents, sulfuric acid, Sulfur trioxide, Halogenated compounds, iron/iron-containing compounds, Mild steel, carbon

Nitric acid, with, Organic Substances

Acetylene, with, formaldehyde

acetic acid, with, Acetic anhydride

sulfuric acid, with, Organic Substances

Exothermic reaction with:

Ketones, phosphides, bases

Risk of ignition or formation of inflammable gases or vapors with:

anilines, with, formaldehyde

hydrogen iodide

Conditions to avoid

no information available

Incompatible materials

rubber, Light metals, Metals, fats

Hazardous decomposition products

in the event of fire: See section 5.

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SECTION 11. Toxicological information

Information on toxicological effects

Likely route of exposure

Eye contact, Skin contact

Acute oral toxicity

Symptoms: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the esophagus and the stomach.

Acute inhalation toxicity

Symptoms: mucosal irritations, Cough, Shortness of breath, Possible damages:, damage of respiratory tract, Lung edema

Skin irritation

Mixture causes severe burns.

Eye irritation

Mixture causes serious eye damage. Risk of blindness!

Specific target organ systemic toxicity - single exposure

The substance or mixture is not classified as specific target organ toxicant, single exposure.

Specific target organ systemic toxicity - repeated exposure

The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Aspiration hazard

Regarding the available data the classification criteria are not fulfilled.

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.
OSHA	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
NTP	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
ACGIH	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

Further information

After uptake:

cardiac arrest

Handle in accordance with good industrial hygiene and safety practice.

Ingredients

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Perchloric acid

No information available.

SECTION 12. Ecological information

Ecotoxicity

No information available.

Persistence and degradability

No information available.

Bioaccumulative potential

No information available.

Mobility in soil

No information available.

Additional ecological information

Biological effects:

Forms toxic and corrosive mixtures with water even if diluted. Harmful effect due to pH shift.

Discharge into the environment must be avoided.

Ingredients

Perchloric acid

No information available.

SECTION 13. Disposal considerations

The information presented only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

SECTION 14. Transport information

Land transport (DOT)

UN number	UN 1873
Proper shipping name	PERCHLORIC ACID
Class	5.1 (8)
Packing group	I
Environmentally hazardous	--

Air transport (IATA)

UN number	UN 1873
Proper shipping name	PERCHLORIC ACID
Class	5.1 (8)
Packing group	I
Environmentally hazardous	--

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Special precautions for user	yes
IATA (Passenger)	Not permitted for transport
Sea transport (IMDG)	
UN number	UN 1873
Proper shipping name	PERCHLORIC ACID MORE THAN 50% BUT NOT MORE THAN 72%
Class	5.1 (8)
Packing group	I
Environmentally hazardous	--
Special precautions for user	yes
EmS	F-A S-Q

SECTION 15. Regulatory information

United States of America

SARA 313

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 302

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

DEA List I

Not listed

DEA List II

Not listed

US State Regulations

Massachusetts Right To Know

Ingredients

Perchloric acid

Pennsylvania Right To Know

Ingredients

Perchloric acid

New Jersey Right To Know

Ingredients

Perchloric acid

California Prop 65 Components

This product does not contain any chemicals known to the State of California to cause cancer,

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birth, or any other reproductive defects.

Notification status

TSCA:	All components of the product are listed in the TSCA-inventory.
DSL:	All components of this product are on the Canadian DSL.
KOREA:	Not in compliance with the inventory

SECTION 16. Other information

Training advice

Provide adequate information, instruction and training for operators.

Labeling

Hazard pictograms



Signal Word

Danger

Hazard Statements

H271 May cause fire or explosion; strong oxidizer.

H290 May be corrosive to metals.

H314 Causes severe skin burns and eye damage.

Precautionary Statements

Prevention

P210 Keep away from heat.

P221 Take any precaution to avoid mixing with combustibles, heavy-metal compounds, acids and alkalis.

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

Response

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

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

P308 + P310 IF exposed or concerned: immediately call a POISON CENTER or doctor/ physician.

Full text of H-Statements referred to under sections 2 and 3.

H271	May cause fire or explosion; strong oxidizer.
H290	May be corrosive to metals.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.

Key or legend to abbreviations and acronyms used in the safety data sheet

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Used abbreviations and acronyms can be looked up at www.wikipedia.org.

Revision Date 01/27/2015

The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to appropriate safety precautions. It does not represent a warranty of any product properties and we assume no liability for any loss or injury which may result from the use of this information. Users should conduct their own investigations to determine the suitability of the information.

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