Date of issue for the 1st edition : 07/Dec/2016
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Safety Data Sheet

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

Product identifier:

Product name: Mercury(I) chloride

Reference number(SDS):18470jis_J_E1-2

Product type:

Reagent

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

Relevant identified uses of the product: Research and Development

Uses advised against: Do not use for other purposes.

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

Section 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 4

Skin corrosion/irritation: Category 2

Serious eye damage/eye irritation: Category 2A

Skin sensitization: Category 1

Specific target organ toxicity - single exposure: Category 1 (kidney)

Specific target organ toxicity - single exposure: Category 3 (Respiratory tract irritation)

Specific target organ toxicity - repeated exposure: Category 1 (kidney, nervous system, gastrointestinal tract)

ENVIRONMENT HAZARDS

Hazardous to the aquatic environment, short-term (acute): Category 1

Hazardous to the aquatic environment, long-term (chronic): Category 1

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

Label elements

Signal word: Danger

HAZARD STATEMENT

H301-Toxic if swallowed

H312-Harmful in contact with skin

H315-Causes skin irritation

H319-Causes serious eye irritation
H317-May cause an allergic skin reaction
H370-Causes damage to organs
H335-May cause respiratory irritation
H372-Causes damage to organs through prolonged or repeated exposure
H400-Very toxic to aquatic life
H410-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.
Use only outdoors or in a well-ventilated area.
Wash contaminated parts thoroughly after handling.
Wear protective gloves or protective clothing.
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.
Specific treatment is required.
Get medical advice/attention if you feel unwell.
Call a POISON CENTER/doctor/physician if you feel unwell.
IF exposed or concerned: Call a POISON CENTER/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.
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.
Rinse mouth.
IF SWALLOWED: Immediately call a POISON CENTER/doctor/physician.

Storage

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

Disposal

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

Section 3. Composition/information on ingredients

Mixture/Substance selection:

Substance

Common name, synonyms: Mercurous chloride

Ingredient name:Mercury(I) chloride

Content Guaranteed Reagent (%):99.5 <

Extra Pure (%):99.0 <

Chemical formula:ClHg

ENCS:1-226

CAS No.:10112-91-1

MW:236.04

EC No.:233-307-5

Note : The figures shown above are not the specifications of the product.

Section 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.

Give artificial respiration if victim is not breathing.

Administer oxygen if breathing is difficult.

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.

Immediately call a POISON CENTER/doctor/physician.

IF SWALLOWED: Call a POISON CENTER/doctor/physician if you feel unwell.

Give a slurry of activated charcoal in water to drink.

Most important symptoms and effects, both acute and delayed

(Symptoms when inhalation or ingestion)

Cough. Sore throat. Abdominal pain. Diarrhoea. Vomiting. Metallic taste.

(Symptoms when skin and/or eye contact)

Redness.

※MAY BE ABSORBED INTO THE SKIN.

Indication of any immediate medical attention and special treatment needed

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

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 a full facepiece operated in the positive pressure mode.

Section 6. Accidental release measures

Personnel precautions, protective equipment and emergency procedures

Keep unauthorized personnel away.
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

Sweep spilled substance into covered containers.
If appropriate, moisten first to prevent dusting.

Preventive measures for secondary accident

Collect spillage.
Stop leak if you can do it without risk.
Prevent dust cloud.

Section 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.

(Precautions)

Avoid contact with skin.

Avoid contact with eyes.

Safety Measures

Use only outdoors or in a well-ventilated area.

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

Use personal protective equipment as required.

When using do not eat, drink or smoke.

Any incompatibilities

Alkali metals should not be mixed with the chemicals.

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

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.

Section 8. Exposure controls/personal protection

Control parameters

Control value and Concentration standard value under ISHA

Japan control value 0.025mg-Hg/m3

Occupational Exposure Limit

JSOH

0.025 mg-Hg/m3 (as mercury vapor)

ACGIH

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

Notation

Skin

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

Select and wear respiratory protection in accordance with approved standards (e.g. JIS T8150).

Recommended respiratory protection : Dust mask

Hand protection

Wear protective gloves.

Inspect before use and replace worn or damaged gloves.

Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions.

Chemical-resistant, impervious gloves complying with an approved standard (e.g. JIS

T8116) should be used.

Eye protection

Wear safety glasses with side-shields.

Wear eye/face protection in accordance with approved standards (e.g. JIS T8147).

Skin and body protection

Wear impervious clothing and boots in case of repeated or prolonged treatment.

Personal protective equipment for the body and skin should be selected based on the task being performed and the risks involved.

Section 9. Physical and Chemical Properties

Information on basic physical and chemical properties

Physical state: Crystalline powder

Color: White

Odor: Odorless

Odor threshold data is not available.

Melting point/Freezing point data is not available.

Boiling point or initial boiling point: 383℃(sublimation)

Boiling range data is not available.

Flammability 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: 525℃

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: 4 mg/L (25℃)

Solubility in solvent data is not available.

Partition coefficient n-octanol/water data is not available.

Vapor pressure data is not available.

Vapor density data is not available.

Density and/or relative density: 7.15g/cm3

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

Relative density of the Vapor/air - mixture at 20℃ (Air = 1) data is not available.

Particle characteristics data is not available.

Other information

Critical temperature data is not available.

Evaporation rate data is not available.

VOC data is not available.

Section 10. Stability and Reactivity

Reactivity

Reactivity data is not available.

Chemical stability

Stable under normal storage/handling conditions.

Possibility of hazardous reactions

Decomposes slowly under the influence of light. This produces mercuric chloride and mercury.

Conditions to avoid

Contact with incompatible materials.

Heating. Light.

Incompatible materials

Alkali metals.

Hazardous decomposition products

Mercury. Mercury compounds. Chlorides.

Section 11. Toxicological Information

Information on toxicological effects

Acute toxicity

Acute toxicity (Oral)

[Product]

Category 3, Toxic if swallowed

[Data for components of the product]

[NITE-CHRIP]

rat LD50: 210 mg/kg (source: NITE)

Acute toxicity (Dermal)

[Product]

Category 4, Harmful in contact with skin

[Data for components of the product]

[NITE-CHRIP]

rabbit LD50: 1500 mg/kg (source: NITE)

Acute toxicity (Inhalation)

[Product]

Classification not possible (Insufficient data available or no data available).

[Data for components of the product]

No data available.

Irritant properties

Skin corrosion/irritation

[Product]

Category 2, Causes skin irritation

[Data for components of the product]

[NITE-CHRIP]

Category 2 (source: NITE)

Serious eye damage/irritation

[Product]

Category 2A, Causes serious eye irritation
[Data for components of the product]
[NITE-CHRIP]
Category 2A (source: NITE)

Sensitization
Respiratory sensitization
[Product]
Classification not possible (Insufficient data available or no data available).
[Data for components of the product]
No data available.
Skin sensitization
[Product]
Category 1, May cause an allergic skin reaction
[Data for components of the product]
[NITE-CHRIP]
Category 1 (source: NITE)

Germ cell mutagenicity
[Product]
Classification not possible (Insufficient data available or no data available).
[Data for components of the product]
No data available.

Carcinogenicity
[Product]
Classification not possible (Insufficient data available or no data available).
[Data for components of the product]
[IARC]
Group 3 : Not classifiable as to its carcinogenicity to humans
[ACGIH]
A4(as Hg): Not Classifiable as a Human Carcinogen

Reproductive toxicity
[Product]
Classification not possible (Insufficient data available or no data available).
[Data for components of the product]
No data available.

Specific target organ toxicity (STOT)
STOT-single exposure
[Product]
Category 1, Causes damage to organs
Category 3, May cause respiratory irritation
[Data for components of the product]
[NITE-CHRIP]
Category 1 (kidney), Category 3 (Respiratory tract irritation) (source: NITE)
STOT-repeated exposure
[Product]
Category 1, Causes damage to organs through prolonged or repeated exposure

[Data for components of the product]
[NITE-CHRIP]
Category 1 (kidney, nervous system, gastrointestinal tract) (source: NITE)

Aspiration hazard
[Product]
Classification not possible (Insufficient data available or no data available).
[Data for components of the product]
No data available.

Section 12. Ecological Information

Ecotoxicity

Aquatic toxicity
[Product]
Category 1, Very toxic to aquatic life
Category 1, Very toxic to aquatic life with long lasting effects
[Data for components of the product]
Hazardous to the aquatic environment, short-term (acute)
[NITE-CHRIP]
Crustacea (Daphnia magna) 48-hour LC50: 0.002 mg/L (source: NITE)

Water solubility
[Data for components of the product]
4 mg/L (25℃) (source: ICSC, 2019)

Persistence and degradability
Persistence and degradability data is not available.

Bioaccumulative potential
[Data for components of the product]
BCF: 1300 (source: NITE)

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., UN CLASS
UN Number or ID Number : 3077
UN Proper Shipping Name :
ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.

Class or division (Transport hazard class) : 9
Packing group : III
ERG GUIDE No.: 171
Special provisions No.: 274; 331; 335; 375

IMDG Code (International Maritime Dangerous Goods Regulations)
UN Number or ID Number : 3077
UN Proper Shipping Name :
ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
Class or division (Transport hazard class) : 9
Packing group : III
Special provisions No.: 274; 335; 375; 966; 967; 969

IATA (Dangerous Goods Regulations)
UN Number or ID Number : 3077
UN Proper Shipping Name :
ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
Class or division (Transport hazard class) : 9
Hazard labels : Miscellaneous & Environmentally hazardous
Packing group : III
Special provisions No.: A97; A158; A179; A197; A215

Environmental hazards
Marine pollutants (yes/no) : yes

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable to Transport in bulk according to Annex II of MARPOL and the IBC Code

MARPOL Annex V - HME (Harmful to the Marine Environment)
Specific target organ toxicity - repeated exposure: cat.1
Mercury(I) chloride
Hazardous to the aquatic environment - short-term (acute): cat.1
Mercury(I) chloride
Hazardous to the aquatic environment - long-term (chronic): cat.1, 2
Mercury(I) chloride

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
10112-91-1
All components are listed or exempted.

Superfund Amendments and Reauthorizations Act (SARA), Title III
SARA 313 (TRI)
Mercury(I) chloride

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.

Section 16. Other information

GHS classification and labelling

H301-Acute toxicity, Category 3: H301 Toxic if swallowed
H312-Acute toxicity, Category 4: H312 Harmful in contact with skin
H315-Skin corrosion/irritation, Category 2: H315 Causes skin irritation
H319-Serious eye damage/eye irritation, Category 2A: H319 Causes serious eye irritation
H317-Skin sensitization, Category 1: H317 May cause an allergic skin reaction
H370-STOT - single exposure, Category 1: H370 Causes damage to organs
H335-STOT - single exposure, Category 3, Respiratory tract irritation: H335 May cause respiratory irritation.
H372-STOT - Repeated exposure, Category 1: H372 Causes damage to organs through prolonged or repeated exposure
H400-Hazardous to the aquatic environment, short-term (acute), Category 1: H400 Very toxic to aquatic life
H410-Hazardous to the aquatic environment, long-term (chronic), Category 1: H410 Very toxic 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 23rd edit., 2023 UN
IMDG Code, 2024 Edition (Incorporating Amendment 42-24)
IATA Dangerous Goods Regulations (66th Edition) 2025
2024 EMERGENCY RESPONSE GUIDEBOOK (US DOT)
2025 TLVs and BEIs. (ACGIH)
JIS Z 7252 : 2019
JIS Z 7253 : 2019
Recommendation of occupational exposure limits (2023-2024) (JSOH)
Notification No. 0111-1 (January 11, 2022), Chemical Hazards Control Division, Industrial Safety and Health Department, Labour Standards Bureau, MHLW in Japan
Supplier's data/information
Chemicals safety data management system "GHS Assistant" Version 4.35
(https://www.asahi-ghs.com/)
NITE Chemical Risk Information Platform "NITE-CHRIP"
(https://www.chem-info.nite.go.jp/chem/chrip/chrip_search/systemTop)
GHS Classification Guidance for Enterprises 2019 Revised Edition (Ver. 2.1) (May. 2024, METI)

Abbreviations and acronyms

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)
METI (Ministry of Economy, Trade and Industry in Japan)

MHLW (Ministry of Health, Labour and Welfare in Japan)
MOE (Ministry of the Environment in Japan)
JSOH (Japan Society for Occupational Health)
ISHA (Industrial Safety and Health Act in Japan)
CSCL (Chemical Substances Control Law in Japan)
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 Data published in Japan (National Institute of Technology and Evaluation (NITE) Chemical Risk Information Platform (NITE-CHRIP), up to FY2023).