

	Safety Data Sheet (SDS)	Revision : 0.0
	STERPACK plus	Issue date : 2023.07.28
		SDS Doc. # : PLA-SDS-STERPACK plus

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1. Product and Company Identification

A. Product Name

- STERPACK plus Cassettes

B. Recommended Use and Restriction on Use

a. Recommended Use

- Product for sterilisation

b. Recommended Restriction

- For use only with STERLINK FPS-15s Plus and STERLINK plus.

C. Manufacturer/Importer/Supplier/Distributor information

Company name	: Plasmapp Co., Ltd.
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2. HAZARDS IDENTIFICATION

A. GHS Classification

Oxidizing liquids	: Category 2
Skin corrosion/irritation	: Category 1
Serious eye damage/irritation	: Category 1
Chronic aquatic toxicity	: Category 3

B. GHS Label Elements

a. Hazard symbols



b. Signal Word

- DANGER

c. Hazard Statements

H272 May intensify fire; oxidizer
H314 Causes severe skin burns and eye damage
H318 Causes serious eye damage
H412 Harmful to aquatic life with long lasting effects
H332 Harmful if inhaled

d. Precautionary Statements

1) Prevention

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P220 Keep/Store away from clothing//combustible materials.
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P264 Wash hands thoroughly after handling.
P221 Take any precaution to avoid mixing with combustibles
P261 Avoid breathing dust / fume / gas / mist / vapors / spray
P271 Use only in well-ventilated area
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.

2) Response

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.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses.
P305+P351+P338: If it's on your eyes, wash it carefully with water for a few minutes.
Continue rinsing.
P310 Immediately call a POISON CENTER or doctor/physician.
P321 Specific treatment
P363 Wash contaminated clothing before reuse.
P370+P378 In case of fire: Use Suitable extinguishing media for extinction(Refer Section MSDS 5).

P312 Call a POISON CENTER or doctor/physician if you feel unwell

3) Storage

P405: Store locked up.

4) Disposal

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

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	CAS No.	Contents (%)
Hydrogen peroxide	7722-84-1	58 - 59.5

4. FIRST-AID MEASURES

A. Eye Contact

Immediately flush eyes with plenty of water or saline for at least 20-30 minutes and call a doctor/physician.
Get medical attention immediately.
Remove contact lenses if worn.

B. Skin Contact

Flush skin with plenty of water for at least 20 minutes while removing contaminated clothing and shoes, then wash with suds
Flush skin and eye for 5 minutes with water, then rub skin with calcium/jelly mixture, and wash eyes for 15 minutes with water solution
Wash contaminated clothing thoroughly before re-using.
Get medical attention if pain or irritation continues
Remove contaminated gears immediately and flush skin with soap and water
Wash with plenty soap and water
Remove contamination completely when reusing footwear
Contaminated Clothing has risks of fire hazard when dried

C. Inhalation

Expose to fresh air and oxygen
Perform artificial respiration with appropriate device (Avoid mouth to mouth resuscitation if patient has inhaled or ingested the product)
Transfer the patient to hospital swiftly and seek for medical attention
Provide oxygen when patient has trouble breathing
Move to fresh air and rest in stable condition.

D. Ingestion

Do not induce vomit
Clear airway and place the patient in recumbent position with body elevated above patient's head if unconscious
If conscious, wash patient's mouth and provide patient drinks(water, milk) cautiously, then transfer to hospital
Get medical attention immediately if swallowed
Wash mouth thoroughly
Get medical attention immediately ; rinse mouth with water
Move patient to fresh air, rest in position comfortable to breathe

E. Notes to physician

Notify medical personnel of contaminated situations and have them take appropriate protective measures.
Keep subject warm and rested
Get medical examination if feeling uncomfortable
If inhaled/ingested large amount, contact detox specialist

5. Fire FIGHTING MEASURE

A. Suitable (Unsuitable) extinguishing media

Suitable extinguishing media : Water, Use dry sand or soil to extinguish by smothering
Unsuitable extinguishing media : A fire extinguishing agent other than water.

B. Specific hazards arising from the chemical

Toxic gas(Carbon Monoxide), dissolves to water and hydrogen when heated radically
Can induce explosion by decomposition working as metal catalyst

C. Special protective actions for firefighters

Protective equipment: respiratory protection higher than gas masks for organic compounds, safety gloves.
Avoid inhalation of materials or combustion by-products.
Appropriate evacuation distance when fire during transport: 0.8km radius
Cool containers with water until well after fire is out.
Do not approach the tank surrounded by fire until it is extinguished.
In case of conflagration, use automatic fire sprinkler. Major fire may require withdrawal.
Keep unauthorized personnel out.
Be aware of using water since it may induce heat up and contamination of the area
Keep the area ventilated, be cautious of friction or contact
Wear protective equipment and work in ventilated area
Wear respiratory protection when working in condition that exceeds exposure standards
Avoid sunlight when storing
Rinse with substance directed by manufacturer when contacted
Seek for medical examination when feeling discomfort after accident
Soak the area with large amount of water in safe distance
Keep safe distance and use tarpaulin/automatic hose controller

Do not let water permeating the container and prevent leakage to waterways

6. ACCIDENTAL LEAKAGE MEASURES

A. Personal precautions, protective equipment and emergency procedures

Wash away the leakage with plenty water
Handle the damaged containers or spilled material after wearing appropriate protective equipment
Work in well-ventilated area
Must work against the wind, let the upwind people to evacuate.
Remove all sources of ignition.

B. Environmental precautions

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

C. Methods and materials for containment and cleaning up

Appropriate container for disposal of spilled material collected.
Dike for later disposal.
Disposal of waste shall be in compliance with the Wastes Control Act
Small spill : Wash away with plenty water
Large spill : Work under supervision of an expert when cleaning/disposal.
Absorb with non-flammable materials such as dry sand/soil and move to safe area when disposing
Can intensify dissolution with bicarbonate

7. HANDLING AND STORAGE

A. Precautions for safe handling

Avoid contact with incompatible materials.
Do not inhale/ingest when employing
Wash contaminated clothes before reusing
Wash hands thoroughly after handling
Do not handle until all safety precautions have been read and

B. Conditions for safe storage

Avoid direct sunlight and store in well-ventilated place
Keep away from combustibles and organic matters such as metal powder
Prevent penetration of other substances/damage to container and beware
Keep sealed in light plastic container and store in condition with
Rinse the used container thoroughly with water
Store the container away from heat, direct sunlight and combustibles

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

A. Exposure limits

a. ACGIH TLV

[Hydrogen peroxide] : TWA, 1 ppm (1.4 mg/m³)

b. OSHA PEL

[Hydrogen peroxide] : 1.4

B. Engineering controls

Business owner is recommended to maintain below recommended exposure limits for the working place.
Seek advice of expert when needed
Isolate the facility in safe place

C. Individual protection measures, such as personal protective equipment

a. Respiratory protection

Any air-purifying respirator with a full facepiece and an organic vapor canister.
Any chemical cartridge respirator with a full facepiece and organic vapor cartridge(s).
Any chemical cartridge respirator with organic vapor cartridge(s).
Consider warning properties before use.
For Unknown Concentration or Immediately Dangerous to Life or Health
Respiratory protection is ranked in order from minimum to maximum.
Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.

b. Eye protection

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

c. Hand protection

Wear appropriate chemical resistant glove.

d. Skin protection

Wear appropriate chemical resistant protective clothing.

9. Physical and Chemical Properties

Appearance : Liquid.
Odor : None to slight smell of Ozone
Odor Threshold : No data available
pH : 7722-84-1: pH 5.1 (90%)

Melting point/Freezing point : 7722-84-1: -0.43°C

Initial boiling point and boiling point range : 7722-84-1: 152°C

Flash point : Not available

Evaporation Rate : No data available

Flammability (solid, gas) : No data available

Upper/lower limits of ignition or explosion range. : No data available

Vapor Pressure : 7722-84-1: 1.97mmHg (25°C)

Solubility : No data available

Vapor Density : 7722-84-1: 1.17

Specific gravity : 7722-84-1: 1.44 (25°C)

Decomposition Heat : No data available

Viscosity : 7722-84-1: 1.25cP

Molecular Weight : 7722-84-1: 34.01

10. STABILITY AND REACTIVITY

A. Chemical Stability and Possibility of hazardous reactions

Highly unstable compound that dissolves to hydrogen and water.
Dissolves faster when contacted/mixed with rough surface, metal or any matters
Alkaline or metal powder intensified dissolution
May cause ignition to flammables
Explosion may occur by attrition, heat, or contamination
May cause severe injury or burn if exposed to steam
Non-flammable, but emits flammable vapor when decomposed to oxygen

B. Conditions to avoid

Not available

D. Incompatible material

Alkaline, metal powder, copper, chrome, iron, metal or metal salts, alcohols, acetone, organic matters, combustible liquid, combustibles, specified

E. Hazardous decomposition products

May emit flammable vapor if involved in fire.

11. Toxicological Information

A. Information on the likely routes of exposure

- a. Respiratory tracts
Not available
- b. Oral
Not available
- c. Skin contact.
Not available
- d. Eye contact.
Not available

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

Acute toxicity.	Oral	Product (ATEmix) : 2000mg/kg < ATEmix <= 5000mg/kg Water : LD50 > 90000 mg/kg Rat (LD50 > 90 ml/kg) (HSDB) Hydrogen peroxide : LD50 693.7 mg/kg Rat (OECD Guideline 401, GLP)
	Dermal	Not available
	Inhalation	Product (ATEmix) : 0mg/L < ATEmix <= 0.5mg/L Hydrogen peroxide : Steam LC50 > 170 mg/m ³ 4 hr Rat (OECD TG 403, GLP)
Skin corrosion/irritation		Causes severe skin burns and eye damage
Respiratory sensitization		Not available
Skin sensitization		Not available
Carcinogenic.		* 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
Aspiration hazard	Not available

12. ECOLOGICAL INFORMATION

A. Ecotoxicity

Fish	[Hydrogen peroxide] : LC50 16.4 mg/l 96 hr Pimephales promelas (USEPA method)
Crustaceans	[Hydrogen peroxide] : LC50 2.4 mg/l 48 hr Daphnia pulex (USEPA method)
Algae	[Hydrogen peroxide] : ErC50 1.38 mg/l 72 hr Skeletonema costatum (Paris Commission guidelines1990, GLP)

B. Persistence and degradability

Persistence	[Hydrogen peroxide] : log Kow -1.36
Degradability	Not available

C. Bioaccumulative potential

Bioaccumulative potential	Not available
Biodegradation	[Hydrogen peroxide] : 99 % 30 day (OECD 209, GLP)

D. Other adverse effects

[Hydrogen peroxide] : crustaceans, Daphnia magna NOEC 21 day = 0.63 mg/l, flow- through test GLP, ASTM Designation E 1193-97

13. Disposal Considerations

A. Disposal method

Dispose in accordance with wastes control act

B. Special precautions for disposal

Dispose of waste by neutralization/hydrolysis/oxidation/reduction in accordance with all applicable laws and regulations.

14. TRANSPORT INFORMATION

- A. UN No.(IMDGCODE/IATA DGR) : 2014
- B. UN's proper shipping name: HYDROGEN PEROXIDE, AQUEOUS SOLUTION
- C. Transport risk rating: 5.1
- D. Container rating: II
- E. Marine pollutants: N/A
- F. Safety measures that the user needs to know about the means of transportation or that are specifically necessary.
 - Emergency measures in case of fire: F-H
 - Emergency measures in case of leakage: S-Q

15. REGULATORY INFORMATION

A. National and/or international regulatory information

A. POPs Management Law

[Water] : Not applicable
 [Hydrogen peroxide] : Not applicable

B. Information of EU Classification

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

C. U.S. Federal regulations

OSHA PROCESS SAFETY (29CFR1910.119)
 [Hydrogen peroxide] : 3401.9925 kg 7500 lb
 California Prop 65: This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.
 CERCLA Section 103 (40CFR302.4)
 Not applicable
 EPCRA Section 302 (40CFR355.30)
 [Hydrogen peroxide] : 453.599 kg 1000 lb
 EP

16. OTHER INFORMATION

A. Reference

ECHA

National library of medicine

SIDS

NITE

NCIS

KFI

KOSHA

IARC

ACGIH

Key info guide for accident preparedness substances

Pubchem

B. Disclaimer

Plasmapp. Co., Ltd. cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used.

It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use.

The information in the sheet was written based on the best knowledge and experience currently available.