

0.05mol/L Perchloric acid-acetic acid solution,
JUNSEI CHEMICAL CO., LTD.,95291jis_J_E1-1,26/02/2020

Date of issue for the 1st edition : 26/02/2020

Safety Data Sheet

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

Product identifier:

Product name: 0.05mol/L Perchloric acid-acetic acid solution

Product code (SDS NO): 95291jis_J_E1-1

Details of the supplier of the safety data sheet

Manufacturer/Supplier: JUNSEI CHEMICAL CO., LTD.

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

Division: Quality Assurance Department

Telephone number: +81-48-986-6161

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2. Hazards identification

GHS classification and label elements of the product

Classification of the substance or mixture

PHYSICAL AND CHEMICAL HAZARDS

Flammable liquids: Category 3

HEALTH HAZARDS

Acute toxicity (Dermal): Category 4

Skin corrosion/irritation: Category 1

Serious eye damage/eye irritation: Category 1

Specific target organ toxicity - single exposure: Category 1(blood, respiratory system)

ENVIRONMENT HAZARDS

Hazardous to the aquatic environment (Acute): Category 3

(Note) GHS classification without description: Not classified/Classification not possible

Label elements



Signal word: Danger

HAZARD STATEMENT

H226-Flammable liquid and vapor

H312-Harmful in contact with skin

H314-Causes severe skin burns and eye damage

H318-Causes serious eye damage

H370-Causes damage to organs after single exposure

H402-Harmful to aquatic life

PRECAUTIONARY STATEMENT

Prevention

Avoid release to the environment.

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

Keep container tightly closed.

Ground/bond container and receiving equipment.

Use explosion-proof electrical/ventilating/lighting equipment.

Use only non-sparking tools.

Take precautionary measures against static discharge.

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Do not breathe dust/fume/gas/mist/vapors/spray.
Wash contaminated parts thoroughly after handling.
Wear protective gloves/protective clothing/eye protection/face protection.
Do not eat, drink or smoke when using this product.

Response

In case of fire: Use appropriate media for extinction.
Immediately call a POISON CENTER or doctor/physician.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF ON SKIN: Wash with plenty of soap and water.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
Take off contaminated clothing and wash it before reuse.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

Storage

Store in a well-ventilated place. Keep cool.
Store locked up.

Disposal

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

Specific Physical and Chemical hazards

Flammable liquid. Vapor/air mixture may explode.

3. Composition/information on ingredients

Mixture/Substance selection:

Mixture

Ingredient name:Perchloric acid

Content (%):0.47

Chemical formula:ClHO4

Chemicals No, Japan:1-221

CAS No.:7601-90-3

MW:100.46

ECNO:231-512-4

Ingredient name:Acetic acid

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

Chemical formula:C2H4O2

Chemicals No, Japan:2-688

CAS No.:64-19-7

MW:60.05

ECNO:200-580-7

Note : The figures shown above are not the specifications of the product.

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.

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Wash with plenty of soap and water.

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.

5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

In case of fire, use water mist, foam, dry powder, CO2 to extinguish.

Unsuitable extinguishing media data is not available.

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.

Special protective equipment and precautions for fire-fighters

Wear fire/ flame 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 until material pick up is complete.

Wear proper protective equipment.

PUBLIC SAFETY: Ventilate closed spaces before entering.

Environmental precautions

Runoff to sewer may create fire or explosion hazard.

Vapor explosion hazard indoors, outdoors or in sewers.

Avoid release to headsprings, rivers, lakes, ocean and 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.

Use clean non-sparking tools to collect absorbed material.

All equipment used when handling the product must be grounded.

Preventive measures for secondary accident

Collect spillage.

Stop leak if you can do it without risk.

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

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 and explosion)

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

Ground/bond container and receiving equipment.

Use explosion-proof electrical/ventilating/lighting equipment.

Use only non-sparking tools.

Take precautionary measures against static discharge.

(Exhaust/ventilator)

Exhaust/ventilator should be available.

(Safety treatments)

Avoid contact with skin.

Avoid contact with eyes.

Safety Measures

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

Wear protective gloves, protective clothing or face protection.

Use personal protective equipment as required.

When using do not eat, drink or smoke.

Any incompatibilities

Strong bases should not be mixed with the chemicals.

Advice on general occupational hygiene

Wash contaminated parts thoroughly after handling.

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

Take off contaminated clothing and wash it before reuse.

Storage

Conditions for safe storage

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

Keep cool. Protect from sunlight.

Store locked up.

Container and packaging materials for safe handling data is not available.

8. Exposure controls/personal protection

Control parameters

Control value in MHLW is not available.

Adopted value

(Acetic acid)

JSOH(1978) 10ppm; 25mg/m³

ACGIH(2003) TWA: 10ppm;

STEL: 15ppm (URT & eye irr; pulm func)

OSHA-PEL

(Acetic acid)

TWA: 10ppm, 25mg/m³

NIOSH-REL

(Acetic acid)

TWA: 10ppm; STEL: 15ppm

Exposure controls

Appropriate engineering controls

Do not use in areas without adequate ventilation.

Eye wash station should be available.

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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): butyl rubber

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

Eye protection

Wear chemical safety goggle.

Wear eye/face protection.

Skin and body protection

Wear impervious clothing and boots in case of repeated or prolonged treatment.

9. Physical and Chemical Properties

Information on basic physical and chemical properties

Physical state: Liquid

Color: Colorless

Odor: Irritant odor

Odor threshold data is not available.

pH: Strong acidic

Boiling point or initial boiling point: 118°C(Acetic acid)

Boiling range data is not available.

Evaporation rate data is not available.

Melting point/Freezing point data is not available.

Decomposition temperature data is not available.

Self-Accelerating Decomposition Temperature/SADT data is not available.

Flammability (gases, liquids and solids) data is not available.

Flash point: (c.c.)39°C(Acetic acid)

Auto-ignition temperature: 485°C(Acetic acid)

Critical temperature data is not available.

Lower and upper explosion limit/flammability limit data is not available.

Vapor pressure data is not available.

VOC data is not available.

Relative vapor density (Air=1) data is not available.

Relative density of the Vapor/air - mixture at 20°C (Air = 1) data is not available.

Density and/or relative density data is not available.

Dynamic viscosity data is not available.

Kinematic viscosity data is not available.

Solubility:

Solubility in water: Miscible

Solubility in solvent data is not available.

n-Octanol/water partition coefficient data is not available.

No Particle characteristics data is not available.

10. Stability and Reactivity

Reactivity data is not available.

Chemical stability

Stable under normal storage/handling conditions.

Possibility of hazardous reactions data is not available.

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Conditions to avoid

Contact with incompatible materials.
Open flames. Heat. Sparks.

Incompatible materials

Strong bases

Hazardous decomposition products

Carbon oxides, Chlorides

11. Toxicological Information

Information on toxicological effects

Acute toxicity

Acute toxicity (Oral)

[GHS Cat. Japan, base data]
(Acetic acid) rat LD50=3310mg/kg (PATTY 5th, 2001)
(Perchloric acid) rat LD50=1100mg/kg (MOE assessment vol.9, 2011)

Acute toxicity (Dermal)

[GHS Cat. Japan, base data]
(Acetic acid) rabbit LD50=1060mg/kg (PATTY 5th, 2001)

Irritant properties

Skin corrosion/irritation

[GHS Cat. Japan, base data]
(Acetic acid) rabbit/guinea pig : severe burn (PATTY 5th, 2001 et al)
(Perchloric acid) human: corrosive (MOE risk assessment vol.9, 2011; NICNAS IMAP, Accessed Oct. 2018)

Serious eye damage/irritation

[GHS Cat. Japan, base data]
(Acetic acid) rabbit : permanent corneal damage (IUCLID, 2000 et al)
(Perchloric acid) skin corrosive/irritation class 1

Allergenic and sensitizing effects data is not available.

Mutagenic effects data is not available.

Carcinogenicity

[GHS Cat. Japan, base data]
(Perchloric acid) cat.2; (MOE risk assessment vol.9, 2011)

Reproductive toxicity

[GHS Cat. Japan, base data]
(Perchloric acid) cat. 2; rat : MOE risk assessment vol.9, 2011

STOT

STOT-single exposure

[cat.1]

[GHS Cat. Japan, base data]
(Acetic acid) blood; respiratory apparatus/system (ACGIH, 2004)

[cat.3 (resp. irrit.)]

[GHS Cat. Japan, base data]
(Perchloric acid) respiratory tract irritation (MOE risk assessment vol.9, 2011)

STOT-repeated exposure data is not available.

Aspiration hazard data is not available.

Additional data

Data on the preparation itself is not available.

12. Ecological Information

Ecotoxicity

Aquatic toxicity

H402-Harmful to aquatic life

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Aquatic acute toxicity component(s) data

[GHS Cat. Japan, base data]

(Acetic acid)

Crustacea (Daphnia magna) EC50=65mg/L/48hr (Aquire, 2010)

(Perchloric acid)

Crustacea (Daphnia magna) LC50 = 495mg/L/48hr [490mg ClO₄⁻/L/48hr cal.]

(MOE risk assessment vol.9, 2011)

Aquatic chronic toxicity component(s) data

[GHS Cat. Japan, base data]

(Perchloric acid)

Fish (fat head minnow) NOEC ≥ 495 mg/L/35days (≥ 490mg ClO₄⁻/L/35days cal.)(MOE risk assessment vol.9, 2011)

Water solubility

(Acetic acid) miscible (ICSC, 2010)

(Perchloric acid) miscible (ICSC, 2000)

Persistence and degradability

(Acetic acid) BOD_Degradation : 74% (Registered chemicals data check & review)

Bioaccumulative potential

(Acetic acid) log Pow=-0.17 (PHYSPROP DB, 2005)

Mobility in soil data is not available.

Ozone depleting chemical data is not available.

Additional data

Data on the preparation itself is not available.

13. Disposal considerations

Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging

Waste treatment methods

Avoid release to the environment (- if this is not the intended use).

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

14. Transport Information

UN No., UN CLASS

UN No.: 2789

Proper Shipping Name :

ACETIC ACID, GLACIAL or ACETIC ACID SOLUTION, more than 80% acid, by mass

Class or division : 8

Subsidiary hazard(s) : 3

Packing group : II

ERG GUIDE No.: 132

IMDG Code (International Maritime Dangerous Goods Regulations)

UN No.: 2789

Proper Shipping Name :

ACETIC ACID, GLACIAL or ACETIC ACID SOLUTION, more than 80% acid, by mass

Class or division : 8

Subsidiary hazard(s) : 3

Packing group : II

IATA Dangerous Goods Regulations

UN No.: 2789

Proper Shipping Name :

ACETIC ACID, GLACIAL or ACETIC ACID SOLUTION, more than 80% acid, by mass

Class or division : 8

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Subsidiary hazard(s) : 3
Hazard labels : Corrosive & Flamm.liquid
Packing group : II

Environmental hazards

MARPOL Annex III – Prevention of pollution by harmful substances

Marine pollutants (yes/no) : no

15. Regulatory Information

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

Environmental hazards

Transport in bulk according to Annex II of MARPOL73/78 and IBC Code

Noxious Liquid ; Cat. Z

Acetic acid

Basel law, Japan

Acetic acid

US major regulations

Chemicals listed in TSCA Inventory

Acetic acid; Perchloric acid

Other regulatory information

We are not able to check up the regulatory information with 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.

Regulatory information in this section are limited to intentional ingredient(s), but does not contain information on non-intentional ingredients or impurities which are not informed by supplier(s).

16. Other information

GHS classification and labelling

H226-Flam. Liq. 3: H226 Flammable liquid and vapor

H312-Acute Tox. 4: H312 Harmful in contact with skin

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

H318-Eye Dam. 1: H318 Causes serious eye damage

H370-STOT SE 1: H370 Causes damage to organs after single exposure

H402-Aquatic Acute 3: H402 Harmful to aquatic life

Reference Book

Globally Harmonized System of classification and labelling of chemicals, (6th ed., 2015), UN

Recommendations on the TRANSPORT OF DANGEROUS GOODS 20th edit., 2017 UN

IMDG Code, 2018 Edition (Incorporating Amendment 39-18)

IATA Dangerous Goods Regulations (60th Edition) 2019

Classification, labelling and packaging of substances and mixtures (table3-1 ECNO6182012)

2016 EMERGENCY RESPONSE GUIDEBOOK (US DOT)

2019 TLVs and BEIs. (ACGIH)

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

JIS Z 7253 : 2019

JIS Z 7252 : 2019

2019 Recommendation on TLVs (JSOH)

Supplier's data/information

Chemicals safety data management system "GHS Assistant" (<https://www.asahi-ghs.com/>)

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NITE Chemical Risk Information Platform (NITE-CHRIP)

https://www.nite.go.jp/en/chem/chrip/chrip_search/systemTop

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

General Disclaimer

This data sheet was created based on the information we currently have and may be revised according to new information. In addition, the precautions apply only to normal handling, and in the case of special handling, please make adequate countermeasure to maintain your safety.

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 2018).