

Safety Data Sheet

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

Product identifier:

Product name: 0.5mol/L Iodine solution
Reference number(SDS): 95710jis_J_E1-2

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

2. Hazards identification

GHS classification and label elements of the product

Classification of the substance or mixture

HEALTH HAZARDS

Skin corrosion/irritation: Category 2
Serious eye damage/eye irritation: Category 2
Skin sensitization: Category 1
Reproductive toxicity: Category 1B
Reproductive toxicity – effects on or via lactation: Additional category
Specific target organ toxicity – single exposure: Category 1(thyroid)
Specific target organ toxicity – repeated exposure: Category 1(skin, thyroid, systemic toxicity)

ENVIRONMENT HAZARDS

Hazardous to the aquatic environment (Acute): Category 2
Hazardous to the aquatic environment (Long-term): Category 2

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

Label elements



Signal word: Danger

HAZARD STATEMENT

H315–Causes skin irritation
H319–Causes serious eye irritation
H317–May cause an allergic skin reaction
H360–May damage fertility or the unborn child
H362–May cause harm to breast-fed children
H370–Causes damage to organs
H372–Causes damage to organs through prolonged or repeated exposure
H401–Toxic to aquatic life
H411–Toxic to aquatic life with long lasting effects

PRECAUTIONARY STATEMENT

Prevention

Obtain special instructions before use.

0.5mol/L Iodine solution, JUNSEI CHEMICAL CO., LTD., 95710jis_J_E1-2,06/Apr/2022

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 dust/fume/gas/mist/vapors/spray.

Wash contaminated parts thoroughly after handling.

Wear protective gloves.

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

Wear eye protection/face protection.

Use personal protective equipment as required.

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

Response

Collect spillage.

Get medical advice/attention if you feel unwell.

IF exposed or concerned: Get medical advice/attention.

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.

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 locked up.

Disposal

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

3. Composition/information on ingredients

Mixture/Substance selection:

Mixture

Ingredient name:Iodine

Content (%):ca. 12.9

Chemical formula:I₂

CAS No.:7553-56-2

MW:253.809 (AW 126.904)

ECNO:231-442-4

Ingredient name:Potassium Iodide

Content (%):ca. 40

Chemical formula:IK

Chemicals No, Japan:1-439

CAS No.:7681-11-0

MW:166.01

ECNO:231-659-4

Ingredient name:Hydrochloric acid

Content (%):ca. 0.02

Chemical formula:ClH

Chemicals No, Japan:1-215

CAS No.:7647-01-0

MW:36.46

ECNO:231-595-7

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.

4. First-aid measures

Descriptions of first-aid measures

General measures

Get medical advice/attention if you feel unwell.

Call emergency medical service.

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.

Remove and isolate contaminated clothing and shoes.

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.

5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

In case of fire, 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 full face piece operated positive pressure mode.

6. Accidental release measures

Personnel precautions, protective equipment and emergency procedures

Keep unauthorized personnel away.

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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.

Do not touch or walk through spilled material.

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.

Stop leak if you can do it without risk.

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, 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.

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

Wear protective gloves.

Wear eye protection/face protection.

Use personal protective equipment as required.

When using do not eat, drink or smoke.

Any incompatibilities

Reducing agents, Combustible substances 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.

8. Exposure controls/personal protection

Control parameters

Control value in MHLW is not available.

Adopted value

(Iodine)

JSOH(1968) 0.1ppm; 1mg/m³

ACGIH(2008) TWA: 0.01ppm(IFV);

STEL: 0.1ppm(V) (Hypothyroidism; URT irr)

(Hydrochloric acid)

JSOH(2014) (ceiling) 2ppm; 3.0mg/m³

ACGIH(2002) STEL: C 2ppm (URT irr)

(Potassium Iodide)

Adopted value in JSOH is not available.

ACGIH(2008) TWA: 0.01ppm(IFV) (Hypothyroidism; URT irr)

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.

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

Eye protection

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: 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.

Vapor density data is not available.

VOC data is not available.

Evaporation rate 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.

Critical temperature data is not available.

Particle characteristics data is not available.

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.

Heat. Light.

Incompatible materials

Reducing agents. Combustible substances

Hazardous decomposition products

Carbon oxides, Halides.

11. Toxicological Information

Information on toxicological effects

Acute toxicity

Acute toxicity (Oral)

[GHS Cat. Japan, base data]

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

(Hydrochloric acid) rat LD50=238mg/kg (SIDS, 2009)

Acute toxicity (Inhalation)

[GHS Cat. Japan, base data]

(Iodine)

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

(Hydrochloric acid)

mist: rat LC50=0.42mg/L/4hr (SIDS, 2009)

gas: rat LC50=1411ppm/4hr (SIDS, 2009)

Labor standard law, Japan; Toxic

Hydrochloric acid; Iodine

Irritant properties

Skin corrosion/irritation

[GHS Cat. Japan, base data]

(Iodine) human : skin irritation (PATTY 6th, 2012)

(Hydrochloric acid) rabbit/mouse/rat/human : corrosive (SIDS, 2009)

Serious eye damage/irritation

[GHS Cat. Japan, base data]

(Iodine) eyes irritation (PATTY 6th, 2012)

(Potassium Iodide) rabbit : only slight reaction (HSDB, 2015)

(Hydrochloric acid) rabbit : corrosive (SIDS, 2002)

Sensitization

Skin sensitization

[GHS Cat. Japan, base data]

(Iodine) cat. 1; PATTY 6th, 2012

Mutagenic effects data is not available.

Carcinogenicity

[IARC]

(Hydrochloric acid) Group 3 : Not classifiable as to its carcinogenicity to humans

[ACGIH]

(Iodine) A4(2008) : Not Classifiable as a Human Carcinogen

(Potassium Iodide) A4(2008) : Not Classifiable as a Human Carcinogen

(Hydrochloric acid) A4(2002) : Not Classifiable as a Human Carcinogen

Reproductive toxicity

[GHS Cat. Japan, base data]

(Potassium Iodide)

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

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

STOT

STOT-single exposure

[cat.1]

[GHS Cat. Japan, base data]

(Potassium Iodide) thyroid gland (ATSDR, 2004)

[cat.3 (resp. irrit.)]

[GHS Cat. Japan, base data]

(Iodine) respiratory tract irritation (HSDB, 2014)

STOT-repeated exposure

[cat.1]

[GHS Cat. Japan, base data]

(Iodine) thyroid gland (CICAD 72, 2009)

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

Aspiration hazard data is not available.

Information on other hazards

Data on the preparation itself is not available.

12. Ecological Information

Ecotoxicity

Aquatic toxicity

H401-Toxic to aquatic life

H411-Toxic to aquatic life with long lasting effects

Hazardous to the aquatic environment (Acute)

[GHS Cat. Japan, base data]

(Iodine)

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

(Hydrochloric acid)

Crustacea (Daphnia magna) EC50=0.492mg/L/48hr (SIDS, 2005)

Water solubility

(Iodine) 0.03 g/100 ml (20°C) (ICSC, 2004)

(Hydrochloric acid) 67 g/100 ml (30°C) (ICSC, 2000)

(Potassium Iodide) 148 g/100 g (HSDB, 2010)

Persistence and degradability

Persistence and degradability data is not available.

Bioaccumulative potential

(Iodine) log Pow=2.49 (ICSC, 2004)

(Hydrochloric acid) log Pow=0.25 (ICSC, 2000)

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.

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.

14. Transport Information**UN No., UN CLASS**

UN No. or ID No.: 3082

UN Proper Shipping Name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

Class or division (Transport hazard class) : 9

Packing group : III

ERG GUIDE No.: 171

IMDG Code (International Maritime Dangerous Goods Regulations)

UN No.: 3082

Proper Shipping Name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

Class or division : 9

Packing group : III

IATA Dangerous Goods Regulations

UN No.: 3082

Proper Shipping Name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

Class or division : 9

Hazard labels : Miscellaneous & Environmentally hazardous

Packing group : III

Environmental hazards**MARPOL Annex III – Prevention of pollution by harmful substances**

Marine pollutants (yes/no) : yes

MARPOL Annex V – Prevention of pollution by garbage discharge

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

Potassium Iodide

Specific target organ toxicity – repeated exposure: cat.1

Iodine; Potassium Iodide

Hazardous to the aquatic environment – long-term hazard: cat.1, 2

Iodine

Maritime transport in bulk according to IMO instruments

Noxious Liquid ; Cat. Y equiv.

Potassium Iodide(YE-24)

Noxious Liquid ; Cat. Z

Hydrochloric acid(Z-33)

Non Noxious Liquid ; Cat. OS

Water(OS-18)

15. Regulatory Information

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

Chemicals listed in TSCA Inventory

Iodine; Hydrochloric acid; Potassium Iodide; 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.

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.

16. Other information

GHS classification and labelling

H315–Skin Irrit. 2: H315 Causes skin irritation

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

H317–Skin Sens. 1: H317 May cause an allergic skin reaction

H360–Repr. 1B: H360 May damage fertility or the unborn child

H362–Lact.: H362 May cause harm to breast-fed children

H370–STOT SE 1: H370 Causes damage to organs

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

H401–Aquatic Acute 2: H401 Toxic to aquatic life

H411–Aquatic Chronic 2: H411 Toxic to aquatic life with long lasting effects

Reference Book

Globally Harmonized System of classification and labelling of chemicals, UN

Recommendations on the TRANSPORT OF DANGEROUS GOODS 21th edit., 2019 UN

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

IATA Dangerous Goods Regulations (62nd Edition) 2021

2020 EMERGENCY RESPONSE GUIDEBOOK (US DOT)

2021 TLVs and BEIs. (ACGIH)

JIS Z 7252 : 2019

JIS Z 7253 : 2019

2021 Recommendation on TLVs (JSOH)

Supplier's data/information

Chemicals safety data management system "GHS Assistant" Version 4.16 (<https://www.asahi-ghs.com/>)

NITE Chemical Risk Information Platform "NITE-CHRIP"

(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)

Definitions and Abbreviations

SDS (Safety Data Sheet)

LD50 (Lethal Dose, 50%)

LC50 (Lethal Concentration, 50%)

IARC (International Agency for Research on Cancer)

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 2020).