

## Safety Data Sheet

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

**Product identifier:**

Product name: 0.05mol/L Iodine solution

Reference number(SDS): 95713jis\_E-3

**Product type:**

Reagent

**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

### Section 2. Hazards identification

**GHS classification and label elements of the product****Classification of the substance or mixture****HEALTH HAZARDS**

Acute toxicity (Inhalation): Category 3

Skin sensitization: Category 1

Reproductive toxicity: Category 1B

Reproductive toxicity – effects on or via lactation: Additional category

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

Specific target organ toxicity – repeated exposure: Category 2 (skin, thyroid, systemic toxicity)

**ENVIRONMENT HAZARDS**

Hazardous to the aquatic environment, short-term (acute): Category 3

Hazardous to the aquatic environment, long-term (chronic): Category 3

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

**Label elements**

Signal word: Danger

**HAZARD STATEMENT**

H331-Toxic if inhaled

H317-May cause an allergic skin reaction

H360-May damage fertility or the unborn child

H362-May cause harm to breast-fed children

H371-May cause damage to organs

H373-May cause damage to organs through prolonged or repeated exposure

H402-Harmful to aquatic life

H412-Harmful to aquatic life with long lasting effects

**PRECAUTIONARY STATEMENT****Prevention**

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Avoid contact during pregnancy and while nursing.

- Avoid release to the environment.
- Do not breathe vapors.
- Use only outdoors or in a well-ventilated area.
- Wash contaminated parts thoroughly after handling.
- Wear protective gloves.
- Contaminated work clothing should not be allowed out of the workplace.
- Use personal protective equipment as required.
- Do not eat, drink or smoke when using this product.

**Response**

- Get medical advice/attention if you feel unwell.
- IF exposed or concerned: Get medical advice/attention.
- IF exposed or concerned: Call a POISON CENTER/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 skin irritation or rash occurs: Get medical advice/attention.
- Take off contaminated clothing and wash it before reuse.

**Storage**

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

**Disposal**

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

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**Section 3. Composition/information on ingredients****Mixture/Substance selection:****Mixture**

**Ingredient name:**Potassium iodide  
**Content (%):**ca. 4.0  
**Chemical formula:**IK  
**Chemicals No, Japan:**1-439  
**CAS No.:**7681-11-0  
**MW:**166.00  
**ECNO:**231-659-4

**Ingredient name:**Iodine

**Content (%):**ca. 1.3  
**Chemical formula:**I2  
**CAS No.:**7553-56-2  
**MW:**253.809 (AW 126.904)  
**ECNO:**231-442-4

**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

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

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**Section 4. First-aid measures****Descriptions of first-aid measures****General measures**

- Get medical advice/attention if you feel unwell.

Call a POISON CENTER/doctor/physician.

**IF INHALED**

Remove person to fresh air and keep comfortable for breathing.

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

**IF ON SKIN (or hair)**

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

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.

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

Most important symptoms and effects, both acute and delayed

Specific information on symptom and effect are unknown.

Indication of any immediate medical attention and special treatment needed

Information on indication of any immediate medical attention and special treatment needed is not available.

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## Section 5. Fire-fighting measures

### Extinguishing media

#### Suitable extinguishing media

Use appropriate extinguishing media suitable for surrounding facilities.

The product is non-flammable.

#### Unsuitable extinguishing media

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 resistant or flame retardant clothing.

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

Firefighters should wear self-contained breathing apparatus with a full facepiece operated in the positive pressure mode.

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## Section 6. Accidental release measures

### Personnel precautions, protective equipment and emergency procedures

Ventilate area until material pick up is complete.

Wear proper protective equipment.

### Environmental precautions

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.

### Preventive measures for secondary accident

Collect spillage.

## Section 7. Handling and storage

### Precautions for safe handling

#### Preventive measures

(Exposure Control for handling personnel)

Do not breathe vapors.

(Protective measures against fire and explosion)

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

(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 reducing agents should not be mixed with the chemicals.

#### Advice on general occupational hygiene

Avoid contact during pregnancy and while nursing.

Wash contaminated parts thoroughly after handling.

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

Contaminated work clothing should not be allowed out of the workplace.

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. Protect from sunlight.

Store in accordance with local/national regulation.

Store locked up.

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

#### Specific end use(s)

See information in Section 7.1 and 7.2 for handling and storage recommendations. See

Section 8 for exposure controls and personal protection recommendations.

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## Section 8. Exposure controls/personal protection

### Control parameters

Control value in MHLW is not available.

#### Adopted value

(Iodine)

JSOH(1968) 0.1ppm; 1mg/m<sup>3</sup>

ACGIH(2022) TWA: 0.001ppm-I (IFV); (Thyroid & maternal repro eff; fetal & neonatal dam)

Notation···Skin

(Potassium iodide)

Adopted value in JSOH is not available.

ACGIH(2022) TWA: 0.01mg-I/m<sup>3</sup>(I) (Thyroid & maternal repro eff; fetal & neonatal dam)

Notation···Skin

**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): nitrile

Inspect before use and replace worn or damaged gloves.

Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions.

**Eye protection**

Wear safety glasses with side-shields.

Wear eye/face protection.

**Skin and body protection**

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

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

Physical state: Liquid

Color: Dark brown

Odor data is not available.

Odor threshold data is not available.

Melting point/Freezing point data is not available.

Boiling point or initial boiling point data is not available.

Boiling range data is not available.

Flammability (gases, liquids and solids): Non-flammable

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

Flash point: Non-flammable

Auto-ignition temperature data is not available.

Decomposition temperature data is not available.

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

pH 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.

Vapor pressure data is not available.

Density and/or relative density 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.

Particle characteristics data is not available.

**Other information**

Critical temperature data is not available.

Evaporation rate data is not available.

VOC data is not available.

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**Section 10. Stability and Reactivity****Reactivity**

Reactivity data is not available.

**Chemical stability**

Stable under normal storage/handling conditions.

Light sensitive.

**Possibility of hazardous reactions**

Possibility of hazardous reactions data is not available.

**Conditions to avoid**

Contact with incompatible materials.

Heating. Light.

**Incompatible materials**

Strong reducing agents

**Hazardous decomposition products**

Iodides.

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**Section 11. Toxicological Information**

The product has not been subjected to toxicological testing. Refer to the available data on the constituents.

**Information on toxicological effects****Acute toxicity****Acute toxicity (Oral)**

[Product]

Classification not possible (Insufficient data available or no data available).

[Data for components of the product]

[GHS Cat. Japan, base data]

(Iodine)

rat LD50=315mg/kg (EPA Pesticide, 2006)

**Acute toxicity (Dermal)**

[Product]

Classification not possible (Insufficient data available or no data available).

[Data for components of the product]

No data available.

**Acute toxicity (Inhalation)**

[Product]

Category 3, Toxic if inhaled

[Data for components of the product]

[GHS Cat. Japan, base data]

(Iodine)

vapor: rat LC50=35ppm/4hr (EPA Pesticide, 2006)

**Irritant properties****Skin corrosion/irritation**

[Product]

Classification not possible (Insufficient data available or no data available).

[Data for components of the product]

[GHS Cat. Japan, base data]

(Iodine)

human : skin irritation (PATTY 6th, 2012)

**Serious eye damage/irritation**

[Product]

Based on available data, the classification criteria are not met.

[Data for components of the product]

[GHS Cat. Japan, base data]

(Potassium iodide)

rabbit : slight irritation (HSDB, Access on July 2015)

(Iodine)

eyes irritation (PATTY 6th, 2012)

#### Sensitization

##### Respiratory sensitization

[Product]

Classification not possible (Insufficient data available or no data available).

[Data for components of the product]

No data available.

##### Skin sensitization

[Product]

Category 1, May cause an allergic skin reaction

[Data for components of the product]

[GHS Cat. Japan, base data]

(Iodine)

cat. 1; PATTY 6th, 2012

#### Germ cell mutagenicity

[Product]

Classification not possible (Insufficient data available or no data available).

[Data for components of the product]

No data available.

#### Carcinogenicity

[Product]

Classification not possible (Insufficient data available or no data available).

[Data for components of the product]

[ACGIH]

(Potassium iodide)

A4(2022) : Not Classifiable as a Human Carcinogen

(Iodine)

A4(2022) : Not Classifiable as a Human Carcinogen

#### Reproductive toxicity

[Product]

Category 1B, May damage fertility or the unborn child

Additional category, May cause harm to breast-fed children

[Data for components of the product]

[GHS Cat. Japan, base data]

(Potassium iodide)

cat. 1B; CICAD 72, 2009; ATSDR, 2004

cat. add; CICAD 72, 2009; ATSDR, 2004

#### Specific target organ toxicity (STOT)

##### STOT-single exposure

[Product]

Category 2, May cause damage to organs

[Data for components of the product]

[cat.1]

[GHS Cat. Japan, base data]

(Potassium iodide)

thyroid (ATSDR, 2004)

[cat.3 (respiratory tract irritation)]

[GHS Cat. Japan, base data]

(Iodine)

respiratory tract irritation (HSDB, Access on September 2014)

STOT-repeated exposure

[Product]

Category 2, May cause damage to organs through prolonged or repeated exposure

[Data for components of the product]

[cat.1]

[GHS Cat. Japan, base data]

(Potassium iodide)

thyroid, skin, systemic toxicity (CICAD 72, 2009; Medicine data, 2016(2015))

(Iodine)

thyroid (CICAD 72, 2009)

Aspiration hazard

[Product]

Classification not possible (Insufficient data available or no data available).

[Data for components of the product]

No data available.

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## Section 12. Ecological Information

The product has not been subjected to ecotoxicological testing. Refer to the available data on the constituents.

Toxicity

Aquatic toxicity

[Product]

Category 3, Harmful to aquatic life

Category 3, Harmful to aquatic life with long lasting effects

[Data for components of the product]

Hazardous to the aquatic environment, short-term (acute)

[GHS Cat. Japan, base data]

(Iodine)

Crustacea (Daphnia magna) LC50=0.16mg/L/48hr (ECETOC TR91, 2003)

Water solubility

[Data for components of the product]

(Potassium iodide)

148 g/100 g (HSDB, 2010)

(Iodine)

0.03 g/100 ml (20°C) (ICSC, 2004)

Persistence and degradability

Persistence and degradability data is not available.

Bioaccumulative potential

[Data for components of the product]

(Iodine)

log Pow=2.49 (ICSC, 2004)

Mobility in soil

Mobility in soil data is not available.



## Other adverse effects

Ozone depleting chemical data is not available.

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**Section 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.

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

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**Section 14. Transport Information**

## UN No., UN CLASS

UN Number or ID Number : Not regulated

UN Proper Shipping Name : Not regulated

Class or division (Transport hazard class) : Not regulated

Packing group : Not regulated

## IMDG Code (International Maritime Dangerous Goods Regulations)

UN Number or ID Number : Not regulated

UN Proper Shipping Name : Not regulated

Class or division (Transport hazard class) : Not regulated

Packing group : Not regulated

## IATA (Dangerous Goods Regulations)

UN Number or ID Number : Not regulated

UN Proper Shipping Name : Not regulated

Class or division (Transport hazard class) : Not regulated

Packing group : Not regulated

## Environmental hazards

Marine pollutants (yes/no) : no

## Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Noxious Liquid Substances ; Cat. Y equiv.

Potassium iodide

Non Noxious Liquid Substances ; Cat. OS

Water

## MARPOL Annex V – HME (Harmful to the Marine Environment)

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

Potassium iodide

Specific target organ toxicity – repeated exposure: cat.1

Potassium iodide; Iodine

Hazardous to the aquatic environment – short-term (acute): cat.1

Iodine

Hazardous to the aquatic environment – long-term (chronic): cat.1, 2

Iodine

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**Section 15. Regulatory Information**

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

## Labor Standards Act, Japan

Chemical substances or compounds (including alloys) causing disease (Regulation, Appended Table 1-2-4-1)

Iodine

0.05mol/L Iodine solution, JUNSEI CHEMICAL CO., LTD., 95713jis\_E-3,02/Aug/2023

#### U.S. Toxic Substances Control Act (TSCA) Inventory

Chemicals listed in TSCA Inventory

7553-56-2; 7681-11-0; 7732-18-5

All components are listed or exempted.

#### 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).

#### Chemical safety assessment

Advice on safe handling for this product can be found in sections 7 and 8 of this SDS.

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### Section 16. Other information

#### GHS classification and labelling

H331-Acute toxicity, Category 3: H331 Toxic if inhaled

H317-Skin sensitization, Category 1: H317 May cause an allergic skin reaction

H360-Reproductive toxicity, Category 1B H360 May damage fertility or the unborn child

H362-Reproductive toxicity - effects on or via lactation, Additional category : H362 May cause harm to breast-fed children

H371-STOT - single exposure, Category 2: H371 May cause damage to organs

H373-STOT - Repeated exposure, Category 2: H373 May cause damage to organs through prolonged or repeated exposure

H402-Hazardous to the aquatic environment, short-term (acute), Category 3: H402 Harmful to aquatic life

H412-Hazardous to the aquatic environment, long-term (chronic), Category 3: H412 Harmful to aquatic life with long lasting effects

#### References and sources for data

Globally Harmonized System of classification and labelling of chemicals, UN

Recommendations on the TRANSPORT OF DANGEROUS GOODS 22nd edit., 2021 UN

IMDG Code, 2020 Edition (Incorporating Amendment 40-20)

IATA Dangerous Goods Regulations (64th Edition) 2023

2020 EMERGENCY RESPONSE GUIDEBOOK (US DOT)

2023 TLVs and BEIs. (ACGIH)

JIS Z 7252 : 2019

JIS Z 7253 : 2019

2022 Recommendation on TLVs (JSOH)

Notification No. 0111-1 (January 11, 2022), Chemical Hazards Control Division, Industrial Safety and Health Department, Labour Standards Bureau, MHLW in Japan

Supplier's data/information

Chemicals safety data management system "GHS Assistant" Version 4.24 (<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 2019 Revised Edition (Ver. 2.0) (Mar. 2020, METI)

#### Abbreviations and acronyms

SDS (Safety Data Sheet)

LD50 (Lethal Dose, 50%)

LC50 (Lethal Concentration, 50%)

IARC (International Agency for Research on Cancer)

0.05mol/L Iodine solution, JUNSEI CHEMICAL CO., LTD., 95713jis\_E-3,02/Aug/2023

ACGIH (American Conference of Governmental Industrial Hygienists)

EPA (US Environmental Protection Agency)

NTP (US National Toxicology Program)

JSOH (Japan Society for Occupational Health)

EU (European Union)

EC50 (Effective Concentration, 50%)

NOEC (No Observed Effect Concentration)

BOD (Biochemical Oxygen Demand)

COD (Chemical Oxygen Demand)

BCF (Bioconcentration Factor)

anh (anhydride)

#### 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 2021).