Date of issue: 31/08/2017
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Safety Data Sheet

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

Product identifier:

Product name: 0.05mol/L(N/10)-Iodine solution

SDS No. : A0032E-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 (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 gland)
Specific target organ toxicity - repeated exposure: Category 2(skin; thyroid gland; systemic toxicity)

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 inhaled
May cause an allergic skin reaction
May damage fertility or the unborn child
May cause harm to breast-fed children
May cause damage to organs after single exposure(thyroid gland)
May cause damage to organs through prolonged or repeated exposure(skin; thyroid gland; systemic toxicity)
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.
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.
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 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.

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 (%):3.8
Chemical formula:IK
Chemicals No, Japan:1-439
CAS No.:7681-11-0
MW:166.00
ECNO:231-659-4

Ingredient name:Hydrochloric acid
Content (%):0.010
Chemical formula:ClH
Chemicals No, Japan:1-215
CAS No.:7647-01-0
MW:36.5
ECNO:231-595-7

Ingredient name:Iodine
Content (%):1.2
Chemical formula:I2
CAS No.:7553-56-2
MW:253.81
ECNO:231-442-4

Ingredient name:Water
Content (%):95
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 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.
Call a POISON CENTER or doctor/physician if you feel unwell.

5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

Use appropriate extinguishing media suitable for surrounding facilities.
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 peace operated positive pressure mode.

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.

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

Use only outdoors or in a well-ventilated area.

Wear protective gloves, protective clothing or 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.

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

Keep container tightly closed.

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

Container and packaging materials for safe handling

Glass

8. Exposure controls/personal protection

Control parameters

Adopted value

(Iodine)

ACGIH(2007) TWA: 0.01ppm(IFV);

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

(Hydrochloric acid)

ACGIH(2000) STEL: C 2ppm (URT irr)

(Potassium Iodide)

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

OSHA-PEL

(Hydrochloric acid)

STEL: C 5ppm, 7mg/m3

(Iodine)

STEL: C 0.1ppm, 1mg/m3

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.

9. Physical and Chemical Properties

Information on basic physical and chemical properties

Physical state: Liquid

Color: Brown

Odor: Practically irritating odour

pH data is not available.

Boiling point or initial boiling point data is not available.

Boiling range data is not available.

Melting point/Freezing point data is not available.

Decomposition temperature data is not available.

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

Flash point data is not available.

Auto-ignition temperature data is not available.

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

Vapor pressure data is not available.

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

Density and/or relative density: 1.04g/cm3

Kinematic viscosity data is not available.

Solubility:

Solubility in water: Soluble

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

No Particle characteristics data is not available.

10. Stability and Reactivity

Reactivity

Not available.

Chemical stability

Stable under normal storage/handling conditions.

Possibility of hazardous reactions

(Iodine)

Decomposes on heating. This produces toxic fumes. The substance is a strong oxidant. It reacts with combustible and reducing materials. Reacts violently with metal powders, antimony, ammonia, acetaldehyde and acetylene. This generates fire and explosion hazard. (ICSC 0167)

(Hydrochloric acid)

The gas is heavier than air and may accumulate in lowered spaces causing a deficiency of oxygen.

The solution in water is a strong acid. It reacts violently with bases and is corrosive.

Reacts violently with oxidants. This produces toxic gas (chlorine). Attacks many metals in the presence of water. This produces flammable/explosive gas (hydrogen). (ICSC 0163)

Conditions to avoid

Contact with incompatible materials.

Contact with fire source.

Incompatible materials

Bases, Oxidizing agents, Reducing agents, Combustible materials, Metals, Antimony, Ammonia, Acetaldehyde, Acetylene

Hazardous decomposition products
Iodine compounds, Chlorine, Hydrogen

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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)
gas: rat LC50=1411ppm/4hr (SIDS, 2009)
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)
(Hydrochloric acid)
rabbit corrosive (SIDS, 2002)
(Potassium Iodide)
rabbit only slight reaction (HSDB, 2015)
Sensitization
Skin sensitization
[GHS Cat. Japan, base data]
(Iodine)
cat. 1; PATTY 6th, 2012
Mutagenic effects data is not available.
Carcinogenicity
(Hydrochloric acid)
IARC-Gr.3 : Not Classifiable as a Human Carcinogen
(Potassium Iodide)
ACGIH-A4 (2007) : Not Classifiable as a Human Carcinogen
(Hydrochloric acid)
ACGIH-A4(2000) : Not Classifiable as a Human Carcinogen
(Iodine)
ACGIH-A4 (2007) : 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)

[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]

(Potassium Iodide)

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

(Iodine)

thyroid gland (CICAD 72, 2009)

Aspiration hazard data is not available.

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12. Ecological Information

Ecotoxicity

Aquatic toxicity

Harmful to aquatic life

Harmful to aquatic life with long lasting effects

Aquatic acute toxicity component(s) data

[GHS Cat. Japan, base data]

(Hydrochloric acid)

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

(Iodine)

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

Water solubility

(Potassium Iodide)

148 g/100 g (HSDB, 2010)

(Hydrochloric acid)

67 g/100 ml (30℃) (ICSC, 2000)

(Iodine)

0.03 g/100 ml (20℃) (ICSC, 2004)

Persistence and degradability

Persistence and degradability data is not available.

Bioaccumulative potential

(Hydrochloric acid)

log Pow=0.25 (ICSC, 2000)

(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.

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

Not applicable to UN No., UN CLASS

Not applicable to IMDG Code

Not applicable to IATA Dangerous Goods Regulations

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

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

Noxious Liquid ; Cat. Y equiv.

Potassium Iodide

Noxious Liquid ; Cat. Z

Hydrochloric acid

Non Noxious Liquid ; Cat. OS

Water

15. Regulatory Information

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

US major regulations

Chemicals listed in TSCA Inventory

Iodine; Hydrochloric acid; Potassium Iodide; Water

Other regulatory information

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

16. Other information

GHS classification and labelling

Acute Tox. 3: H331 Toxic if inhaled

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

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

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

STOT SE 2: H371 May cause damage to organs after single exposure

STOT RE 2: H373 May cause damage to organs through prolonged or repeated exposure

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, (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
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 2018).