

Perchloric acid**12415-1L**

Version 1.4

Revision Date 04/20/2022

Print Date 05/11/2023

SECTION 1. IDENTIFICATION

Product name : Perchloric acid

Number : 000000016962

Product Use Description : Laboratory chemicals, Industrial use

Manufacturer or supplier's details : Honeywell International Inc.
1953 South Harvey Street
Muskegon, MI 49442

For more information call : 1-800-368-0050
+1-231-726-3171(Monday-Friday, 9:00am-5:00pm)

In case of emergency call : **Medical: 1-800-498-5701 or +1-303-389-1414**
: **Transportation (CHEMTREC): 1-800-424-9300 or**
: **+1-703-527-3887**
:
: (24 hours/day, 7 days/week)

SECTION 2. HAZARDS IDENTIFICATION**Emergency Overview**

Form : liquid

Color : colourless

Odor : odourless

Classification of the substance or mixture

Classification of the substance or mixture : Oxidizing liquids, Category 1
Corrosive to metals, Category 1
Acute toxicity, Category 4, Oral
Skin corrosion, Category 1A
Serious eye damage, Category 1
Specific target organ toxicity - repeated exposure, Category 2,
Thyroid

Perchloric acid**12415-1L**

Version 1.4

Revision Date 04/20/2022

Print Date 05/11/2023

GHS Label elements, including precautionary statements

Symbol(s)

:



Signal word

: Danger

Hazard statements

: May cause fire or explosion; strong oxidizer.
May be corrosive to metals.
Harmful if swallowed.
Causes severe skin burns and eye damage.
May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

: **Prevention:**
Keep away from heat.
Keep/ Store away from clothing/ combustible materials.
Take any precaution to avoid mixing with combustibles.
Keep only in original container.
Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
Wash skin thoroughly after handling.
Do not eat, drink or smoke when using this product.
Wear protective gloves/protective clothing/eye protection/face protection.
Wear fire/ flame resistant/ retardant clothing.

Response:

IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell.

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

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

IF ON CLOTHING: rinse immediately contaminated clothing and skin with plenty of water before removing clothes.

Immediately call a POISON CENTER/ doctor.

Wash contaminated clothing before reuse.

Perchloric acid**12415-1L**

Version 1.4

Revision Date 04/20/2022

Print Date 05/11/2023

In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.

In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.

Absorb spillage to prevent material damage.

Storage:

Store locked up.

Store in corrosive resistant container with a resistant inner liner.

Disposal:

Dispose of contents/ container to an approved waste disposal plant.

Hazards not otherwise classified

: Inhaled corrosive substances can lead to a toxic oedema of the lungs.

Carcinogenicity

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

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Formula : HClO₄

Chemical nature : Mixture

Chemical name	CAS-No.	Concentration
Perchloric acid	7601-90-3	>=65.00 - <=72.00 %
Water	7732-18-5	>=28.00 - <=35.00 %

SECTION 4. FIRST AID MEASURES

General advice : First aider needs to protect himself. Move out of dangerous

Perchloric acid**12415-1L**

Version 1.4

Revision Date 04/20/2022

Print Date 05/11/2023

area. Show this safety data sheet to the doctor in attendance.

- Inhalation : If inhaled, remove to fresh air. Call a physician immediately.
- Skin contact : Wash off immediately with plenty of water. Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty.
- Eye contact : Protect unharmed eye. Rinse thoroughly with plenty of water, also under the eyelids. Call a physician immediately.
- Ingestion : A person suspected to have swallowed the substance who is conscious should be given water to drink. Take to a doctor immediately together with this card

Notes to physician

- Most important symptoms/effects, acute and delayed : No information available.
- Indication of immediate medical attention and special treatment needed, if necessary : Treat symptomatically.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Water spray jet
Foam
Carbon dioxide (CO2)
Dry powder
- Specific hazards during firefighting : Strong oxidizer. Contact with other material may cause fire.
In fires, the product supports combustion.
The product itself does not burn.
Toxic vapors produced upon heating this material.
Some risk may be expected of corrosive and toxic decomposition products.
- Special protective equipment for firefighters : Wear self-contained breathing apparatus and protective suit.
No unprotected exposed skin areas.
- Further information : In wet solutions watch out for etching influence.

Perchloric acid**12415-1L**

Version 1.4

Revision Date 04/20/2022

Print Date 05/11/2023

Use water spray to cool unopened containers.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- | | | |
|---|---|--|
| Personal precautions,
protective equipment and
emergency procedures | : | Evacuate personnel to safe areas.
Wear personal protective equipment. Unprotected persons
must be kept away.
Do not breathe vapours or spray mist.
Do not get in eyes, on skin, or on clothing. |
| Environmental precautions | : | Prevent further leakage or spillage if safe to do so. |
| Methods and materials for
containment and cleaning
up | : | Do not pick up with the help of saw-dust or other combustible
substances.
Use neutralizing agents.
Contain spillage, soak up with non-combustible absorbent
material, (e.g. sand, earth, diatomaceous earth, vermiculite) and
transfer to a container for disposal according to local / national
regulations (see section 13).
Dispose of promptly.
Clean contaminated surface thoroughly. |

SECTION 7. HANDLING AND STORAGE**Handling**

- | | | |
|--|---|---|
| Precautions for safe
handling | : | Wear personal protective equipment.
Use only in well-ventilated areas.
Containers which are opened must be carefully resealed and
kept upright to prevent leakage.
Contaminated equipment (brushes, rags) must be cleaned
immediately with water.
Never return unused material to storage receptacle.
Wash parts with an aqueous solution of calcium hydroxide.
Do not breathe vapours or spray mist.
Do not get in eyes, on skin, or on clothing. |
| Advice on protection against
fire and explosion | : | The product is not flammable.
Keep away from combustible material.
Contact with metals liberates hydrogen gas. |

Perchloric acid**12415-1L**

Version 1.4

Revision Date 04/20/2022

Print Date 05/11/2023

Storage

Conditions for safe storage, including any incompatibilities : Store in original container.
Keep containers tightly closed in a dry, cool and well-ventilated place.
Keep away from heat and sources of ignition.
Keep away from direct sunlight.
Store away from incompatible substances.
Store in a place accessible by authorized persons only.

Advice on common storage : Do not store with combustible materials.
Keep away from reducing agents.
Do not store together with:
Metals
Amines
Alcohols
Bases

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Protective measures : Ensure that eyewash stations and safety showers are close to the workstation location.
Legal requirements are to be considered in regard of the selection, use and care of personal protective equipment.
Do not breathe vapours or spray mist.
Do not get in eyes, on skin, or on clothing.

Engineering measures : Use with local exhaust ventilation.

Eye protection : Safety goggles
Face-shield

Hand protection : Impervious gloves

Skin and body protection : Complete suit protecting against chemicals

Respiratory protection : In case of insufficient ventilation, wear suitable respiratory equipment.

Hygiene measures : Wash hands and face before breaks and immediately after handling the product.

Perchloric acid**12415-1L**

Version 1.4

Revision Date 04/20/2022

Print Date 05/11/2023

Separate rooms are required for washing, showering and changing clothes.

Keep working clothes separately.

Regular cleaning of equipment, work area and clothing.

When using do not eat or drink.

When using do not smoke.

Exposure Guidelines

Contains no substances with occupational exposure limit values.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	: liquid
Color	: colourless
Odor	: odourless
Odor threshold	: Note: No data available
pH	: < 1
Melting point/range	: -18 °C
Boiling point/boiling range	: 203 °C
Flash point	: Note: Not applicable
Evaporation rate	: Note: No data available
Flammability	: Not applicable
Lower explosion limit	: Note: Not applicable
Upper explosion limit	: Note: Not applicable

Perchloric acid**12415-1L**

Version 1.4

Revision Date 04/20/2022

Print Date 05/11/2023

Vapor pressure	: Note: No data available
Vapor density	: Note: No data available
Density	: 1.66 g/cm ³ at 20 °C
Specific gravity	: Note: No data available
Water solubility	: Note: completely miscible
Solubility in other solvents	: Note: No data available
Partition coefficient: n-octanol/water	: Note: No data available
Ignition temperature	: 366 °C
Auto-ignition temperature	: Note: not auto-flammable
Decomposition temperature	: Note: To avoid thermal decomposition, do not overheat., Thermal sensitivity, Explosive decomposition
Viscosity, dynamic	: Note: No data available
Viscosity, kinematic	: Note: No data available
Oxidizing properties	: The substance or mixture is classified as oxidizing with the category 1.
Molecular weight	: 100.46 g/mol
Bulk density	: Note: Not applicable
Corrosivity	: Note: Corrosive to metals

Perchloric acid**12415-1L**

Version 1.4

Revision Date 04/20/2022

Print Date 05/11/2023

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: May cause fire or explosion; strong oxidizer.
Chemical stability	: No decomposition if stored normally.
Possibility of hazardous reactions	: Heating above the decomposition temperature Decomposes on heating. Gives off hydrogen by reaction with metals.
Conditions to avoid	: Protect from heat/overheating. Keep away from reducing agents. Keep away from combustible material. Protect from contamination.
Incompatible materials	: Reactions with various metals. Reactions with combustible substances. Reactions with organic substances. Gives off hydrogen by reaction with metals. Bases Rust Dirt
Hazardous decomposition products	: Risk of formation of toxic pyrolysis products. Chlorine compounds

SECTION 11. TOXICOLOGICAL INFORMATION

Acute oral toxicity	: LD50: 200 - 2,000 mg/kg Species: Rat Method: OECD 423
Acute inhalation toxicity	: Note: No data available
Acute dermal toxicity	: Note: No data available

Perchloric acid**12415-1L**

Version 1.4

Revision Date 04/20/2022

Print Date 05/11/2023

Skin irritation : Note: Classification based on Annex VI of regulation 1272/2008/EC.

Eye irritation : Note: Classification based on Annex VI of regulation 1272/2008/EC.

Sensitisation : Note: No data available

Genotoxicity in vitro : Note: No data available

Carcinogenicity : Species: not specified
Note: No data available

Reproductive toxicity : Species: not specified
Note: No data available

SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity effects**

Toxicity to fish : Note: Not classified due to data which are conclusive although insufficient for classification.

Toxicity to daphnia and other aquatic invertebrates : Note: Not classified due to data which are conclusive although insufficient for classification.

Toxicity to algae : Note: Not classified due to data which are conclusive although insufficient for classification.

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : Note: Not classified due to data which are conclusive although insufficient for classification.

Elimination information (persistence and degradability)

Perchloric acid**12415-1L**

Version 1.4

Revision Date 04/20/2022

Print Date 05/11/2023

Mobility : Note: No data available

Further information on ecology

Additional ecological information : The methods for determining biodegradability are not applicable to inorganic substances.
We have no quantitative data concerning the ecological effects of this product.
Neutralisation will reduce ecotoxic effects.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods : Observe all Federal, State, and Local Environmental regulations.

SECTION 14. TRANSPORT INFORMATION

DOT UN/ID No. : UN 1873
Proper shipping name : PERCHLORIC ACID
Class : 5.1
Packing group : I
Hazard Labels : 5.1 (8)

IATA UN/ID No. : UN 1873
Description of the goods : PERCHLORIC ACID
Class : 5.1
Packaging group : I
Hazard Labels : 5.1 (8)
Packing instruction (cargo aircraft) : 553

IMDG UN/ID No. : UN 1873
Description of the goods : PERCHLORIC ACID
Class : 5.1
Packaging group : I
Hazard Labels : 5.1 (8)
EmS Number : F-A, S-Q
Marine pollutant : no
IMDG Code segregation group (SGG1) – ACIDS,

Perchloric acid**12415-1L**

Version 1.4

Revision Date 04/20/2022

Print Date 05/11/2023

SECTION 15. REGULATORY INFORMATION**Inventories**

US. Toxic Substances Control Act : On TSCA Inventory

Australia. Industrial Chemicals Act (AICC), as amended : On the inventory, or in compliance with the inventory

Canada. Canadian Environmental Protection Act (CEPA). Domestic Substances List (DSL) : All components of this product are on the Canadian DSL

Japan. Kashin-Hou Law List : On the inventory, or in compliance with the inventory

Korea. Existing Chemicals Inventory (KECI) : On the inventory, or in compliance with the inventory

Philippines. Inventory of Chemicals and Chemical Substances (PICCS) : On the inventory, or in compliance with the inventory

China. Inventory of Existing Chemical Substances (IECSC) : On the inventory, or in compliance with the inventory

New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand : On the inventory, or in compliance with the inventory

National regulatory information

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

SARA 313 Components : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis)

Perchloric acid**12415-1L**

Version 1.4

Revision Date 04/20/2022

Print Date 05/11/2023

reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards : Reactivity Hazard
Acute Health Hazard

**CERCLA Reportable
Quantity** :

California Prop. 65 : This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

Massachusetts RTK : Perchloric acid 7601-90-3

New Jersey RTK : Perchloric acid 7601-90-3
: Water 7732-18-5

Pennsylvania RTK : Perchloric acid 7601-90-3

SECTION 16. OTHER INFORMATION

	HMIS III	NFPA
Health hazard	: 3	3
Flammability	: 0	0
Physical Hazard	: 3	
Instability	:	3
Special hazard	:	OX

Hazard rating and rating systems (e.g. HMIS® III, NFPA): This information is intended solely for the use of individuals trained in the particular system.

Further information

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a

Perchloric acid**12415-1L**

Version 1.4

Revision Date 04/20/2022

Print Date 05/11/2023

warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. Final determination of suitability of any material is the sole responsibility of the user. This information should not constitute a guarantee for any specific product properties.

Changes since the last version are highlighted in the margin. This version replaces all previous versions.

Previous Issue Date: 06/28/2018

Prepared by Honeywell Performance Materials and Technologies Product Stewardship Group