

Safety Data Sheet

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

Product identifier:

Product name: Perchloric acid(60%)

Product code(SDS NO): 23025jis_E1-2

Details of the supplier of the safety data sheet

Manufacturer/Supplier: JUNSEI CHEMICAL CO., LTD.

Address: 1-6, Ohmano-Cho, Koshigaya, Saitama 343-0844, Japan

Division: Quality Assurance Department

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2. Hazards identification

GHS classification and label elements of the product

Classification of the substance or mixture

PHYSICAL HAZARDS

Oxidizing solids: Category 1

Corrosive to metals: Category 1

HEALTH HAZARDS

Acute toxicity Oral: Category 4

Skin corrosion/irritation: Category 1A

Serious eye damage/eye irritation: Category 1

Specific target organ toxicity – single exposure: Category 2(respiratory system)

(Note) GHS classification without description: Not applicable/Out of classification/Not classifiable

Label elements



Signal word: Danger

HAZARD STATEMENT

May cause fire or explosion; strong oxidizer

May be corrosive to metals

Harmful if swallowed

Causes severe skin burns and eye damage

Causes serious eye damage

May cause damage to organs after single exposure

PRECAUTIONARY STATEMENT

Prevention

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

Keep/Store away from clothing/combustible materials.

Take any precaution to avoid mixing with combustibles and/or other incompatible materials.

Wear fire/flammable resistant/retardant clothing.

Keep only in original container.

Do not breathe dust/fume/gas/mist/vapors/spray.

Wash contaminated parts thoroughly after handling.

Wear protective gloves, protective clothing or face protection.

Wear protective gloves and face protection.

Wear eye protection/face protection.

Do not eat, drink or smoke when using this product.

Response

In case of fire: Use appropriate media 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.

Immediately call a POISON CENTER or doctor/physician.

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

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

Wash contaminated clothing before reuse.

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

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

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

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

Storage

Store locked up.

Store in corrosive resistant/...container with a resistant inner liner.

Disposal

Dispose of contents/container in accordance with local/national regulation.

Physical and Chemical hazards

Oxidizing material. Organic or combustible material may catch fire in contact with it.

3. Composition/information on ingredients

Substance/Mixture:

Mixture

Ingredient name: Perchloric acid

Content(%): 60.0~62.0

Chemical formula: ClHO4

Chemicals No, Japan: 1-221

CAS No.: 7601-90-3

MW: 100.46

ECNO: 231-512-4

Ingredient name: Water

Content(%): Residual quantity of the ingredient mentioned above

Chemical formula: H2O

CAS No.: 7732-18-5

MW: 18.02

ECNO: 231-791-2

4. First-aid measures

Descriptions of first-aid measures

General measures

Immediately call a POISON CENTER or doctor/physician.

IF INHALED

Remove person to fresh air and keep comfortable for breathing.

Call a POISON CENTER or doctor/physician if you feel unwell.

IF ON SKIN (or hair)

Take off immediately all contaminated clothing. Rinse skin with water/shower.

IF ON CLOTHING: Rinse immediately contaminated clothing and skin with plenty of water

before removing clothes.

If skin irritation or rash occurs: Get medical advice/attention.

IF IN EYES

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

If eye irritation persists: Get medical advice/attention.

IF SWALLOWED

Rinse mouth. Do NOT induce vomiting.

Call a POISON CENTER or doctor/physician if you feel unwell.

Most important symptoms and effects, both acute and delayed

(Symptoms when inhalation or ingestion)

Sore throat. Burning sensation. Cough. Laboured breathing. Abdominal pain. Diarrhoea. Shock or collapse. Vomiting.

(Symptoms when skin and/or eye contact)

Redness. Pain. Serious burns. Loss of vision.

Indication of any immediate medical attention and special treatment needed

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.

5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

In case of fire, use water in large amounts.

Not combustible but enhances combustion of other substances.

Unsuitable extinguishing media

Dry chemicals. Foams.

Specific hazards arising from the substance or mixture

Containers may explode when heated.

Fire may produce irritating, corrosive and/or toxic gases.

Runoff from fire control or dilution water may cause pollution.

Advice for firefighters

Specific fire-fighting measures

Evacuate non-essential personnel to safe area.

Keep drums, etc., cool by spraying with water. Combat fire from a sheltered position.

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

Special protective equipment and precautions for fire-fighters

Wear fire/flare resistant/retardant clothing.

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

Firefighters should wear self-contained breathing apparatus with full face piece operated positive pressure mode.

6. Accidental release measures

Personnel precautions, protective equipment and emergency procedures

Keep unauthorized personnel away.

In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.

Ventilate area after material pick up is complete.

Wear proper protective equipment.

Environmental precautions

Avoid release to the rivers, lakes, ocean, groundwater.

Methods and materials for containment and cleaning up

Absorb spill with inert material (dry sand, earth, et al), then place in a chemical waste container.

Do NOT absorb in saw-dust or other combustible absorbents.

Preventive measures for secondary accident

Absorb spillage to prevent material-damage.

Collect spillage.

Prevent entry into waterways, sewers, basements or confined areas.

Keep combustibles (wood, paper, oil, etc.) away from spilled material.

Use water spray to reduce vapors or divert vapor cloud drift.

7. Handling and storage**Precautions for safe handling****Preventive measures**

(Exposure Control for handling personnel)

Do not breathe dust/fume/gas/mist/vapors/spray.

(Protective measures against fire & explosion)

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

Keep/Store away from clothing/combustible materials.

Exhaust/ventilator

Exhaust/ventilator should be available.

Safety treatments

Avoid contact with skin.

Avoid contact with eyes.

Avoid breathing dust, vapor, mist, or gas.

Safety Measures/Incompatibility

Take any precaution to avoid mixing with combustibles/incompatible materials.

Wear protective gloves, protective clothing or face protection.

Wear protective gloves and face protection.

Wear eye protection/face protection.

Use personal protective equipment as required.

When using do not eat, drink or smoke.

Conditions for safe storage, including any incompatibilities**Recommendation for storage**

Store in a well-ventilated place. Keep container tightly closed.

Keep cool. Protect from sunlight.

Store locked up.

Incompatible storage condition

The product may corrode metal. Do not keep in a metal container.

Recommendation on container and packaging materials

Keep only in original container.

Store in corrosive resistant/...container with a resistant inner liner.

8. Exposure controls/personal protection**Control parameters**

No control value data available

Adopted value

No Adopted value data available

Exposure controls**Appropriate engineering controls**

Do not use in areas without adequate ventilation.

Eye wash station should be available.

Washing facilities should be available.

Individual protection measures**Respiratory protection**

Wear respiratory protection.

Wear positive pressure self-contained breathing apparatus (SCBA).

Hand protection

Wear protective gloves. Recommended material(s): nitrile; butyl rubber; PVC; impermeable or chemical resistant rubber

Consult with your glove and/or personnel equipment manufacturer for selection of appropriate compatible materials.

Eye protection

Wear safety glasses with side-shields or chemical safety goggle.

Wear eye/face protection.

Safety and Health measures

Wash ... thoroughly after handling.

Do not eat, drink or smoke when using this product.

Wash contaminated clothing before reuse.

9. Physical and Chemical Properties**Information on basic physical and chemical properties****Physical properties**

Appearance: Liquid

Color: Colorless

Odor: Irritant odor

pH: Strong acidic.

Phase change temperature

Initial Boiling Point/Boiling point data N.A.

Melting point/Freezing point data N.A.

Decomposition temperature data N.A.

Flash point data N.A.

Auto-ignition temperature data N.A.

Explosive properties data N.A.

Vapor pressure data N.A.

Vapor density data N.A.

Specific gravity/Density: 1.5389(25°C)

Solubility

Solubility in water: Miscible

n-Octanol /water partition coefficient data N.A.

10. Stability and Reactivity**Chemical stability**

Stable under normal storage/handling conditions.

Possibility of hazardous reactions

May explode on heating.

Decomposes on heating. This produces toxic and corrosive fumes.

The solution is a strong oxidant. It reacts violently with combustible and reducing materials, organic materials and strong bases. This generates fire and explosion hazard.

Attacks many metals. This produces flammable/explosive gas.

The acid is unstable if the concentration is over 72%; may explode by shock or concussion when dry or drying.

Mixtures with combustible material (such as paper) may ignite spontaneously at room temperature.

Conditions to avoid

Contact with incompatible materials.

Heat. Friction. Shock.

Incompatible materials

Strong bases, Reducing agents, Metals, Organic materials. Combustible substances

Hazardous decomposition products

Hydrogen chloride, Chlorine, Hydrogen gas.

11. Toxicological Information

Information on toxicological effects

Acute toxicity

Acute toxicity (Oral)

[GHS Cat. Japan, base data]

(Perchloric acid) rat LD50=1100 mg/kg (RTECS, Access on July 2007)

Irritant properties

Skin corrosion/irritation

[GHS Cat. Japan, base data]

(Perchloric acid) human : corrosive (HSDB, 2003 et al.)

Serious eye damage /irritation

[GHS Cat. Japan, base data]

(Perchloric acid) human : corrosive (HSDB, 2003 et al.)

No Allergenic and sensitizing effects data available

No Mutagenic effects data available

No Carcinogenic effects data available

No reproductive toxicity data available

Delayed and immediate effects and also chronic effects from short- and long-term exposure

STOT

STOT-single exposure

[cat.2]

[Japan published data]

(Perchloric acid) respiratory apparatus/system (HSDB, 2003)

No Aspiration hazard data available

Additional data

There are no data available on the preparation itself.

12. Ecological Information

Toxicity

No Aquatic toxicity data available

No Persistence and degradability data available

No Bioaccumulative potential data available

13. Disposal considerations

Waste treatment methods

Dispose of contents/container in accordance with local/national regulation.

14. Transport Information

UN No, UN CLASS

UN number: 1873

UN proper shipping name: PERCHLORIC ACID with more than 50% but not more than 72% acid, by mass

Transport hazard class(es): 5.1

Transport subsidiary risks: 8

Packing group: I

15. Regulatory Information

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

US major regulations

TSCA

Perchloric acid; Water

Other regulatory information

We are not able to check up the regulatory information in regard to the substances in your country or region, therefore, we request this matter would be filled by your responsibility.

Regulatory information with regard to this substance in your country or in your region should be examined by your own responsibility.

Ensure this material in compliance with federal requirements and ensure conformity to local regulations.

16. Other information

GHS classification and labelling

Ox. Sol. 1: H271 May cause fire or explosion; strong oxidizer

Corr. Met. 1: H290 May be corrosive to metals

Acute Tox. 4: H302 Harmful if swallowed

Skin Corr. 1A: H314 Causes severe skin burns and eye damage

Eye Dam. 1: H318 Causes serious eye damage

STOT SE 2: H371 May cause damage to organs after single exposure

Reference Book

Globally Harmonized System of classification and labelling of chemicals, (5th ed., 2013), UN Recommendations on the TRANSPORT OF DANGEROUS GOODS 19th edit., 2015 UN Classification, labelling and packaging of substances and mixtures (table 3-1 ECNO 6182012) 2012 EMERGENCY RESPONSE GUIDEBOOK (US DOT)

2016 TLVs and BEIs. (ACGIH)

<http://monographs.iarc.fr/ENG/Classification/index.php>

Supplier's data/information

Chemical Risk Information Platform (CHRIP)(NITE) <http://www.safe.nite.go.jp/japan/db.html>

GHS Classification Guidance for Enterprises 2013 Revised Edition (August, 2013, METI)

General Disclaimer

This information contained in this data sheet represents the best information currently available to us. However, no warranty is made with respect to its completeness and we assume no liability resulting from its use. It is advised to make their own tests to determine the safety and suitability of each such product or combination for their own purposes.

The data given here is based on current knowledge and experience. The purpose of this Safety Data Sheet is to describe the products in terms of their safety requirements. The data does not signify any warranty with regard to the products' properties.

The GHS classification data given here is based on current Japan official data (NITE published in 2015).