

Safety Data Sheet

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

Product identifier:

Product name: Manganese, standard solution 1000mg/L

Product code (SDS NO): 70195jis_J_E2-1

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

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2. Hazards identification

GHS classification and label elements of the product

Classification of the substance or mixture

HEALTH HAZARDS

Acute toxicity (Inhalation): Category 4

Skin corrosion/irritation: Category 1

Serious eye damage/eye irritation: Category 1

Respiratory sensitization: Category 1

Specific target organ toxicity – single exposure: Category 2(respiratory system)

Specific target organ toxicity – repeated exposure: Category 2(tooth, respiratory system)

ENVIRONMENT HAZARDS

Hazardous to the aquatic environment (Acute): Category 2

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

Label elements



Signal word: Danger

HAZARD STATEMENT

H332-Harmful if inhaled

H314-Causes severe skin burns and eye damage

H318-Causes serious eye damage

H334-May cause allergy or asthma symptoms or breathing difficulties if inhaled

H371-May cause damage to organs after single exposure

H373-May cause damage to organs through prolonged or repeated exposure

H401-Toxic to aquatic life

PRECAUTIONARY STATEMENT

Prevention

Avoid release to the environment.

Do not breathe dust/mist.

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, protective clothing or face protection.

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Wear eye protection/face protection.
Do not eat, drink or smoke when using this product.

Response

Get medical advice/attention if you feel unwell.
Immediately call a POISON CENTER or doctor/physician.
If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
Wash contaminated clothing 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: Rinse mouth. Do NOT induce vomiting.

Storage

Store locked up.

Disposal

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

3. Composition/information on ingredients

Mixture/Substance selection:

Mixture

Ingredient name:Manganese(II) chloride
Content (%):ca. 0.23(w/v)
Chemical formula:Cl₂Mn
Chemicals No, Japan:1-235
CAS No.:7773-01-5
MW:125.84
ECNO:231-869-6

Ingredient name:Hydrogen chloride
Content (%):ca. 3.61(w/v)
Chemical formula:ClH
Chemicals No, Japan:1-215
CAS No.:7647-01-0
MW:36.46
ECNO:231-595-7

Ingredient name:Water
Content (%):Residual quantity of the ingredient mentioned above.
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.
Immediately call a POISON CENTER or doctor/physician.

IF INHALED

Remove person to fresh air and keep comfortable for breathing.
If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.

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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.

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.

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.

The product is non-flammable.

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/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.

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.

PUBLIC SAFETY: Ventilate closed spaces before entering.

Environmental precautions

Avoid release to headsprings, rivers, lakes, ocean and groundwater.

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.

All equipment used when handling the product must be grounded.

Preventive measures for secondary accident

Collect spillage.

Stop leak if you can do it without risk.

Prevent entry into waterways, sewers, basements or confined areas.

7. Handling and storage

Precautions for safe handling

Preventive measures

(Exposure Control for handling personnel)

Do not breathe dust/mist.

(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.

Use personal protective equipment as required.

When using do not eat, drink or smoke.

Any incompatibilities

Bases 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.

Wash contaminated clothing before reuse.

Storage

Conditions for safe storage

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

Keep cool. Protect from sunlight.

Store locked up.

Container and packaging materials for safe handling data is not available.

8. Exposure controls/personal protection

Control parameters

Control value

(Manganese(II) chloride)

Japan control value (2004) $\leq 0.2\text{mg-Mn}/\text{m}^3$

Adopted value

(Hydrogen chloride)

JSOH(2014) (ceiling) 2ppm; $3.0\text{mg}/\text{m}^3$

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

(Manganese(II) chloride)

JSOH(2008) $0.2\text{mg-Mn}/\text{m}^3$

ACGIH(2012) TWA: $0.02\text{mg-Mn}/\text{m}^3(\text{R})$;

TWA: $0.1\text{mg-Mn}/\text{m}^3(\text{I})$ (CNS impair)

OSHA-PEL

(Manganese(II) chloride)

STEL: C $5\text{mg-Mn}/\text{m}^3$

(Hydrogen chloride)

STEL: C 5ppm, $7\text{mg}/\text{m}^3$

NIOSH-REL

(Hydrogen chloride)

STEL: C 5ppm

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(Manganese(II) chloride)

TWA: 1mg-Mn/m³; STEL: 3mg-Mn/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.

Consult with your glove and/or personnel equipment manufacturer for selection of appropriate compatible materials.

Eye protection

Wear eye/face protection.

Skin and body protection

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

9. Physical and Chemical Properties

Information on basic physical and chemical properties

Physical state: Liquid

Color: Pale red

Odor data is not available.

Odor threshold data is not available.

pH: pH ≤ 2(strong acidic)

Boiling point or initial boiling point data is not available.

Boiling range data is not available.

Evaporation rate data is not available.

Melting point/Freezing point data is not available.

Decomposition temperature data is not available.

Self-Accelerating Decomposition Temperature/SADT 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.

Critical temperature data is not available.

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

Vapor pressure data is not available.

Vapor density data is not available.

VOC data is not available.

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

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

Density and/or relative density data is not available.

Dynamic viscosity data is not available.

Kinematic viscosity data is not available.

Solubility:

Solubility in water: Miscible

Solubility in solvent data is not available.

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

No Particle characteristics data is not available.

10. Stability and Reactivity

Reactivity data is not available.

Chemical stability

Stable under normal storage/handling conditions.

Possibility of hazardous reactions data is not available.

Conditions to avoid

Contact with incompatible materials.

Heat.

Incompatible materials

Bases

Hazardous decomposition products

Manganese oxides.

Chlorides

11. Toxicological Information

Information on toxicological effects

Acute toxicity

Acute toxicity (Oral)

[GHS Cat. Japan, base data]

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

(Manganese(II) chloride) rat LD50=331mg/kg(female), 342~642mg/kg(male)(ATSDR, 2012)

Acute toxicity (Inhalation)

[GHS Cat. Japan, base data]

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

Labor standard law, Japan; Toxic

Hydrogen chloride; Manganese(II) chloride

Irritant properties

Skin corrosion/irritation

[GHS Cat. based on pH]

pH <= 2, accordingly Skin corrosion/irritation: Category 1

[GHS Cat. Japan, base data]

(Hydrogen chloride)

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

Serious eye damage/irritation

[GHS Cat. based on pH]

pH <= 2, accordingly Serious eye damage/eye irritation: Category 1

[GHS Cat. Japan, base data]

(Hydrogen chloride) rabbit : corrosive (SIDS, 2002)

Sensitization

Respiratory sensitization

[GHS Cat. Japan, base data]

(Hydrogen chloride)

cat. 1; Occupational/Environmental Allergy Society, Japan

Mutagenic effects data is not available.

Carcinogenicity

(Hydrogen chloride)

IARC-Gr.3 : Not Classifiable as a Human Carcinogen

ACGIH-A4(2000) : Not Classifiable as a Human Carcinogen

(Manganese(II) chloride)

ACGIH-A4(2012) : Not Classifiable as a Human Carcinogen (Inorganic Mn)

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Reproductive toxicity

[GHS Cat. Japan, base data]

(Manganese(II) chloride) cat. 1B; NITE risk assessment, 2008; CICAD 12, 1999; JSOH, 2014

Teratogenic effects data is not available.

STOT

STOT-single exposure

[cat.1]

[GHS Cat. Japan, base data]

(Hydrogen chloride) respiratory apparatus/system (ACGIH, 2003)

STOT-repeated exposure

[cat.1]

[GHS Cat. Japan, base data]

(Hydrogen chloride) teeth; respiratory apparatus/system (SIDS, 2002)

Aspiration hazard data is not available.

Additional data

Data on the preparation itself is not available.

12. Ecological Information

Ecotoxicity

Aquatic toxicity

H401-Toxic to aquatic life

Aquatic acute toxicity component(s) data

[GHS Cat. Japan, base data]

(Hydrogen chloride)

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

(Manganese(II) chloride)

Crustacea (Daphnia magna) EC50=4.6mg/L/48hr (calc. value by 2.0mg-Mn/L/48hr) (WHO CICAD, 2008)

Aquatic chronic toxicity component(s) data

[GHS Cat. Japan, base data]

(Manganese(II) chloride)

Algae (Asterionella japonica) EC50 (velocity method)=11.1mg/L/24-72hr (MOE Japan, 2008)

Water solubility

(Hydrogen chloride) 67 g/100 ml (30°C) (ICSC, 2000)

Persistence and degradability

(Manganese(II) chloride) Not degrade rapidly (metal element)

Bioaccumulative potential

(Hydrogen chloride) log Pow=0.25 (ICSC, 2000)

Mobility in soil data is not available.

Ozone depleting chemical data is not available.

Additional data

Data on the preparation itself 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., UN CLASS**

UN No.: 1789

Proper Shipping Name : HYDROCHLORIC ACID

Class or division : 8

Packing group : III

ERG GUIDE No.: 157

IMDG Code (International Maritime Dangerous Goods Regulations)

UN No.: 1789

Proper Shipping Name : HYDROCHLORIC ACID

Class or division : 8

Packing group : III

IATA Dangerous Goods Regulations

UN No.: 1789

Proper Shipping Name : HYDROCHLORIC ACID

Class or division : 8

Hazard labels : Corrosive

Packing group : III

Environmental hazards

MARPOL Annex III – Prevention of pollution by harmful substances

Marine pollutants (yes/no) : no

15. Regulatory Information

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

Environmental hazards

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

Noxious Liquid ; Cat. Z

Hydrogen chloride

Non Noxious Liquid ; Cat. OS

Water

US major regulations

TSCA

Hydrogen chloride; Water; Manganese(II) 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).

16. Other information

GHS classification and labelling

H332–Acute Tox. 4: H332 Harmful if inhaled

H314–Skin Corr. 1: H314 Causes severe skin burns and eye damage

H318–Eye Dam. 1: H318 Causes serious eye damage

H334–Resp. Sens. 1: H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled

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

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

H401–Aquatic Acute 2: H401 Toxic to aquatic life

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>

JIS Z 7253 : 2019

JIS Z 7252 : 2019

2019 Recommendation on TLVs (JSOH)

Supplier's data/information

Chemicals safety data management system "GHS Assistant" (<https://www.asahi-ghs.com/>)

NITE Chemical Risk Information Platform (NITE-CHRIP)

https://www.nite.go.jp/en/chem/chrip/chrip_search/systemTop

GHS Classification Guidance for Enterprises 2013 Revised Edition (Aug. 2013, METI)

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).