REAGENTS DUKSAN

SAFETY DATA SHEET

According to OSHA Hazcom Standard 29 CFR 1910.1200

Hydrogen Peroxide

Date of issue: 2019-07-02 **Revision date: 2025-01-03** **Version: R0004.0001**

1. IDENTIFICATION

A. Product name

- Hydrogen Peroxide

B. Recommended use and restriction on use

- General use : for experimental, research and industrial use
- Restriction on use : Never drink, Not used except for experimental, research and industrial applications.

C. Manufacturer / Supplier / Distributor information

○ **Manufacturer information**

- Company name : DUKSAN PURE CHEMICALS
- Address : 53,SINWONRO 133BEONGIL, DANWONGU, ANSANSHI, GYUNGGIDO, KOREA
- Emergency telephone number : 82-31-495-4055

○ **Supplier/Distributer information**

- Company name : DUKSAN PURE CHEMICALS
- Address : 53,SINWONRO 133BEONGIL, DANWONGU, ANSANSHI, GYUNGGIDO, KOREA
- Telephone number : 82-31-495-4055
- Emergency telephone number : 82-31-495-4055
- Fax number : 82-31-495-4058

2. HAZARD IDENTIFICATION

A. GHS Classification

- Oxidizing liquids : Category1
- Acute toxicity (oral) : Category4
- Acute toxicity (inhalation: vapor) : Category4
- Skin corrosion/irritation : Category1A
- Chronic aquatic toxicity : Category3

B. GHS label elements

○ **Hazard symbols**



○ **Signal words**

- Danger

○ **Hazard statements**

- H271 May cause fire or explosion; strong oxidizer
- H302 Harmful if swallowed
- H314 Causes severe skin burns and eye damage
- H332 Harmful if inhaled
- H412 Harmful to aquatic life with long lasting effects

○ **Precautionary statements**

1) Prevention

- P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
- P220 Keep/Store away from clothing//combustible materials.
- P221 Take any precaution to avoid mixing with combustibles, incompatibles material
- P260 Do not breathe gas/mist/vapours/spray.
- P261 Avoid breathing gas/mist/vapours/spray.
- P264 Wash hands thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.
- P271 Use only outdoors or in a well-ventilated area.
- P273 Avoid release to the environment.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.
- P283 Wear fire/flame resistant/retardant clothing.

2) Response

- P301+P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
- P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
- P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
- P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P306+P360 IF ON CLOTHING: Rinse immediately contaminated clothing and skin with plenty of water before removing clothes.
- P310 Immediately call a POISON CENTER or doctor/physician.
- P312 Call a POISON CENTER or doctor/physician if you feel unwell.
- P321 Specific treatment
- P330 Rinse mouth.
- P363 Wash contaminated clothing before reuse.
- P370+P378 In case of fire: Use Suitable extinguishing media for extinction(Refer Section MSDS 5).
- P371+P380+P375 In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.

3) Storage

- P405 Store locked up.

4) Disposal

- P501 Dispose of contents/container in accordance with local/regional/national/international regulation

C. Other hazards which do not result in classification : (NFPA Classification)

○ **NFPA grade (0 ~ 4 level)**

- Health : 3, Flammability : 0, Reactivity : 0

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	Trade names and Synonyms	CAS No.	Content(%)
Water	Dihydrogen oxide ; Oxidane	7732-18-5	65~72
Hydrogen peroxide	Hydrogen dioxide ; Hydrogen dioxide solution ; Hydrogen peroxide solution ; Hydroperoxide ; Perhydrol ; Peroxan ; Peroxide ; Superoxol ;	7722-84-1	28~35

4. FIRST AID MEASURES

A. Eye contact

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.

B. Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Wash contaminated clothing thoroughly before re-using.
- Get medical attention immediately.
- Wash thoroughly after handling.

C. Inhalation contact

- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed.
- If breathing is stopped or irregular, give artificial respiration and supply oxygen.

D. Ingestion contact

- Please be advised by doctor whether induction of vomit is demanded or not.
- Rinse your mouth with water immediately.

E. Delayed and immediate effects and also chronic effects from short and long term exposure

- Not available

F. Notes to physician

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.

5. FIREFIGHTING MEASURES

A. Suitable (Unsuitable) extinguishing media

- Dry chemical, carbon dioxide, regular foam extinguishing agent, spray
- Avoid use of water jet for extinguishing

B. Specific hazards arising from the chemical

- Not available

C. Special protective actions for firefighters

- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- In case of conflagration, use automatic fire sprinkler. Major fire may require withdrawal, allowing the object itself to burn.
- Avoid inhalation of materials or combustion by-products.
- Do not access if the tank on fire.
- Use appropriate extinguishing measure suitable for surrounding fire.
- Keep containers cool with water spray.
- Vapor or gas is burned at distant ignition sources can be spread quickly.
- Explosion hazards : Keep people away and fight fire from a safe distance.
- Flush skin with plenty of wter for at least 15 minutes while removing contaminated clothing and shoes.
- Move people from the area.

6. ACCIDENTAL RELEASE MEASURES

A. Personal precautions, protective equipment and emergency procedures

- Ventilate closed spaces before entering.
- Do not touch spilled material. Stop leak if you can do it without risk.
- Handle the damaged containers or spilled material after wearing appropriate protective equipment
- Do not direct water at spill or source of leak.
- Avoid skin contact and inhalation.

B. Environmental precautions

- Prevent runoff and contact with waterways, drains or sewers.
- If large amounts have been spilled, inform the relevant authorities.

C. Methods and materials for containment and cleaning up

- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notification to central government, local government. When emissions at least of the standard amount
- Dispose of waste in accordance with local regulation.
- Appropriate container for disposal of spilled material collected.
- Small leak: sand or other non-combustible material, please let use absorption.
- Wipe off the solvent.
- Dike for later disposal.
- Prevent the influx to waterways, sewers, basements or confined spaces.

7. HANDLING AND STORAGE

A. Precautions for safe handling

- Avoid direct physical contact.
- Since emptied containers retain product residue(vapor, liquid, solid) follow all MSDS and label warnings even after container is emptied.
- Comply with all applicable laws and regulations for handling
- Dealing only with a well-ventilated place.
- Do not inhale the steam prolonged or repeated.
- Handling only authorized person.

B. Conditions for safe storage, including any incompatibilities

- Store according to current laws and regulations
- Do not apply any physical shock to container.
- Avoid direct sunlight.
- Keep in the original container.
- Please pay attention to incompatibilities materials and conditions to avoid.
- Collected them in sealed containers.
- Do not eat, drink or smoke when using this product.
- Do not store in metal containers.
- Store away from water and sewer.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

A. Exposure limits

○ **ACGIH TLV**

- [Hydrogen peroxide] : TWA, 1 ppm (1.4 mg/m30

○ **OSHA PEL**

- [Hydrogen peroxide]:1ppm 1.4mg/m3

B. Engineering controls

- Business owner is recommended to maintain below recommended exposure limits for the working place with general exhaust of gas/vapour/mist/fume.

C. Individual protection measures, such as personal protective equipment

○ **Respiratory protection**

- Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
- Respiratory protection is ranked in order from minimum to maximum.
- Consider warning properties before use.
- Any chemical cartridge respirator with organic vapor cartridge(s).
- Any chemical cartridge respirator with a full facepiece and organic vaporcartridge(s).
- Any air-purifying respirator with a full facepiece and an organic vapor canister.
- For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full facepiece.

○ **Eye protection**

- Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
- Provide an emergency eye wash station and quick drench shower in the immediate work area.

○ **Hand protection**

- Wear appropriate chemical resistant glove.

○ **Skin protection**

- Wear appropriate chemical resistant protective clothing.

○ **Others**

- Not available

9. PHYSICAL AND CHEMICAL PROPERTIES

A. Appearance	

- Appearance	Liquid
- Color	colorless
B. Odor	ether odor
C. Odor threshold	Not available
D. pH	5.1 (90 wt%)
E. Melting point/Freezing point	-0.43 ℃
F. Initial Boiling Point/Boiling Ranges	152 ℃
G. Flash point	Not available
H. Evaporation rate	Not available
I. Flammability(solid, gas)	Not available
J. Upper/Lower Flammability or explosive limits	Not available
K. Vapour pressure	1.97 ㎜Hg (25℃)
L. Solubility	100 g/100㎖ (25℃)
M. Vapour density	1 (air=1)
N. Specific gravity(Relative density)	1.11 (20℃)
O. Partition coefficient of n-octanol/water	-1.36
P. Autoignition temperature	Not available
Q. Decomposition temperature	Not available
R. Viscosity	1.245 cP
S. Molecular weight	34.01

10. STABILITY AND REACTIVITY

A. Chemical Stability

- This material is stable under recommended storage and handling conditions.

B. Possibility of hazardous reactions

- Hazardous Polymerization will not occur.

C. Conditions to avoid

- Avoid contact with incompatible materials and condition.
- Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces
- Avoid contact with heat, sparks, flame or other ignition sources.
- Keep away from heat source.

D. Incompatible materials

- Not available

E. Hazardous decomposition products

- May emit flammable vapour if involved in fire.

11. TOXICOLOGICAL INFORMATION

A. Information on the likely routes of exposure

○ **(Respiratory tracts)**

- Not available

○ **(Oral)**

- Harmful if swallowed

○ **(Eye·Skin)**

- Causes severe skin burns and eye damage

B. Delayed and immediate effects and also chronic effects from short and long term exposure

○ **Acute toxicity**

*** Oral**

- Product (ATEmix) : >5000mg/kg
- [Water] : LD50 > 90000 ㎎/㎏ Rat (KOSHA)
- [Hydrogen peroxide] : LD50 1193 ㎎/㎏ Rat (GLP, US EPA Guidelines)

*** Dermal**

- Product (ATEmix) : >5000mg/kg
- [Hydrogen peroxide] : LD50 > 2000 ㎎/㎏ Rabbit (No deaths, OECD TG 402, GLP)

*** Inhalation**

- Product (ATEmix) : Not available
- [Hydrogen peroxide] : Steam LC50 > 170 ㎎/㎥ 4 hr Rat (OECD TG 403, GLP)

○ **Skin corrosion/irritation**

- Causes severe skin burns and eye damage

○ **Serious eye damage/irritation**

- Not available

○ **Respiratory sensitization**

- Not available

○ **Skin sensitization**

- Not available

○ **Carcinogenicity**

*** IARC**

- [Hydrogen peroxide] : Group 3

*** OSHA**

- Not available

*** ACGIH**

- [Hydrogen peroxide] : A3

*** NTP**

- Not available

*** EU CLP**

- Not available

○ **Germ cell mutagenicity**

- Not available

○ **Reproductive toxicity**

- Not available

○ **STOT-single exposure**

- Not available

○ **STOT-repeated exposure**

- Not available

○ **Aspiration hazard**

- Not available

12. ECOLOGICAL INFORMATION

A. Ecotoxicity

○ **Fish**

- [Hydrogen peroxide] : LC50 16.4 ㎎/ℓ 96 hr Pimephales promelas (USEPA method)

○ **Crustaceans**

- [Hydrogen peroxide] : LC50 2.4 ㎎/ℓ 48 hr Daphnia pulex (USEPA method)

○ **Algae**

- [Hydrogen peroxide] : ErC50 1.38 ㎎/ℓ 72 hr Skeletonema costatum (Paris Commission guidelines1990, GLP)

B. Persistence and degradability

○ **Persistence**

- [Water] : log Kow = -1.38
- [Hydrogen peroxide] : log Kow -1.36

○ **Degradability**

- Not available

C. Bioaccumulative potential

○ **Bioaccumulative potential**

- Not available

○ **Biodegration**

- [Hydrogen peroxide] : 99 % 30 day (OECD 209, GLP)

D. Mobility in soil

- Not available

E. Other adverse effects

- Not available

13. DISPOSAL CONSIDERATIONS

A. Disposal methods

- Since more than two kinds of designated waste is mixed, it is difficult to treat separately, then can be reduction or stabilization by incineration or similar process.
- If water separation is possible, pre-process with Water separation process.
- Dispose by incineration.
- Do disposal as neutralization, hydrolysis and oxidation-reduction.
- High temperature incinerating, high-temperature melt processing will be landfilled
- Solidification processing.

B. Special precautions for disposal

- The user of this product must dispose by oneself or entrust it to a waste disposer, a person who recycles other's waste or establishes and operates waste disposal facilities.
- Dispose of waste in accordance with all applicable laws and regulations.

14. TRANSPORT INFORMATION

A. UN No. (IMDG CODE/IATA DGR)

- 2014

B. Proper shipping name

- HYDROGEN PEROXIDE, AQUEOUS SOLUTIONS WITH NOT LESS THAN 20 PERCENT BUT NOT MORE THAN 40 PERCENT HYDROGEN PEROXIDE (STABILIZED AS NECESSARY)

C. Hazard Class

- 5.1(8)

D. IMDG CODE/IATA DGR Packing group

- II

E. Marine pollutant

- Not applicable

F. Special precautions for user related to transport or transportation measures

- Local transport follows in accordance with Dangerous goods Safety Management Law.
- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency requirements.
- EmS FIRE SCHEDULE : F-H (Oxidizing substances with explosive potential)
- EmS SPILLAGE SCHEDULE : S-Q (Oxidizing substances)

15. REGULATORY INFORMATION

A. National and/or international regulatory information

○ **POPs Management Law**

- Not applicable

○ **Information of EU Classification**

*** Classification**

- [Hydrogen peroxide] : H271, H332, H302, H314

○ **U.S. Federal regulations**

*** OSHA PROCESS SAFETY (29CFR1910.119)**

- [Hydrogen peroxide] : 3401.9925 kg 7500 lb

*** CERCLA Section 103 (40CFR302.4)**

- Not applicable

*** EPCRA Section 302 (40CFR355.30)**

- [Hydrogen peroxide] : 453.599 kg 1000 lb

*** EPCRA Section 304 (40CFR355.40)**

- [Hydrogen peroxide] : 453.599 kg 1000 lb

*** EPCRA Section 313 (40CFR372.65)**

- Not applicable

○ **Rotterdam Convention listed ingredients**

- Not applicable

○ **Stockholm Convention listed ingredients**

- Not applicable

○ **Montreal Protocol listed ingredients**

- Not applicable

16. OTHER INFORMATION

A. Reference

- The information contained herein is believed to be accurate. It is provided independently of any sale of the product for purpose of hazard communication. It is not intended to constitute performance information concerning the product. No express warranty, or implied warranty of merchantability or fitness for a particular purpose is made with respect to the product or the information contained herein.
- This Safety Data Sheet was compiled with data and information from the following sources: KOSHA, NITE, ESIS, NLM, SIDS, IPCS

B. Issue date

- 2019-07-02

C. Revision number and Last date revised

- 3 times, 2025-01-03

D. Other

- This SDS is prepared according to the Globally Harmonized System (GHS).