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Safety Data Sheet

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

Product identifier:

Product name: 0.005mol/L(N/100)-Mercury(II)chloride solution

SDS No. : A0039E-3

Relevant identified uses of the substance or mixture and uses advised against

Research and Development

Details of the supplier of the safety data sheet

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

Section 2. Hazards identification

GHS classification and label elements of the product

Classification of the substance or mixture

ENVIRONMENT HAZARDS

Hazardous to the aquatic environment (Acute): Category 2

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

Label elements

No GHS label element

No Signal word

HAZARD STATEMENT

Toxic to aquatic life

Harmful to aquatic life with long lasting effects

PRECAUTIONARY STATEMENT

Prevention

Avoid release to the environment.

Disposal

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

Section 3. Composition/information on ingredients

Mixture/Substance selection:

Mixture

Ingredient name:Hydrochloric acid

Content (%):0.17

Chemical formula:ClH

Chemicals No, Japan:1-215

CAS No.:7647-01-0

MW:36.5

ECNO:231-595-7

Ingredient name:Mercury(II) chloride

Content (%):0.14

Chemical formula:HgCl2

Chemicals No, Japan:1-226
CAS No.:7487-94-7
MW:271.50
ECNO:231-299-8

Ingredient name:Water
Content (%):99
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. The content of products may exceed the figures shown above.

Section 4. First-aid measures

Descriptions of first-aid measures

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.
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.

Section 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 resistant or flame 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.

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

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.

Section 7. Handling and storage

Precautions for safe handling

Preventive measures

(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

Wear protective gloves, protective clothing or face protection.

When using do not eat, drink or smoke.

Any incompatibilities

See "10.Stability and Reactivity"

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

Polyethylene

Section 8. Exposure controls/personal protection

Control parameters

Adopted value

(Hydrochloric acid)

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

(Mercury(II) chloride)

ACGIH(1994) TWA: 0.025mg-Hg/m3 (CNS impair; kidney dam)

Notation

(Mercury(II) chloride)

Skin

OSHA-PEL

(Hydrochloric acid)

STEL: C 5ppm, 7mg/m3

(Mercury(II) chloride)

STEL: C 0.1mg-Hg/m3(elemental and inorganic compounds)
TWA: 0.01mg-Hg/m3; STEL: C 0.04mg-Hg/m3(Organo(alkyl mercury))

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.

Section 9. Physical and Chemical Properties

Information on basic physical and chemical properties

Physical state: Liquid
Color: Colorless, Clear
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: 1.0
Relative vapor density (Air=1) data is not available.
Particle characteristics data is not available.

Section 10. Stability and Reactivity

Reactivity

Not available.

Chemical stability

Stable under normal storage/handling conditions.

Possibility of hazardous reactions

(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)
(Mercury(II) chloride)
Decomposes on heating and under the influence of light. This produces toxic fumes of

mercury and chlorine. Reacts with metals such as aluminium, copper, iron and zinc. (ICSC 0979)

Conditions to avoid

Contact with incompatible materials.
Contact with fire source.

Incompatible materials

Bases, Oxidizing agents, Metals

Hazardous decomposition products

Mercury, Chlorine, Hydrogen

Section 11. Toxicological Information

Information on toxicological effects

Acute toxicity

Acute toxicity (Oral)

[Data for components of the product]

[GHS Cat. Japan, base data]

(Hydrochloric acid)

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

(Mercury(II) chloride)

rat LD50=35-105mg/kg (ATSDR, 1999)

Acute toxicity (Inhalation)

[Data for components of the product]

[GHS Cat. Japan, base data]

(Hydrochloric acid)

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

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

Irritant properties

Skin corrosion/irritation

[Data for components of the product]

[GHS Cat. Japan, base data]

(Hydrochloric acid)

rabbit/mouse/rat/human corrosive (SIDS, 2009)

(Mercury(II) chloride)

irritant (ATSDR, 1999)

Serious eye damage/irritation

[Data for components of the product]

[GHS Cat. Japan, base data]

(Hydrochloric acid)

rabbit corrosive (SIDS, 2002)

(Mercury(II) chloride)

irritant (ATSDR, 1999)

Sensitization

Respiratory sensitization

[Data for components of the product]

[GHS Cat. Japan, base data]

(Hydrochloric acid)

cat. 1; Occupational/Environmental Allergy Society, Japan

Skin sensitization

[Data for components of the product]

[GHS Cat. Japan, base data]

(Mercury(II) chloride)

cat. 1; JSOH journal vol. 53, 2011

Mutagenic effects data is not available.

Carcinogenicity
[IARC]
(Hydrochloric acid)
Group 3 : Not classifiable as to its carcinogenicity to humans
(Mercury(II) chloride)
Group 3 : Not classifiable as to its carcinogenicity to humans
[ACGIH]
(Hydrochloric acid)
A4(2002) : Not Classifiable as a Human Carcinogen
(Mercury(II) chloride)
A4(as Hg)(1994) : Not Classifiable as a Human Carcinogen
Reproductive toxicity
[Data for components of the product]
[GHS Cat. Japan, base data]
(Mercury(II) chloride)
cat. 1B; JECFA 1155, 2011
Specific target organ toxicity (STOT)
STOT-single exposure data is not available.
STOT-repeated exposure data is not available.
Aspiration hazard data is not available.

Section 12. Ecological Information
Toxicity
Aquatic toxicity
[Data for components of the product]
Hazardous to the aquatic environment (Acute)
[GHS Cat. Japan, base data]
(Hydrochloric acid)
Crustacea (Daphnia magna) EC50=0.492mg/L/48hr (SIDS, 2005)
(Mercury(II) chloride)
Crustacea (Daphnia magna) LC50=(0.0018-0.0043)mg/L/48hr (EHC86, 1989)
Hazardous to the aquatic environment (Long-term)
[GHS Cat. Japan, base data]
(Mercury(II) chloride)
Crustacea (Daphnia magna) NOEC=0.003mg/L/21days (AQUIRE, 2012)
Water solubility
(Hydrochloric acid)
67 g/100 ml (30℃) (ICSC, 2000)
(Mercury(II) chloride)
moderate (6.9 g/100 ml, 20℃) (ICSC, 2014)
Persistence and degradability
Persistence and degradability data is not available.
Bioaccumulative potential
[Data for components of the product]
(Hydrochloric acid)
log Pow=0.25 (ICSC, 2000)
(Mercury(II) chloride)
log Pow=0.1 (ICSC, 2014); BCF=4620 (Check & Review, Japan)
Mobility in soil
Mobility in soil data is not available.
Other adverse effects
Ozone depleting chemical data is not available.

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.

Section 14. Transport Information

UN No. or ID No.: Not applicable

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

Maritime transport in bulk according to IMO instruments

Noxious Liquid ; Cat. Z

Hydrochloric acid

Non Noxious Liquid ; Cat. OS

Water

Section 15. Regulatory Information

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

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

Chemicals listed in TSCA Inventory

Mercury(II) chloride; Hydrochloric acid; Water

Other regulatory information

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

Section 16. Other information

GHS classification and labelling

Hazardous to the aquatic environment, short-term (acute), Category 2: H401 Toxic to aquatic life

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 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)

2022 TLVs and BEIs. (ACGIH)

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 2021).