Date of issue for the 1st edition : 23/May/2014
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Safety Data Sheet

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

Product identifier:

Product name: Hydrogen peroxide

Reference number(SDS):23150jis_E1-3

Product type:

Reagent

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

PHYSICAL AND CHEMICAL HAZARDS

Oxidizing liquids: Category 2

HEALTH HAZARDS

Acute toxicity (Oral): Category 4
Acute toxicity (Dermal): Category 3
Acute toxicity (Inhalation): Category 2 (dust/mist)
Acute toxicity (Inhalation): Category 3 (vapors)
Skin corrosion/irritation: Category 1
Serious eye damage/eye irritation: Category 1
Carcinogenicity: Category 2
Specific target organ toxicity - single exposure: Category 1 (respiratory system)
Specific target organ toxicity - repeated exposure: Category 1 (respiratory system)

ENVIRONMENT HAZARDS

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

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

Label elements

Signal word: Danger

HAZARD STATEMENT

H272-May intensify fire; oxidizer
H302-Harmful if swallowed
H311-Toxic in contact with skin
H330-Fatal if inhaled
H331-Toxic if inhaled
H314-Causes severe skin burns and eye damage
H318-Causes serious eye damage
H351-Suspected of causing cancer
H370-Causes damage to organs

H372-Causes damage to organs through prolonged or repeated exposure
H400-Very toxic to aquatic life

PRECAUTIONARY STATEMENT

Prevention

Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Avoid release to the environment.
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Keep away from clothing and other combustible materials.
Do not breathe dust/mist.
Avoid breathing vapors.
In case of inadequate ventilation wear respiratory protection.
Use only outdoors or in a well-ventilated area.
Wash contaminated parts thoroughly after handling.
Wear protective gloves/protective clothing/eye protection/face protection.
Use personal protective equipment as required.
Do not eat, drink or smoke when using this product.

Response

In case of fire: Use water in large amounts to extinguish.
Collect spillage.
Get medical advice/attention if you feel unwell.
IF exposed or concerned: Get medical advice/attention.
Immediately 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 ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
Take off immediately all 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 SWALLOWED: Call a POISON CENTER/doctor/physician if you feel unwell.
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

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.

Specific Physical and Chemical hazards

Oxidizing material. Organic or combustible material may catch fire in contact with it.

Section 3. Composition/information on ingredients

Mixture/Substance selection:

Mixture

Common name, synonyms: Hydrogen peroxide solution (30%)

Ingredient name:Hydrogen peroxide
Content (%):30.0～35.5
Chemical formula:H2O2
Chemicals No, Japan:1-419
CAS No.:7722-84-1
MW:34.01
ECNO:231-765-0

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

Section 4. First-aid measures

Descriptions of first-aid measures

General measures

Get medical advice/attention if you feel unwell.
Immediately call a POISON CENTER/doctor/physician.
Keep victim warm and quiet.
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. Do NOT induce vomiting.
Call a POISON CENTER/doctor/physician if you feel unwell.

Most important symptoms and effects, both acute and delayed

(Symptoms when inhalation or ingestion)

Sore throat. Cough. Dizziness. Headache. Nausea. Shortness of breath. Abdominal pain. Abdominal distension. Shock or collapse.
※Aspiration hazard.

(Symptoms when skin and/or eye contact)

Conjunctival redness of the eyes. Redness of the skin. Skin discoloration. Skin swelling. Pain. Burns. Blurred vision. Corneal damage.
※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

In case of fire, use water in large amounts to extinguish.
The product is non-flammable, but may ignite combustible materials.

Unsuitable extinguishing media

Dry chemicals. Foams.

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.

This substance will accelerate burning when involved in a fire.

Advice for firefighters

Specific fire-fighting measures

Evacuate non-essential personnel to safe area.

Cool container with water spray.

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.

PUBLIC SAFTY: Ventilate closed spaces before entering.

Environmental precautions

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

Runoff may create fire or explosion hazard.

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.

※Do NOT absorb in saw-dust or other combustible absorbents.

With clean shovel place material into clean, dry container and cover loosely; move containers from spill area.

Preventive measures for secondary accident

Collect spillage.

Stop leak if you can do it without risk.

Keep combustibles (wood, paper, oil, etc.) away from spilled material.

Do not get water inside containers.

Keep out of low areas.

Section 7. Handling and storage

Precautions for safe handling

Preventive measures

(Exposure Control for handling personnel)

Do not breathe dust/mist.

Avoid breathing vapors.

(Protective measures against fire and explosion)

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Keep away from clothing and other combustible materials.

(Exhaust/ventilator)

Exhaust/ventilator should be available.

(Safety treatments)

Avoid contact with skin.

Avoid contact with eyes.

Safety Measures

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

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.
May ignite combustibles (wood, paper, oil, clothing, etc.).
Contaminated clothing may be a fire risk when dry.

Any incompatibilities

Strong bases, Reducing agents, Metals, Combustible substances 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.
Take off immediately all 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

Polyvinyl chloride(PVC), Polytetrafluoroethylene (Teflon; PTFE)

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 in MHLW is not available.

Adopted value

(Hydrogen peroxide)
Adopted value in JSOH is not available.
ACGIH(1996) TWA: 1ppm (Eye, URT & skin irr)

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.
Recommended respiratory protection：Gas mask(JIS T8152)

Hand protection

Wear protective gloves. Recommended material(s): neoprene, nitrile, butyl rubber, viton, PVC, impermeable or chemical resistant rubber
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 chemical safety goggle.
Wear eye/face protection.

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: Liquid
Color: Colorless
Odor: Odorless or slightly odor
Odor threshold data is not available.
Melting point/Freezing point: -26℃ (30%)
Boiling point or initial boiling point: 106.2℃ (30%)
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: >100℃
Self-Accelerating Decomposition Temperature/SADT data is not available.
pH: 2～4 (20℃) (30%)
Dynamic viscosity data is not available.
Kinematic viscosity data is not available.
Solubility:
Solubility in water: Miscible
Solubility in solvent: Soluble in alcohol.
n-Octanol/water partition coefficient data is not available.
Vapor pressure: ca.18hPa (20℃) (30%)
Vapor density data is not available.
Density and/or relative density: 1.11g/cm3(20℃) (30%)
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.
Other information is not available.

Section 10. Stability and Reactivity

Reactivity

Reactivity data is not available.

Chemical stability

Stable under normal storage/handling conditions.
This product may gradually decompose into oxygen.

Possibility of hazardous reactions

Decomposes under the influence of light. Decomposes on warming. This produces oxygen. This increases fire hazard.
The substance is a strong oxidant. It reacts violently with combustible and reducing materials.
This generates fire and explosion hazard particularly in the presence of metals.
Attacks many organic substances such as textiles and paper.

Conditions to avoid

Contact with incompatible materials.
Light, Heating.

Incompatible materials

Strong bases, Reducing agents, Metals, Combustible substances

Hazardous decomposition products

Oxygen gas

Section 11. Toxicological Information

The product has not been subjected to toxicological testing. Refer to the available data on the constituents.

Information on toxicological effects

Acute toxicity

Acute toxicity (Oral)

[Product]

Category 4, Harmful if swallowed

[Data for components of the product]

[GHS Cat. Japan, base data]

(Hydrogen peroxide)

rat LD50=805mg/kg (DFGOT vol.26, 2011)

Acute toxicity (Dermal)

[Product]

Category 3, Toxic in contact with skin

[Data for components of the product]

[GHS Cat. Japan, base data]

(Hydrogen peroxide)

rabbit LD50=690mg/kg (DFGOT vol.26, 2011)

Acute toxicity (Inhalation)

[Product]

Category 2, Fatal if inhaled

Category 3, Toxic if inhaled

[Data for components of the product]

[GHS Cat. Japan, base data]

(Hydrogen peroxide)

mist: mouse LC50=0.46～1.00mg/L/4hr (DFGOT vol.26, 2011)

vapor: rat LC50=1438ppmV/4hr (DFGOT vol.26, 2011)

Irritant properties

Skin corrosion/irritation

[Product]

Category 1, Causes severe skin burns and eye damage

[Data for components of the product]

[GHS Cat. Japan, base data]

(Hydrogen peroxide)

rabbit : corrosive (EU-RAR, 2003 et al.)

Serious eye damage/irritation

[Product]

Category 1, Causes serious eye damage

[Data for components of the product]

[GHS Cat. Japan, base data]

(Hydrogen peroxide)

animal : corrosive (EU-RAR, 2003)

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

[Data for components of the product]
No data available.

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]
Category 2, Suspected of causing cancer

[Data for components of the product]
[GHS Cat. Japan, base data]
(Hydrogen peroxide)
cat.2; ACGIH A3 (ACGIH 7th, 2001)
[IARC]
(Hydrogen peroxide)
Group 3 : Not classifiable as to its carcinogenicity to humans
[ACGIH]
(Hydrogen peroxide)
A3(1996) : Confirmed Animal Carcinogen with Unknown Relevance to Humans

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

[Data for components of the product]
[cat.1]
[GHS Cat. Japan, base data]
(Hydrogen peroxide)
respiratory system (ACGIH, 2001; EU-RAR, 2003)

STOT-repeated exposure

[Product]
Category 1, Causes damage to organs through prolonged or repeated exposure

[Data for components of the product]
[cat.1]
[GHS Cat. Japan, base data]
(Hydrogen peroxide)
respiratory system (EU-RAR, 2003)

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

The product has not been subjected to ecotoxicological testing. Refer to the available data on the constituents.

Toxicity

Aquatic toxicity

[Product]

Category 1, Very toxic to aquatic life

[Data for components of the product]

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

[GHS Cat. Japan, base data]

(Hydrogen peroxide)

Algae (Nitzschia) EC50=0.85mg/L/72hr (EU-RAR, 2003)

Water solubility

[Data for components of the product]

(Hydrogen peroxide)

miscible (ICSC, 2018)

Persistence and degradability

[Data for components of the product]

(Hydrogen peroxide)

Ready biodegradability (EU-RAR, 2003)

Bioaccumulative potential

[Data for components of the product]

(Hydrogen peroxide)

log Pow=-1.36 (ICSC, 2018)

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 : 2014

UN Proper Shipping Name :

HYDROGEN PEROXIDE, AQUEOUS SOLUTION with 20% or more but 40% or less hydrogen peroxide (stabilized as necessary)

Class or division (Transport hazard class) : 5.1

Subsidiary hazard(s) : 8

Packing group : II

ERG GUIDE No.: 140

IMDG Code (International Maritime Dangerous Goods Regulations)

UN Number or ID Number : 2014

UN Proper Shipping Name :

HYDROGEN PEROXIDE, AQUEOUS SOLUTION with 20% or more but 40% or less hydrogen peroxide (stabilized as necessary)

Class or division (Transport hazard class) : 5.1
Subsidiary hazard(s) : 8
Packing group : II

IATA (Dangerous Goods Regulations)
UN Number or ID Number : 2014
UN Proper Shipping Name :
HYDROGEN PEROXIDE, AQUEOUS SOLUTION with 20% or more but 40% or less hydrogen peroxide (stabilized as necessary)
Class or division (Transport hazard class) : 5.1
Subsidiary hazard(s) : 8
Hazard labels : Oxidizer & Corrosive
Packing group : II

Environmental hazards
Marine pollutants (yes/no) : yes

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Noxious Liquid Substances ; Cat. Y
Hydrogen peroxide
Non Noxious Liquid Substances ; Cat. OS
Water

MARPOL Annex V - HME (Harmful to the Marine Environment)
Specific target organ toxicity - repeated exposure: cat.1
Hydrogen peroxide
Hazardous to the aquatic environment - short-term (acute): cat.1
Hydrogen peroxide

Section 15. Regulatory Information

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

Labor Standards Act, Japan

Chemical substances or compounds (including alloys) causing disease (Regulation, Appended Table1-2-4-1)
Hydrogen peroxide

U.S. Toxic Substances Control Act (TSCA) Inventory
Chemicals listed in TSCA Inventory
7722-84-1; 7732-18-5
All components are listed or exempted.

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
H272-Oxidising Liquids, Category 2: H272 May intensify fire; oxidiser
H302-Acute toxicity, Category 4: H302 Harmful if swallowed
H311-Acute toxicity, Category 3: H311 Toxic in contact with skin
H330-Acute toxicity, Category 2: H330 Fatal if inhaled
H331-Acute toxicity, Category 3: H331 Toxic if inhaled

H314-Skin corrosion/irritation, Category 1: H314 Causes severe skin burns and eye damage
H318-Serious eye damage/eye irritation, Category 1: H318 Causes serious eye damage
H351-Carcinogenicity, Category 2: H351 Suspected of causing cancer
H370-STOT - single exposure, Category 1: H370 Causes damage to organs
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

References and sources for data

Globally Harmonized System of classification and labelling of chemicals, UN
Recommendations on the TRANSPORT OF DANGEROUS GOODS 22nd edit., 2021 UN
IMDG Code, 2020 Edition (Incorporating Amendment 40-20)
IATA Dangerous Goods Regulations (64th Edition) 2023
2020 EMERGENCY RESPONSE GUIDEBOOK (US DOT)
2023 TLVs and BEIs. (ACGIH)
JIS Z 7252 : 2019
JIS Z 7253 : 2019
2022 Recommendation on TLVs (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 4.24 (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 2019 Revised Edition (Ver. 2.0) (Mar. 2020, 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)
JSOH (Japan Society for Occupational Health)
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 Japan official data (NITE published in 2021).