

## Safety Data Sheet

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

#### Product identifier:

Product name: 0.01mol/L 0.01mol/L Potassium hydroxide ethanolic solution

Product code (SDS NO): 95536jis\_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

FAX: +81-48-989-2787

e-mail address: shiyaku-t@junsei.co.jp

### 2. Hazards identification

#### GHS classification and label elements of the product

#### Classification of the substance or mixture

##### PHYSICAL AND CHEMICAL HAZARDS

Flammable liquids: Category 2

##### HEALTH HAZARDS

Serious eye damage/eye irritation: Category 2

Carcinogenicity: Category 1A

Reproductive toxicity: Category 1A

Specific target organ toxicity – single exposure: Category 3 (Respiratory tract irritation)

Specific target organ toxicity – single exposure: Category 3(Narcosis)

Specific target organ toxicity – repeated exposure: Category 1(liver)

Specific target organ toxicity – repeated exposure: Category 2(central nervous system)

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

#### Label elements



Signal word: Danger

#### HAZARD STATEMENT

H225-Highly flammable liquid and vapor

H319-Causes serious eye irritation

H350-May cause cancer

H360-May damage fertility or the unborn child

H335-May cause respiratory irritation

H336-May cause drowsiness or dizziness

H372-Causes damage to organs through prolonged or repeated exposure

H373-May cause damage to organs 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.

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

Keep container tightly closed.

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Ground/bond container and receiving equipment.  
Use explosion-proof electrical/ventilating/lighting equipment.  
Use only non-sparking tools.  
Take precautionary measures against static discharge.  
Do not breathe dust/fume/gas/mist/vapors/spray.  
Use only outdoors or in a well-ventilated area.  
Wash contaminated parts thoroughly after handling.  
Wear protective gloves/protective clothing/eye protection/face protection.  
Use personal protective equipment as required.  
Do not eat, drink or smoke when using this product.

#### Response

In case of fire: Use appropriate media other than water for extinction.  
Get medical advice/attention if you feel unwell.  
IF exposed or concerned: Get medical advice/attention.  
Call a POISON CENTER or doctor/physician if you feel unwell.  
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.  
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.

#### Storage

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

#### Disposal

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

#### Specific Physical and Chemical hazards

Highly flammable liquid. Vapor/air mixture may explode.

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### 3. Composition/information on ingredients

#### Mixture/Substance selection:

##### Mixture

Ingredient name:Potassium hydroxide  
Content (%):ca. 0.03  
Chemical formula:HKO  
Chemicals No, Japan:1-369  
CAS No.:1310-58-3  
MW:56.11  
ECNO:215-181-3

Ingredient name:Ethanol  
Content (%):94  
Chemical formula:C2H5OH  
Chemicals No, Japan:2-202  
CAS No.:64-17-5  
MW:46.07  
ECNO:200-578-6

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

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

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#### 4. First-aid measures

##### Descriptions of first-aid measures

##### General measures

Get medical attention/advice if you feel unwell.

##### 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 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.

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

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#### 5. Fire-fighting measures

##### Extinguishing media

##### Suitable extinguishing media

In case of fire, use water mist, alcohol-resistant 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.

Cool container with water spray.

##### 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.

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#### 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.

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Methods and materials for containment and cleaning up

- Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.
- 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.

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## 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

- Obtain special instructions before use.
- Do not handle until all safety precautions have been read and understood.
- Use only outdoors or in a well-ventilated area.
- Wear protective gloves/protective clothing/eye protection/face protection.
- Use personal protective equipment as required.
- When using do not eat, drink or smoke.

#### Any incompatibilities

- Strong acids 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.

#### Storage

##### Conditions for safe storage

- Store in a well-ventilated place. Keep container tightly closed.
- Keep cool. Protect from sunlight.
- Store locked up.

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

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## 8. Exposure controls/personal protection

### Control parameters

- Control value in MHLW is not available.

### Adopted value

- (Potassium hydroxide)
- JSOH(1978) (ceiling) 2mg/m<sup>3</sup>
- ACGIH(1992) STEL: C 2mg/m<sup>3</sup> (URT, eye & skin irr)

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(Ethanol)

Adopted value in JSOH is not available.

ACGIH(2008) STEL: 1000ppm (URT irr)

OSHA-PEL

(Ethanol)

TWA: 1000ppm, 1900mg/m<sup>3</sup>

NIOSH-REL

(Ethanol)

TWA: 1000ppm

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.

Hand protection

Wear protective gloves. Recommended material(s): butyl rubber, viton

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.

Skin and body protection

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

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## 9. Physical and Chemical Properties

Information on basic physical and chemical properties

Physical state: Liquid

Color: Colorless

Odor data is not available.

Odor threshold data is not available.

pH: Basic

Boiling point or initial boiling point: 79°C(Ethanol)

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.)12.0°C(Ethanol)

Auto-ignition temperature: 400°C(Ethanol)

Critical temperature data is not available.

Lower and upper explosion limit/flammability limit:

Lower explosion limit: 3.1vol%(Ethanol)

Upper explosion limit: 27.7vol%(Ethanol)

Vapor pressure data is not available.

Vapor density 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.

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Dynamic viscosity data is not available.

Kinematic viscosity data is not available.

Solubility:

Solubility in water: Miscible

Solubility in solvent: Miscible with ethanol.

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

No Particle characteristics data is not available.

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## 10. Stability and Reactivity

Reactivity

Reactivity data is not available.

Chemical stability

Stable under normal storage/handling conditions.

Flammable.

Possibility of hazardous reactions

Possibility of hazardous reactions data is not available.

Conditions to avoid

Contact with incompatible materials.

Open flames. Heat. Sparks.

Incompatible materials

Strong acids

Hazardous decomposition products

Carbon oxides, Metal oxides

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## 11. Toxicological Information

Information on toxicological effects

Acute toxicity

Acute toxicity (Oral)

[GHS Cat. Japan, base data]

(Potassium hydroxide) rat LD50=273mg/kg (SIDS, 2004)

Labor standard law, Japan; Toxic

Potassium hydroxide

Irritant properties

Skin corrosion/irritation

[GHS Cat. Japan, base data]

(Potassium hydroxide)

rabbit/human : corrosive (SIDS, 2004; ECETOC TR66, 1995; JSOH, 1978; PATTY 6th, 2012)

Serious eye damage/irritation

[GHS Cat. Japan, base data]

(Potassium hydroxide) rabbit : corrosive (SIDS, 2004; JSOH, 1978; PATTY 6th, 2012)

(Ethanol) rabbit : recover within 7 days (ECETOC TR No.48(2), 1998 et al)

Allergenic and sensitizing effects data is not available.

Mutagenic effects data is not available.

Carcinogenicity

[GHS Cat. Japan, base data]

(Ethanol)

cat.1A; (ACGIH 7th, 2012; IARC, 2010)

IARC-Gr.1 : Carcinogenic to humans

ACGIH-A3(2008) : Confirmed Animal Carcinogen with Unknown Relevance to Humans

Reproductive toxicity

[GHS Cat. Japan, base data]

(Ethanol) cat. 1A; human : PATTY 6th, 2012

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#### STOT

STOT-single exposure

[cat.3 (resp. irrit.)]

[GHS Cat. Japan, base data]

(Ethanol) respiratory tract irritation (PATTY 6th, 2012)

[cat.3 (drow./dizz.)]

[GHS Cat. Japan, base data]

(Ethanol) narcosis (PATTY 6th, 2012; SIDS, 2005)

STOT-repeated exposure

[cat.1]

[GHS Cat. Japan, base data]

(Ethanol) liver (DFGOT vol.12, 1999)

[cat.2]

[GHS Cat. Japan, base data]

(Ethanol) CNS (HSDB, Access on Jun. 2013)

Aspiration hazard

[cat.1]

[GHS Cat. Japan, base data]

(Potassium hydroxide) cat. 1; ACGIH 7th, 2001; SIDS, 2004

Additional data

Data on the preparation itself is not available.

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## 12. Ecological Information

Ecotoxicity

Aquatic toxicity

Hazardous to the aquatic environment (Acute)

[GHS Cat. Japan, base data]

(Ethanol) Algae (Chlorella) EC50=1000mg/L/96hr (SIDS, 2005)

Hazardous to the aquatic environment (Long-term)

[GHS Cat. Japan, base data]

(Ethanol) Crustacea (Ceriodaphnia reticulata) NOEC=9.6mg/L/10days (SIDS, 2005)

Water solubility

(Potassium hydroxide) 110 g/100 ml (25°C) (ICSC, 2010)

(Ethanol) miscible (ICSC, 2018)

Persistence and degradability

(Ethanol) Degrade rapidly (BOD\_Degradation : 89% (Registered chemicals data check & review, 1993))

Bioaccumulative potential

(Ethanol) log Pow=-0.32 (ICSC, 2018)

Mobility in soil

Mobility in soil data is not available.

Other adverse effects

Ozone depleting chemical data is not available.

Additional data

Data on the preparation itself is not available.

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## 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

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

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**14. Transport Information**

## UN No., UN CLASS

UN No.: 2924

Proper Shipping Name : FLAMMABLE LIQUID, CORROSIVE, N.O.S.

Class or division : 3

Subsidiary hazard(s) : 8

Packing group : II

ERG GUIDE No.: 132

## IMDG Code (International Maritime Dangerous Goods Regulations)

UN No.: 2924

Proper Shipping Name : FLAMMABLE LIQUID, CORROSIVE, N.O.S.

Class or division : 3

Subsidiary hazard(s) : 8

Packing group : II

## IATA Dangerous Goods Regulations

UN No.: 2924

Proper Shipping Name : FLAMMABLE LIQUID, CORROSIVE, N.O.S.

Class or division : 3

Subsidiary hazard(s) : 8

Hazard labels : Flamm.liquid &amp; Corrosive

Packing group : II

## Environmental hazards

MARPOL Annex III – Prevention of pollution by harmful substances

Marine pollutants (yes/no) : no

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**15. Regulatory Information**

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

## Environmental hazards

MARPOL Annex V – Prevention of pollution by garbage discharge

Carcinogenicity: cat.1, 1A, 1B

Ethanol

Reproductive toxicity: cat.1, 1A, 1B

Ethanol

Specific target organ toxicity – repeated exposure: cat.1

Ethanol

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

Noxious Liquid ; Cat. Y

Potassium hydroxide

Noxious Liquid ; Cat. Z

Ethanol

Non Noxious Liquid ; Cat. OS

Water

Basel law, Japan

Ethanol

## US Federal Regulations

Chemicals listed in TSCA Inventory

Ethanol; Potassium hydroxide; Water

## 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.



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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).

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## 16. Other information

### GHS classification and labelling

H225-Flam. Liq. 2: H225 Highly flammable liquid and vapor

H319-Eye Irrit. 2: H319 Causes serious eye irritation

H350-Carc. 1A: H350 May cause cancer

H360-Repr. 1A: H360 May damage fertility or the unborn child

H335-STOT SE 3: H335 May cause respiratory irritation

H336-STOT SE 3: H336 May cause drowsiness or dizziness

H372-STOT RE 1: H372 Causes damage to organs through prolonged or repeated exposure

### 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 (61th Edition) 2020

Classification, labelling and packaging of substances and mixtures (Table 3 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/>)

NITE Chemical Risk Information Platform (NITE-CHRIP)

[https://www.nite.go.jp/en/chem/chrip/chrip\\_search/systemTop](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).