Date of issue: 29/06/2017
Date of revision: 11/03/2020

Safety Data Sheet

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

Product identifier:
- Product name: Iodine
- SDS No. : 4001E-4

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 4
- Acute toxicity (Inhalation): Category 1
- Skin corrosion/irritation: Category 2
- Serious eye damage/eye irritation: Category 2
- Skin sensitization: Category 1
- Specific target organ toxicity - single exposure: Category 3 (Respiratory tract irritation)
- Specific target organ toxicity - repeated exposure: Category 1(thyroid/thyroid gland)

ENVIRONMENT HAZARDS
- Hazardous to the aquatic environment (Acute): Category 1
- Hazardous to the aquatic environment (Long-term): Category 1

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

Label elements

Signal word: Danger

HAZARD STATEMENT
- Harmful if swallowed
- Fatal if inhaled
- Causes skin irritation
- Causes serious eye irritation
- May cause an allergic skin reaction
- May cause respiratory irritation
- Causes damage to organs through prolonged or repeated exposure(thyroid/thyroid gland)
- Very toxic to aquatic life
- Very toxic to aquatic life with long lasting effects

PRECAUTIONARY STATEMENT

Prevention
- Avoid release to the environment.
- Do not breathe dust/fume/gas/mist/vapors/spray.
- In case of inadequate ventilation wear respiratory protection. (as specified by the

manufacturer/supplier or the competent authority.)
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.
Wear eye protection/face protection.
Do not eat, drink or smoke when using this product.

Response

Collect spillage.
Get medical advice/attention if you feel unwell.
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.
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: Call a POISON CENTER or doctor/physician if you feel unwell.
IF SWALLOWED: Rinse mouth.

Storage

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

Disposal

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

3. Composition/information on ingredients

Mixture/Substance selection:

Substance

Ingredient name:Iodine
Content (%):99(min)
Chemical formula:I2
CAS No.:7553-56-2
MW:253.81
ECNO:231-442-4

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

Sweep up, place in a bag and hold for waste disposal.

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.

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.
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.
Keep under lock and key.

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)

OSHA-PEL

IodineSTEL: 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: Board, lobation, granulation crystals
Color: Black violet
Odor: Pungent odor
pH data is not available.
Boiling point or initial boiling point: 184℃
Boiling range data is not available.
Melting point/Freezing point: 114℃
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: 0.04 kPa (25 ℃)
Relative vapor density (Air=1): 8.8
Relative density of the Vapor/air - mixture at 20℃ (Air = 1): 1
Density and/or relative density: 4.9
Kinematic viscosity data is not available.
Solubility:

Solubility in water: 0.03 g/100 ml (20 ℃)
n-Octanol/water partition coefficient: log Pow2.49
No Particle characteristics data is not available.

10. Stability and Reactivity

Reactivity
Not available.
Chemical stability
Sublimation material.
Possibility of hazardous reactions
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)
Conditions to avoid
Contact with incompatible materials.
Contact with fire source.
Incompatible materials
Reducing agents, Combustible materials, Metal powders, Antimony, Ammonia, Acetaldehyde, Acetylene
Hazardous decomposition products
Iodine compounds

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)
Acute toxicity (Inhalation)
[GHS Cat. Japan, base data]
(Iodine)
vapor: rat LC50=35ppm/4hr (EPA Pesticide, 2006)
Irritant properties
Skin corrosion/irritation
[GHS Cat. Japan, base data]
(Iodine)
human skin irritation (PATTY 6th, 2012)
Serious eye damage/irritation
[GHS Cat. Japan, base data]
(Iodine)
eyes irritation (PATTY 6th, 2012)
Sensitization
Skin sensitization
[GHS Cat. Japan, base data]
(Iodine)
cat. 1; PATTY 6th, 2012
Mutagenic effects data is not available.
Carcinogenicity
(Iodine)
ACGIH-A4 (2007) : Not Classifiable as a Human Carcinogen

Reproductive toxicity data is not available.
STOT
STOT-single exposure
[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)
Aspiration hazard data is not available.

12. Ecological Information

Ecotoxicity
Aquatic toxicity
Very toxic to aquatic life
Very toxic to aquatic life with long lasting effects
Aquatic acute toxicity component(s) data
[GHS Cat. Japan, base data]
(Iodine)
Crustacea (Daphnia magna) LC50=0.16mg/L/48hr (ECETOC TR91, 2003)
Water solubility
(Iodine)
0.03 g/100 ml (20℃) (ICSC, 2004)
Persistence and degradability
Persistence and degradability data is not available.
Bioaccumulative potential
(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

UN No.: 3495
Proper Shipping Name :
IODINE
Class or division : 8
Subsidiary hazard(s) : 6.1
Packing group : III
ERG GUIDE No.: 154

Special provisions No.: 279

IMDG Code (International Maritime Dangerous Goods Regulations)

UN No.: 3495

Proper Shipping Name :

IODINE

Class or division : 8

Subsidiary hazard(s) : 6.1

Packing group : III

Special provisions No.: 279

IATA Dangerous Goods Regulations

UN No.: 3495

Proper Shipping Name :

IODINE

Class or division : 8

Subsidiary hazard(s) : 6.1

Hazard labels : Corrosive & Toxic

Packing group : III

Special provisions No.: A113; A803

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

Specific target organ toxicity – repeated exposure: cat.1

Iodine

Hazardous to the aquatic environment – acute hazard: cat.1

Iodine

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

Iodine

15. Regulatory Information

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

US major regulations

Chemicals listed in TSCA Inventory

Iodine

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. 4: H302 Harmful if swallowed

Acute Tox. 1: H330 Fatal if inhaled

Skin Irrit. 2: H315 Causes skin irritation

Eye Irrit. 2: H319 Causes serious eye irritation

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

STOT SE 3: H335 May cause respiratory irritation

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

Aquatic Acute 1: H400 Very toxic to aquatic life

Aquatic Chronic 1: H410 Very toxic 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).