SAFETY DATA SHEET

According to 29 CFR 1910.1200

HYDROGEN PEROXIDE

Date of issue: September 01, 2023 **Revision date:** - **Version:** 1

SECTION 1.- IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

1.1 Product identifier

Product form	Liquid
Substance name	Hydrogen peroxide
CAS No.	7722-84-1
Formula	H_2O_2
Synonyms	Not available

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

Use of the substance/mixture Fertilizers

1.3 Details of the supplier of the safety data sheet

Química Pima, S.A. de C.V.
Del Cobre 20, Parque Industrial Hermosillo
Hermosillo, Sonora, México. C.P. 83297 Tel. 011 (662) 251-0010 / (662) 251-0316
ventas@qpima.com
www.qpima.com

1.4 Emergency telephone number

Emergency number CHEMTREC (24HR Emergency Telephone), call: 1-800-424-9300

SECTION 2.- HAZARD IDENTIFICATION

2.1 GHS-US classification

Acute Oral Toxicity	4	H302
Skin Corrosion/Irritation	1B	H314
Serious Eye Damage/Eye Irritation	1	H318
Flammable Liquids.	2	H272
Acute Toxicity (Inhalation)	4	H332
Target Organ Systemic Toxicity (Single Exposure)	3	H335

2.2 Label elements

GHS-US labelling

Hazard pictograms (GHS-US)

Signal Word (GHS-US): Danger

Hazard statement (GHS-US):
H302 Harmful if swallowed
H314 Causes severe skin burns and eye damage.
H318 Causes serious eye damage.
H272 May intensify fire; oxidizer
H332 Harmful if inhaled
H335 May cause respiratory irritation.

Precautionary statements (GHS-US):
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P220 Keep away from combustible materials.

P221 Take any precaution to avoid mixing with combustibles.
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P264 Wash your hands thoroughly after handling.
P270 Do no eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P301+P312+P330+P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor/physician.
P303+P310+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Immediately call a POISON CENTER or doctor/physician.
P304+P312+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
P305+P310+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present, and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.
P370+P378 In case of fire: Use water for extinction.
P363 Wash contaminated clothing before reuse.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.
P501 Dispose of contents/container in accordance with federal, state, and local regulations.

2.3 Other hazards

Keep the container in a cool place and protected from direct sunlight. Store only in ventilated containers. Do not store on wooden pallets. Do not return unused material to its original container. Avoid contamination - Contamination could cause decomposition and oxygen generation, which can lead to high pressure and possible container rupture. Empty drums should be rinsed three times with water before disposal.

2.4 Unknown acute toxicity (GHS-US)

Not applicable

SECCIÓN 3.- COMPOSITION / INFORMATION OF INGREDIENTS

3.1 Substance

Name	***Product identifier***	***%***
Hydrogen peroxide	(CAS No.) 7722-84-1	35 - 50
Water	(CAS No.) 7732-18-5	65 - 50

3.2 Mixture

Not applicable

SECCIÓN 4.- FIRST AID MEASURE

4.1 Description of first aid measure

First-aid measures general

Check vital signs. Unconscious: keep airways clear and provide breathing assistance. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform CPR. Conscious victim with breathing difficulty: semi-upright position. Victim in shock: lying on back with legs slightly elevated. Vomiting: prevent choking or aspiration. Avoid cooling by covering the victim (without heating). Continue monitoring the victim. Provide psychological support. Keep the victim calm, and avoid physical strain. Depending on the victim's condition: seek medical attention/hospital. Never give anything by mouth to an unconscious person. If feeling unwell, seek medical attention (if possible, show the label).

First-aid measures after eye contact

Seek medical attention immediately. Call a medical center. Rinse eyes immediately with plenty of water, occasionally lifting the upper and lower eyelids. Remove contact lenses if worn and easily removable. Continue rinsing for at least 20 minutes. Chemical burns should be treated immediately by a doctor. Rinsing the eyes within seconds is essential to achieve maximum effectiveness. Do not transport the victim until the recommended rinsing period has ended, unless rinsing can be continued during transport.

First-aid measures after skin contact

Immediately remove contaminated clothing and footwear. Wash the affected area immediately with plenty of water for at least 15-20 minutes, repeating the washing if irritation persists. Seek medical attention immediately, as untreated cauterizations can become difficult-to-heal wounds. If the patient needs to be transported to a hospital, continue washing during the transport. Never apply creams or ointments. Wash contaminated clothing before reuse.

First-aid measures after inhalation

Move the victim to fresh air. If the person is not breathing, contact emergency medical services, then perform artificial respiration, preferably mouth-to-mouth if possible. Call a doctor for further treatment advice.

First-aid measures after ingestion

DO NOT INDUCE VOMITING. If the victim is alert and not convulsing, rinse their mouth and give them two glasses of water to dilute the material. If spontaneous vomiting occurs, have the victim lean forward with their head down to avoid aspirating the vomit, rinse their mouth, and give them more water. Transport the victim IMMEDIATELY to a medical facility.

4.2 Most important

Symptoms/injuries after inhalation

Hydrogen peroxide irritates the respiratory system and, if inhaled, can cause inflammation and pulmonary edema. The effects may not be immediate. Symptoms of overexposure include coughing, dizziness, and sore throat.

Symptoms/injuries after skin contact

In case of skin contact, it can cause burns, erythema, blisters, or even necrosis.

Symptoms/injuries after eye contact

It can cause severe burns and corneal damage, which may result in permanent blindness.

Symptoms/injuries after ingestión

It can cause burns to the mucous membrane (mouth, esophagus, and stomach) and subsequent tissue necrosis. The rapid release of oxygen can cause swelling and hemorrhaging in the stomach, potentially causing significant, or even fatal, injuries to the organs if a large amount has been ingested.

Chronic symptoms

No data available.

4.3 Indications of any immediate medical attention and special treatment needed

Hydrogen peroxide at these concentrations is a strong oxidizer. Direct contact with the eye is likely to cause corneal damage, especially if not washed immediately. Careful ophthalmological evaluation is recommended, and local corticosteroid treatment should be considered. Due to the likelihood of corrosive effects on the gastrointestinal tract after ingestion, and the improbability of systemic effects, attempts to evacuate the stomach by inducing emesis (vomiting) or gastric lavage should be avoided. However, there is a remote possibility that a nasogastric or orogastric tube may be required to reduce severe distension due to gas formation.

SECCIÓN 5.- FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media Water

Unsuitable extinguishing media Do not use any other substance.

5.2 Special hazard arising from the substance or mixture

Fire hazard In closed containers without ventilation, there is a risk of rupture due to increased pressure from decomposition. Contact with combustible material may cause a fire. In decomposition, the product releases oxygen which can intensify the fire.

Explosion hazard In closed containers without ventilation, there is a risk of rupture due to increased pressure from decomposition.

Reactivity Reactive and oxidizing agent.

5.3 Advice for firefighters

Precautionary measures fire Use water spray to cool exposed surfaces and protect personnel. If a tank truck or tanker is involved in a fire, ISOLATE it and consider evacuation within a 0.8 km radius.

Firefighting instructions Move containers from the fire area if it can be done without risk. As with any fire, use self-contained breathing apparatus and full protective gear.

Protection during firefighting Use a self-contained breathing apparatus. Structural firefighting protective clothing provides limited protection in fire situations ONLY; it may not be effective in spill situations. For major spills, use chemical protective clothing specifically recommended by the manufacturer. This may provide little or no thermal protection.

SECCIÓN 6.- ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment, and emergency procedures

6.1.1 For non-emergency personnel

Protective equipment Use the recommended protective equipment in section 8.

Emergency procedures Follow established emergency procedures. Only properly equipped, trained, and functional personnel should attempt to contain a leak. All other personnel should be evacuated from the danger area.

Measures in case of dust release Avoid the formation of vapors/mist. In case of prolonged exposure and/or high concentrations of vapors in the air, use a half-face respirator, full-face respirator, or SCBA according to applicable regulations.

6.1.2 For emergency responders

Avoid contact with skin, eyes, and clothing. Use personal protective equipment. Isolate and cordon off the spill area. Keep people away and upwind of the spill/leak. Remove all sources of ignition and combustible materials. Combustible materials exposed to hydrogen peroxide should be immediately submerged or rinsed with large amounts of water to ensure all hydrogen peroxide is removed. Residual hydrogen peroxide left to dry (water evaporation causes hydrogen peroxide to concentrate) on organic materials such as paper, fabrics, cotton, leather, wood, or other combustible materials may cause the material to ignite and start a fire.

6.2 Environmental precautions

See section 12.

6.3 Methods and material for containment and cleaning up

Method for containment Stop the leak and contain the spill if it can be done safely, then collect it, especially for large liquid spills. For small spills, dilute with large amounts of water.

Method for cleaning up Rinse the area with large amounts of water. Hydrogen peroxide can be decomposed by adding sodium metabisulfite or sodium sulfite after diluting to approximately 5%.

6.4 Reference to other sections

For further information refer to section 8: Exposure-controls/personal protection

SECTION 7.- HANDLING AND STORAGE

7.1 Precautions for safe handling

Precautions for safe handling Use only in well-ventilated areas. Keep/store away from clothing/combustible materials. Use personal protective equipment. Never return unused hydrogen peroxide to the original container. Contamination can cause decomposition and oxygen gas generation, which could result in high pressures and possible container rupture. Empty drums should be rinsed three times with water before disposal. Utensils used for handling hydrogen peroxide should only be made of glass, stainless steel, aluminum, or plastic. Piping and equipment should be passivated before initial use. Hydrogen peroxide should be stored only in vented containers and transferred only in the prescribed manner.

Hygiene measures Wash hands, forearms, and face thoroughly after handling chemicals, before eating, smoking, using the restroom, and at the end of the work period. Use appropriate techniques to remove contaminated clothing. Wash contaminated clothes before reuse. Ensure that eye wash stations and safety showers are located near workstations.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions Keep containers in cool areas away from direct sunlight and away from combustibles. Provide general and/or local mechanical ventilation to prevent the release of vapor or mist into the work environment. Containers should be ventilated. Store only in the original container. Warehouses should be made of non-combustible materials with impermeable floors. Containers should be visually inspected regularly for any abnormalities (temperature increase, etc.).

Incompatible products Incompatible with combustible materials, copper alloys, galvanized iron, strong reducing agents, heavy metals, and iron.

Heat-ignition Contact with metals, metal ions, alkalis, reducing agents, and organic matter (such as alcohols or terpenes) can cause self-accelerated thermal decomposition.

Storage area Keep containers in cool areas away from direct sunlight and away from combustibles. Provide general and/or local mechanical ventilation to prevent the release of vapor or mist into the work environment. Containers should be ventilated.

Special rules on packaging Store in a tightly sealed, dry, clean, and properly labeled container. Comply with applicable regulatory requirements. Secure fragile packaging in sturdy containers.

Packaging materials No data available

7.3 Specific end use(s)

No additional information is available

SECTION 8.- EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Name	*ACGIH TLV*	*OSHA PEL*	*NIOSH IDLH*
Hydrogen peroxide	TWA: 1 ppm	TWA: 1 ppm	TWA: 1 ppm (Mexico)

7722-84-1		TWA: 1.4 mg/m^3	TWA: 1.5 mg/m^3 (Mexico) STEL: 2 ppm (Mexico) STEL: 3 mg/m^3 (Mexico)

8.2 Exposure controls

Appropriate engineering controls Make sure eye wash stations and safety showers are located near the workstation. Ensure adequate ventilation.

Personal protective equipment Chemical splash goggles and face shield, gloves, boots, protection suit, self-contained breathing apparatus (SCBA), or another approved respirator (ASR)

Material for protective clothing Gloves made of nitrile, PVC, or neoprene. Splash goggles and a face shield made of polycarbonate, acetate, polycarbonate/acetate, PETG, or thermoplastic. Impermeable clothing such as an approved splash protection suit made of SBR rubber, PVC, Gore-Tex, or a special HAZMAT or protective suit. Boots made of NBR, PVC, polyurethane, or neoprene.

Hand protection For hand protection, use approved gloves made of nitrile, PVC, or neoprene. DO NOT use cotton, wool, or leather as these materials react QUICKLY with most concentrations of hydrogen peroxide. Thoroughly rinse the outside of the gloves with water before removing them. Regularly inspect for leaks.

Eye protection Use chemical splash goggles and a face shield made of polycarbonate, acetate, polycarbonate/acetate, PETG, or thermoplastic.

Skin and body protection For body protection, use impermeable clothing such as an approved splash protection suit made of SBR rubber, PVC (PVC Outershell with polyester substrate), Gore-Tex (polyester trilaminate with Gore-Tex), or a special HAZMAT or protective suit (Level A, B, or C). For foot protection, wear approved boots made of NBR, PVC, polyurethane, or neoprene. Latex or PVC overboots, as well as a firefighter or specialized HAZMAT boots, are also permitted. DO NOT use any form of boot or overboot made of nylon or nylon blends. DO NOT USE cotton, wool, or leather as these materials react quickly with higher concentrations of hydrogen peroxide. Completely immerse contaminated clothing in water before drying. Residual hydrogen peroxide, if allowed to dry on materials such as paper, fabrics, cotton, leather, wood, or other combustibles, can cause the material to ignite and start a fire.

Respiratory protection If concentrations above 10 ppm are expected, an approved self-contained breathing apparatus (SCBA) or another approved respirator (ASR) must be used. DO NOT use any type of air-purifying respirator (APR) or filtering mask (dust mask), especially those containing oxidizable sorbents such as activated carbon.

Environmental exposure controls Avoid release to the environment.

SECTION 9.- PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical state	Liquid
Appearance	Colorless liquid
Odor	Odorless
Color	Colorless
Molecular mass	34 g/mol
Odor threshold	No data available
pH	< 3.0

pH solution	No data available
Relative evaporation rate (butyl acetate = 1)	> 1
Melting/Freezing point	-52 ºC
Boiling point	114 ºC
Flash point	No data available
Self-ignition temperature	No data available
Decomposition temperature	100 ºC (adiabatic)
Flammability (solid, gas)	No data available
Vapor pressure	18 mmHg (30 ºC)
Relative vapor density at 20 ºC	No data available
Relative density	1.13 – 1.20
Solubility	100% in water
Log Pow	No data available
Log Kow	-1.5 (20 ºC)
Viscosity, kinematic	1.17 cP (20 ºC)
Viscosity, dynamic	No data available
Explosive properties	No data available
Oxidizing properties	Strong oxidizer
Explosive limits	No data available

9.2 Other information

No additional information is available

SECTION 10.- STABILITY AND REACTIVITY

10.1 Reactivity	Reactive and oxidizing agent
10.2 Chemical stability	Stable under normal conditions. Decomposes upon heating. Stable under recommended storage conditions.
10.3 Possibility of hazardous reactions	The contact with organic substances can cause fire or explosion. Contact with metals, metal ions, alkalis, reducing agents, and organic matter (such as alcohols or terpenes) can lead to self-accelerated thermal decomposition.
10.4 Conditions to avoid	Excessive heat, contamination, exposure to UV rays, pH variations.
10.5 Incompatible materials	Combustible materials. Copper alloys, galvanized iron. Strong reducing agents. Heavy metals. Iron. Contact with metals, metallic ions, alkalis, strong reducing agents, and organic matter (such as alcohols or terpenes) can lead to self-accelerated thermal decomposition.
10.6 Hazardous decomposition products	Supports combustion. Overpressure may occur in the container.

SECTION 11.- TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Likely routes of exposure	Skin and eyes contact, inhalation, and ingestion.
Acute toxicity	Gastrointestinal effects: Ingestion exposure can cause irritation, inflammation, and perforation of the upper gastrointestinal tissues, including death.

Skin corrosión/irritation	Skin exposure can cause redness, itching, irritation, swelling, burns (first, second, or third degree), liquefaction of the skin, and damage to underlying tissues (deep and painful wounds).
Serious eye damage/irritation	Serious eye damage. Eye exposures may cause burns to the eyelids, conjunctivitis, corneal edema, corneal burns, corneal perforation, eye content damage, permanent visual defects, and blindness and/or loss of the eye.
Respiratory or skin sensitization	Exposure to airborne material can cause irritation, redness of the lower airways, coughing, laryngeal spasm and edema, difficulty breathing, bronchoconstriction, and possibly pulmonary edema.
Germ cell mutagenicity	No data available
Carcinogenicity	This product contains hydrogen peroxide. The International Agency for Research on Cancer (IARC) has concluded that there is inadequate evidence of the carcinogenicity of hydrogen peroxide in humans, but there is limited evidence in experimental animals (Group 3 - not classifiable as to its carcinogenicity to humans). The American Conference of Governmental Industrial Hygienists (ACGIH) has concluded that hydrogen peroxide is a "confirmed animal carcinogen with unknown relevance to humans" (A3).
Reproductive toxicity	No data available
Specific target toxicity (single exposure)	Puede causar irritación en las vías respiratorias.
Specific target toxicity (repeat exposure)	No data available
Aspiration hazard	Puede causar daño pulmonar si se inhala.

Name	LD_{50} oral	LD_{50} dermal	LC_{50} inhalation
Hydrogen peroxide	> 225 mg/kg (rat)	> 2000 mg/kg (rabbit)	> 170 mg/m^3 (4 h, rat)

SECTION 12.- ECOLOGICAL INFORMATION

12.1 Toxicity

Ecology – General	No data available
Ecology – Air	Hydrogen peroxide is naturally produced by sunlight (between 0.1 and 4 ppb in the air and 0.001 to 0.1 mg/L in water). It is not expected to have significant environmental effects.
Ecology – Water	This material is toxic to fish and aquatic organisms. LC_{50} *Pimephales promelas* (16.4 mg/l, 96 h). LC_{50} *Leuciscus idus* (35 mg/l, 72 h). EC_{50} *Daphnia pulex* (2.4 mg/l, 48 h). EC_{50} *Daphnia magna* (7.7 mg/l, 24 h). EC_{50} *Skeletonema costatum* (1.38 mg/l, 72 h). NOEC *Daphnia magna* (0.63 mg/l, 21 d).

12.2 Persistence and degradability

Hydrogen peroxide in the aquatic environment is subject to various reduction or oxidation processes and decomposes into water and oxygen. The half-life of hydrogen peroxide in freshwater ranged from 8 hours to 20 days, in air from 10 to 20 hours, and soils from minutes to hours, depending on microbial activity and metal contamination.

12.3 Bioacumulative potential

The material may have some potential for bioaccumulation, but it is likely to degrade in most environments before accumulation can occur.

12.4 Mobility in soil

It is likely to be mobile in the environment due to its water solubility, but it is likely to degrade over time.

12.5 Other adverse effects

Other information It decomposes into oxygen and water.

SECCIÓN 13.- INFORMACIÓN RELATIVA A LA ELIMINACIÓN DE LOS PRODUCTOS

13.1 Waste treatment methods

Waste treatment methods	Dispose of following local regulations. They can be disposed of as wastewater when they comply with local regulations. This product can be neutralized with sodium bisulfite, sodium thiosulfate, and sodium sulfite.
Waste disposal recommendations	Dispose of following local regulations. Drums: empty as completely as possible. Rinse drums before disposal. Avoid contamination. Impurities accelerate decomposition. Never return the product to the original container.

SECTION 14.- TRANSPORT INFORMATION

14.1 UN Number	2014
14.2 UN proper shipping name	HYDROGEN PEROXIDE, AQUEOUS SOLUTION, WITH NOT LESS THAN 20% BUT NOT MORE THAN 60% HYDROGEN PEROXIDE (STABILIZED AS NECESSARY)
14.3 Class of hazards in transportation	5.1
14.4 Packaging group	II
14.3 Additional information	
Other information	No supplementary information is available.
Overland transport	No additional information is available.
Transport by sea	No additional information is available.
Air transport	No additional information is available.

SECTION 15.- REGULATORY INFORMATION

International inventories

No data available.

Abbreviations

TSCA – Toxic Substances Control Act Inventory Section 8(b).

DSL/NDSL - Domestic Substance List/Non-Domestic Substance List.

US Federal Regulations: This product does not contain chemicals that are subject to the reporting requirements of the Emergency Planning and Community Right-to-Know Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Categories.

Acute Health Hazard	Yes	Chronic Health Hazard	No	Fire Hazard	Yes

Sudden Hazardous Pressure Release No Reactive Hazard No

Clean Water Act. No data available

CERCLA. No data available

Applicable national standards. No data available

SECTION 16.- OTHER INFORMATION

NFPA	NFPA health Hazard	3	NFPA fire Hazard	0	NFPA instability Hazard	1	NFPA Special hazard	OX
HMIS III	Health	3	Flammability	0	Physical	1	Personal protection	H

Goggles for splash, gloves, apron, and respirator for vapors

H

Made for: Química Pima, S.A. de C.V. Del Cobre No. 20 Parque Industrial. Hermosillo, Sonora, México. 83297.

Date of issue: September 01, 2023

Revision date: -

Revision note: -

IMPORTANT NOTE: Information in this SDS is from available published sources and is believed to be accurate, but is not exhaustive and will be used only as a guide, which is based on current knowledge of the chemical substance or mixture and applied to the appropriate product for safety precautions. No warranty, express or implied, is made and Pima Chemicals & Fertilizers, LLC and Quimica Pima, S.A. de C.V. assumes no liability resulting from the use of this SDS. The user must determine the suitability of this information for his application.

End of Safety Data Sheet