



## Safety Data Sheet

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

#### Product identifier:

Product name: Potassium iodide-sodium azide solution  
SDS No. : E0199E-2

#### Details of the supplier of the safety data sheet

Manufacturer/Supplier: KISHIDA CHEMICAL CO., LTD.  
Address: 3-1, Honmachibashi, Chuo-ku, Osaka, JAPAN  
Division: Safety Management Dept. of Chemicals  
Telephone number: +81-6-6946-8061  
FAX: +81-6-6946-1607  
e-mail address: kagakuhinanzenkanri@kishida.co.jp

### 2. Hazards identification

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

#### Classification of the substance or mixture

##### HEALTH HAZARDS

Acute toxicity (Oral): Category 3  
Acute toxicity (Dermal): Category 3  
Skin corrosion/irritation: Category 1  
Serious eye damage/eye irritation: Category 1  
Reproductive toxicity: Category 1B  
Reproductive toxicity – effects on or via lactation: Additional category  
Specific target organ toxicity – single exposure: Category 1(respiratory system)  
Specific target organ toxicity – single exposure: Category 2(thyroid gland)  
Specific target organ toxicity – repeated exposure: Category 1(respiratory system)  
Specific target organ toxicity – repeated exposure: Category 2(skin; thyroid gland; systemic toxicity)  
Aspiration hazard: Category 1

##### ENVIRONMENT HAZARDS

Hazardous to the aquatic environment (Acute): Category 3  
Hazardous to the aquatic environment (Long-term): Category 3

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

#### Label elements



Signal word: Danger

#### HAZARD STATEMENT

Toxic if swallowed  
Toxic in contact with skin  
Causes severe skin burns and eye damage  
Causes serious eye damage  
May damage fertility or the unborn child  
May cause harm to breast-fed children  
Causes damage to organs after single exposure(respiratory system)  
May cause damage to organs after single exposure(thyroid gland)  
Causes damage to organs through prolonged or repeated exposure(respiratory system)



May cause damage to organs through prolonged or repeated exposure(skin; thyroid gland; systemic toxicity)

May be fatal if swallowed and enters airways

Harmful to aquatic life

Harmful to aquatic life with long lasting effects

#### PRECAUTIONARY STATEMENT

##### Prevention

Avoid release to the environment.

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

Wash contaminated parts thoroughly after handling.

Wear protective gloves, protective clothing or face protection.

Wear eye protection/face protection.

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.

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

IF exposed or concerned: 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.

Wash contaminated clothing before reuse.

Take off immediately all 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: Immediately call a POISON CENTER or doctor/physician.

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

##### Disposal

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

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### 3. Composition/information on ingredients

#### Mixture/Substance selection:

##### Mixture

Ingredient name:Potassium iodide

Content (%):9.9

Chemical formula:IK

Chemicals No, Japan:1-439

CAS No.:7681-11-0

MW:166.00

ECNO:231-659-4

Ingredient name:Sodium azide

Content (%):0.66

Chemical formula:NaN<sub>3</sub>

Chemicals No, Japan:1-482

CAS No.:26628-22-8

MW:65.01

ECNO:247-852-1

Ingredient name:Potassium hydroxide

Content (%):39

Chemical formula:KOH



Chemicals No, Japan:1-369  
CAS No.:1310-58-3  
MW:56.1  
ECNO:215-181-3

Ingredient name:Water  
Content (%):50  
Chemical formula:H<sub>2</sub>O  
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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#### 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.

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.

Immediately call a POISON CENTER or doctor/physician.

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#### 5. Fire-fighting measures

##### Extinguishing media

###### Suitable extinguishing media

Use appropriate extinguishing media suitable for surrounding facilities.

###### 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.

##### 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.



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## 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

Prevent spills from entering sewers, watercourses or low areas.

### 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.

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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.

(Exhaust/ventilator)

Exhaust/ventilator should be available.

(Safety treatments)

Avoid contact with skin.

Avoid contact with eyes.

#### Safety Measures

Wear protective gloves, protective clothing or face protection.

Wear eye protection/face protection.

When using do not eat, drink or smoke.

#### Any incompatibilities

See "10.Stability and Reactivity"

#### Advice on general occupational hygiene

Wash contaminated parts thoroughly after handling.

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

Take off immediately all contaminated clothing and wash it before reuse.

### Storage

#### Conditions for safe storage

Keep container tightly closed.

Store in a cool, dry place. Do not store in direct sunlight.

Keep under lock and key.

#### Container and packaging materials for safe handling

Polyethylene

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## 8. Exposure controls/personal protection

### Control parameters

#### Adopted value

(Potassium iodide)

ACGIH(2007) TWA: 0.01ppm(IFV) (Hypothyroidism; URT irr)

(Sodium azide)

ACGIH(1992) STEL: C (as Sodium azide) 0.29mg/m<sup>3</sup>; (as Hydrazoic acid vapor) 0.11ppm (Card impair; lung dam)

(Potassium hydroxide)



ACGIH(1992) STEL: C 2mg/m<sup>3</sup> (URT, eye & skin 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.

Eye protection

Wear eye/face protection.

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## 9. Physical and Chemical Properties

Information on basic physical and chemical properties

Physical state: Liquid

Color: Colorless

Odor: None

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) data is not available.

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

Flash point data is not available.

Auto-ignition temperature data is not available.

Decomposition temperature data is not available.

pH data is not available.

Kinematic viscosity data is not available.

Solubility:

Solubility in water: Soluble

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

Vapor pressure data is not available.

Density and/or relative density: 1.52

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

No Particle characteristics data is not available.

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## 10. Stability and Reactivity

Reactivity

Not available.

Chemical stability

Stable under normal storage/handling conditions.

Possibility of hazardous reactions

(Sodium azide)

Decomposes on heating above 275° C . This produces toxic fumes. This generates fire and explosion hazard. Reacts with copper, lead, silver, mercury and carbon disulfide. This produces particularly shock-sensitive compounds. Reacts with acids. This produces toxic and explosive hydrogen azide. (ICSC 0950)

(Potassium hydroxide)

The solution in water is a strong base. It reacts violently with acid and is corrosive to metals such as aluminium, tin, lead and zinc. This produces a combustible/explosive gas (hydrogen). Reacts with ammonium salts. This produces ammonia. This generates fire hazard.



Contact with moisture and water may generate heat. (ICSC 0357)

Conditions to avoid

Contact with incompatible materials.

Contact with fire source.

Incompatible materials

Acids, Oxidizing agents, Copper, Lead, Silver, Mercury, Carbon disulfide, Metals, Ammonium salts

Hazardous decomposition products

Hydrogen azide, Hydrogen, Ammonia, Iodine compounds

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## 11. Toxicological Information

### Information on toxicological effects

#### Acute toxicity

##### Acute toxicity (Oral)

[GHS Cat. Japan, base data]

(Sodium azide)

rat LD50=45mg/kg (DFGOT vol.20, 2003)

(Potassium hydroxide)

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

##### Acute toxicity (Dermal)

[GHS Cat. Japan, base data]

(Sodium azide)

rabbit LD50=20mg/kg (ACGIH, 2001)

#### Irritant properties

##### Skin corrosion/irritation

[GHS Cat. Japan, base data]

(Sodium azide)

rabbit corrosive (DFGOT vol.20, 2003)

(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 iodide)

rabbit only slight reaction (HSDB, 2015)

(Sodium azide)

Skin Corr. cat. 1

(Potassium hydroxide)

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

Allergenic and sensitizing effects data is not available.

Mutagenic effects data is not available.

#### Carcinogenicity

(Potassium iodide)

ACGIH-A4 (2007) : Not Classifiable as a Human Carcinogen

(Sodium azide)

ACGIH-A4(1992) : Not Classifiable as a Human Carcinogen

#### Reproductive toxicity

[GHS Cat. Japan, base data]

(Potassium iodide)

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

(Potassium iodide)

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

#### STOT

STOT-single exposure



[cat.1]

[GHS Cat. Japan, base data]

(Potassium iodide)

thyroid gland (ATSDR, 2004)

(Potassium hydroxide)

respiratory system (ACGIH 7th, 2001; SIDS, 2004; PATTY 6th, 2012)

STOT-repeated exposure

[cat.1]

[GHS Cat. Japan, base data]

(Potassium iodide)

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

(Potassium hydroxide)

respiratory system (ACGIH 7th, 2001)

Aspiration hazard

[cat.1]

[GHS Cat. Japan, base data]

(Potassium hydroxide)

cat. 1; ACGIH 7th, 2001; SIDS, 2004

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## 12. Ecological Information

Ecotoxicity

Aquatic toxicity

Harmful to aquatic life

Harmful to aquatic life with long lasting effects

Hazardous to the aquatic environment (Acute)

[GHS Cat. Japan, base data]

(Sodium azide)

Algae (*Pseudokirchneriella subcapitata*) ErC50=0.348mg/L/96hr (Aquire, 2010)

Water solubility

(Potassium hydroxide)

110 g/100 ml (25°C) (ICSC, 2010)

(Sodium azide)

good (41.7 g/100 ml, 17°C) (ICSC, 2014)

(Potassium iodide)

148 g/100 g (HSDB, 2010)

Persistence and degradability

(Sodium azide)

Degradation measured by HPLC : 1% (Registered chemicals data check & review)

Bioaccumulative potential

(Sodium azide)

log Pow <= 0.3 (Check & Review, Japan)

Mobility in soil

Mobility in soil data is not available.

Other adverse effects

Ozone depleting chemical data 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

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

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



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**14. Transport Information**

UN No. or ID No.: 2922  
UN Proper Shipping Name :  
CORROSIVE LIQUID, TOXIC, N.O.S.  
Class or division (Transport hazard class) : 8  
Subsidiary hazard(s) : 6.1  
Packing group : III  
ERG GUIDE No.: 154  
Special provisions No.: 223; 274

**IMDG Code (International Maritime Dangerous Goods Regulations)**

UN No.: 2922  
Proper Shipping Name :  
CORROSIVE LIQUID, TOXIC, N.O.S.  
Class or division : 8  
Subsidiary hazard(s) : 6.1  
Packing group : III  
Special provisions No.: 223; 274

**IATA Dangerous Goods Regulations**

UN No.: 2922  
Proper Shipping Name :  
CORROSIVE LIQUID, TOXIC, N.O.S.  
Class or division : 8  
Subsidiary hazard(s) : 6.1  
Hazard labels : Corrosive & Toxic  
Packing group : III  
Special provisions No.: A3; A803

**Environmental hazards**

MARPOL Annex III – Prevention of pollution by harmful substances  
Marine pollutants (yes/no) : no  
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  
Potassium hydroxide

**Maritime transport in bulk according to IMO instruments**

Noxious Liquid ; Cat. Y  
Potassium hydroxide  
Noxious Liquid ; Cat. Y equiv.  
Potassium iodide  
Non Noxious Liquid ; Cat. OS  
Water

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**15. Regulatory Information**

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

Chemicals listed in TSCA Inventory

Potassium hydroxide; Potassium iodide; Water; Sodium azide

Other regulatory information

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





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**16. Other information****GHS classification and labelling**

Acute Tox. 3: H301 Toxic if swallowed  
Acute Tox. 3: H311 Toxic in contact with skin  
Skin Corr. 1: H314 Causes severe skin burns and eye damage  
Eye Dam. 1: H318 Causes serious eye damage  
Repr. 1B: H360 May damage fertility or the unborn child  
Lact.: H362 May cause harm to breast-fed children  
STOT SE 1: H370 Causes damage to organs after single exposure  
STOT RE 1: H372 Causes damage to organs through prolonged or repeated exposure  
Asp. Tox. 1: H304 May be fatal if swallowed and enters airways  
Aquatic Acute 3: H402 Harmful to aquatic life  
Aquatic Chronic 3: H412 Harmful to aquatic life with long lasting effects

**Reference Book**

Globally Harmonized System of classification and labelling of chemicals, (7th revised edition, 2017), 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)  
2020 TLVs and BEIs. (ACGIH)  
<http://monographs.iarc.fr/ENG/Classification/index.php>  
Supplier's data/information

**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 2019).