

Product name: Phosphoric Acid, 85%

Issue date: 04/01/2024

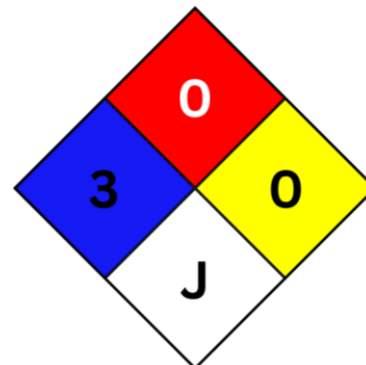
CAS N°: 7664-38-2

UN N°: 1805

EC N°: 231-633-2

HMIS (U.S.A):

- Harmful to Health: 3
- Danger of Fire: 0
- Reactivity: 0
- Personal protection measures: J



Registration in the list of other countries: No Data

Lavita International Joint Stock Company advises thoroughly reading and comprehending the entire MSDS, as it contains crucial information. It is expected that you adhere to the precautions outlined in the document, unless your specific usage conditions require alternative methods or actions.

1. Product and Company Identification

Product Name: Phosphoric Acid, 85 %

Synonyms: Orthophosphoric Acid, Hydrogen Phosphate.

Company Identification: **Lavita International Joint Stock Company**
 Tang Loong Industrial Zone, Tang Loong Town
 Bao Thang District, Lao Cai Province, 31216
 Vietnam

Email: info@lavitajsc.com

Customer Information Number: +84 (214) 386 2833

Emergency Telephone Number: +84 (214) 386 2833

Purpose of use: primarily used to produce phosphate products, oil or sugar refining, yeast culture, metal surface cleaners, industrial biotechnology, etc.

2. Composition, Information on Ingredients

Chemical Name	CAS #	Chemical Formula	Content (% by Weight)
Phosphoric Acid	7664-38-2	H ₃ PO ₄	≥ 85
Water	7732-18-5	H ₂ O	≤ 15

3. Hazards Identification

Hazard Classification: GHS

Hazard Class	Classification	Symbol	Signal Word	Hazard Statement
Acute toxicity (oral)	Category 4 based on: SPECIES: Rat; ENDPOINT: LD50; VALUE:1530mg/kg; REFERENCE SOURCE: RTECS (2006, IUCLID,2000, HSDB, 2006), 1250mg/kg; REFERENCE SOURCE: RTECS (2006)		Warning	Harmful if swallowed
Acute toxicity (dermal)	Category 5 based on: SPECIES: Rabbit ENDPOINT: LD50 VALUE: 2740mg/kg REFERENCE SOURCE: (RTECS2006, IUCLID2000, HSDB2006).	–	Warning	May be harmful in contact with skin
Skin corrosion / Irritation/ Serious eye damage / eye irritation	Category 1A- 1C based on the effects of exposure for 24 hours, there are description that caustic was admitted in the test which applied 75-85% aqueous solutions to the rabbit skin (IUCLID (2000)), and pH of 0.1N aqueous solutions was strong acids of 1.5.		Danger	Causes severe skin burns and eye damage

NFPA 704 (USA) :H 3 F 0 R 0

EU: C (Corrosive)

R: 34 (Causes Burn)

S: (1 / 2) - 26 – 45

3.1 Warning

- Avoid skin and eye contact, harmful to aquatic environments.
- Reacts with metals to release flammable hydrogen gas. Metal reactions produce hydrogen, a flammable gas. Causes corrosion and moderate oxidation.

3.2 Exposure and Symptoms

This chemical can be absorbed by the body through inhalation or ingestion.

- Eye Contact: Pain, redness, blurred vision, severe burns.
- Skin Contact: Redness, pain, burns, blistering.
- Inhalation: Burning sensation, coughing, rapid breathing, sore throat.
- Ingestion: Abdominal pain, burning sensation, shock, collapse.

4. First Aid Measures

4.1 Eye Contact (splashes in the eye):

Immediately flush the eye with plenty of water, continuously for at least 15 minutes (remove contact lenses if easily removable). Take the person to a doctor or hospital for treatment.

4.2 Skin Contact (contact with acid):

Remove contaminated clothing, thoroughly wash the affected area with plenty of water and soap or shower. If there are signs of burns or redness, take the person to a doctor or hospital for treatment.

4.3 Inhalation (inhaling hazardous chemical vapors, gases):

Take the person to a well-ventilated area, allow them to rest, and if necessary, provide artificial respiration using a respirator. Oxygen therapy may be needed. Take the person immediately to a doctor or hospital for treatment.

4.4 Ingestion (accidentally swallowing chemicals):

Rinse the mouth, give plenty of water to drink. Do not induce vomiting. Do not administer NaHCO_3 (or soda) solution to prevent the generation of CO_2 gas pressure, which can cause gastric perforation. Take the person to a doctor or hospital for treatment.

4.5 Special emergency instructions and necessary guidelines: Follow the instructions of the doctor.

Note for treating physicians: In cases of significant inhalation or ingestion, Calcium gluconate can be used, and if the injuries are severe, intravenous injection may be necessary. Treatment should be administered by a doctor, and oral administration should not be attempted when the victim is unconscious.

5. Fire-Fighting Measures

5.1 Flammability of the Product: Non-flammable.

5.2 Toxic substances produced when burned (toxic gases): Not easily combustible. The fire may release hazardous vapors. Fires can cause the transformation of: Phosphorus oxides.

5.3 Flammable or explosive agents: No data

5.4 Suitable extinguishing media and fire-fighting measures: Use cool water from outside of acid containers, water spray, carbon dioxide or dry chemicals, not let water contact with acid, it is dangerous.

5.5 Necessary firefighting equipment: Proper firefighting equipment should be arranged in nearby locations storing chemicals. Do not stay in the hazardous area without wearing firefighting clothing, additional appropriate chemical protective clothing, and an oxygen breathing apparatus.

Remark: Reacts with metals to produce flammable hydrogen gas. Take care to prevent acid from contacting fire during combustion, which may produce smoke and evaporation. Firefighters must use oxygen masks. Ensure firefighting water contaminated with acid doesn't enter water systems./

6. Preventive Measures and Responses to Incidents

6.1 When spills or leaks occur at a small scale:

Prevent spills and leaks by isolating the affected acid area. Dilute with water and mop up, or absorb using inert dry material and dispose in a proper waste container. Neutralize residue with sodium carbonate solution if needed.

6.2 When spills or leaks occur at a large scale:

For initial treatment of small spills, follow the same procedure. Stop leaks if safe. Absorb with dry earth, sand, or non-combustible material. Avoid water entering the container or touching spilled material. Use

water spray to control vapor drift and reduce vapors. Prevent entry into sewers or confined spaces; use dikes if necessary. Neutralize residue with sodium carbonate solution. Contact key personnel for disposal assistance.

Notice:

- Use personal protective equipment, including an oxygen mask during treatment.
- Due to the potential release of flammable hydrogen gas when reacting with metals, treatment areas must be free from sparks and forced ventilation.

Acid and acidic sanitation water are prohibited from flowing into surface water sources or groundwater.

7. Handling and Storage

7.1 Precautionary measures on handling dangerous chemical:

Avoid direct contact; utilize personal protective equipment such as eye goggles, face shields, acid-resistant gloves, aprons, and shoes. Ensure proper ventilation to remove toxic gases when working with acids. Exercise caution when handling to prevent damage to the packaging.

7.2 Storage:

Avoid adding water to this product under any circumstances. Containers must be resistant to acid corrosion and not exceed permitted levels. Ensure containers are tightly closed. Store in a metallic or coated fiberboard drum with a strong polyethylene inner package. Keep away from incompatible substances like oxidizing agents, combustible materials, metals, and alkalis. Store away from heat sources and direct light. Do not place among beverages or food items. Store in a cool, well-ventilated area with proper signage indicating danger. Equip treatment facilities for potential leak incidents.

Notice: Refrain from carrying, storing, or consuming food, beverages, or tobacco products in areas where this material is being used.

7.3 Dilution:

During preparation, avoid adding water directly to acid; instead, slowly pour acid into water.

8. Exposure Control / Personal Protection

8.1 Control parameter - limits:

- Ensure storage areas have adequate ventilation; wear personal protective equipment when handling chemicals. No smoking, eating, or drinking is permitted in acid areas.
- Use proper personal protective equipment; wash working facilities before and after use.

8.2 Personal Protective Equipment for Work:

- Eye Protection: Wear goggles or face shields.
- Inhalation Protection: Use anti-acid face shields and oxygen masks.
- Body Protection: Wear anti-acid clothing or aprons.
- Hand Protection: Use anti-acid rubber or plastic gloves.
- Foot Protection: Wear anti-acid boots or shoes.

8.3 Protective Equipment for Incident Treatment:

- Personal protective gear
- Utilize forced ventilation
- Have plenty of water and decontamination chemicals available.

8.4 Sanitation Procedures:

- Flush ample water into the acid area. (Note: Acid is soluble in water and releases heat; insufficient water may cause burns.)
- Neutralize with a 1% solution of NaHCO_3 .
- Rinse the acid-exposed area thoroughly with plenty of water

9. Physical and Chemical Properties

Physical status: Clear, liquid	Boiling Point H_3PO_4 85%: 158°C
Color: Colorless	Melting Point H_3PO_4 85%: 21°C
Odor: Odorless	Flammable Point: No data available
Vapor Pressure: 2.25 mmHg at 20°C	Auto ignition temperature: No data available
Vapor Density (KK=1): 3,4	Above Flash Flammable Limit: No data available
Solubility in water: Complete	Below Flash Flammable Limit: No data available
pH: Acid at medium level	Evaporation Rate: No data available
Specific Density H_3PO_4 85%: 1.685 g/cm ³ at 20°C	NFPA Rating: (estimated) Health: 3; Flammability: 0; Reactivity: 0

10. Stability and Reactivity

10.1 Stability:

The substance is stable under normal conditions but may transform into pyrophosphoric acid and other acids upon dehydration.

10.2 Reactivity:

- Decomposition Reactivity: It decomposes upon contact with alcohols, aldehydes, cyanides, ketones, esters, sulfides, and halogenated organic substances, forming toxic fumes.
- Hazardous Reactivity: It reacts with metals to release flammable hydrogen gas and reacts strongly with bases.
- Incompatibles: It is incompatible with metals, strong bases, and iron compounds.
- Polymerization: Highly reactive

Ingredient	Parameter Limit	Result	Exposure	Tested
H_3PO_4	LD 50	1530 mg/kg bw	Oral	Rat
	LD 50	2740 mg/kg bw	Dermal	Rabbit
	LC 50 fatal	>850 mg/m ³ /1h	Steam	Rat
	LDLO	100 mg/kg bw/day	Swallow	Sheep
		200 mg/kg		Human
	TWA STEL (3733/2002 BYT)	1 mg/m ³ 3 mg/m ³	Inhalation, dermal	Human
	QCVN 06:2009	None		

	BTNMT			
	IDLD (NIOSH)	1.000mg/m ³	Inhalation, dermal	Human
	TWA PEL (OSHA)	1 mg/m ³		
	TWA REL STEL REL (NIOSH)	1mg/m ³ 3 mg/m ³	Inhalation, dermal	Human
	TWA STEL (ACGIH)	1 mg/m ³ 3 mg/m ³	Inhalation, dermal	Human

10.3 Chronic effects to human (Cancer, reproductive harm, and gene mutations...)

It is not classified as carcinogenic substances by IARC, NTP, or OSHA.

10.4 Other toxic effects:

H₃PO₄ is highly corrosive to the eyes, mucous membranes, soft tissues, and skin. Contact with the acid can result in localized pain or affect the entire body. Eye irritation may lead to conjunctivitis, corneal damage, pain, tearing, and sensitivity to light. Ingestion can cause severe pain in the oral cavity, throat, esophagus, stomach, and abdominal cavity; coughing and vomiting with brown discoloration and blood may occur. The acid is corrosive to the esophagus, stomach, and sometimes the intestine.

11. Ecological Information

11.1 Toxicity to organisms

Ingredient	Creature	Effective Cycle	Result
H ₃ PO ₄	Lepomis macrochirus	96 hours	DL 50 pH = 3.0 - 3.5
	Daphnia magna	12 hours	DL 50 pH = 4.6
	Daphnia pulex	12 hours	DL 50 pH = 4.1
	Gammarus pulex	12 hours	DL 50 pH = 3.4
	Gammarus fossarum	12 hours	DL 50 pH = 3.4

11.2 Environment effects

- Phosphoric acid (H₃PO₄) can acidify soil and release gases that are harmful to animals and plants. When dissolved in water, it can lower the pH indefinitely.
- Phosphates in water can lead to algae growth, causing eutrophication.
- When phosphoric acid or phosphate enters soil, it is absorbed and can increase soil acidity. Some soils may neutralize a portion of the acid upon absorption.
- During the process, some soils may become soluble and neutralize a portion of the acid.
- Upon landing, the acid will disperse and become diluted.
 - o The degree of biodegradation: No data.
 - o BOD and COD Index: No data.
 - o Products of biodegradation process: No data.
- The degree of toxicity of biodegradation products: No data.

12. Disposal Considerations

12.1 Disposal regulations (Legal information):

QCVN 19:2009/BTNMT: Not specified concentration of H₃PO₄ in industrial emissions.

QCVN 21:2009/BTNMT: Not specified concentration of H₃PO₄ in the chemical manufactured emissions

QCVN 40:2011/BTNMT: - A column indicator of wastewater P Total = 4 mg/l, pH = 6-9

- B column indicator of wastewater P Total = 6mg/l, pH = 5,5-9

12.2 Hazard Classification of disposal:

- Disposal Code as TT12/2001/TT-BTNMT : 02 01 04
- EC Code: 06 01 04
- Basel (A/B) Code: A 4090 B 2120
- Basel Code (Y) : Y 34
- Main hazardous property: AM, Ð, ÐS

12.3 Disposal measures:

Processing durable phosphate salt, insoluble in water or turn into agricultural fertilizers.

12.4 Products of disposal process, treatment measures:

Phosphate fertilizers

13. Transport Information

		ADR/AND/RID	IMDG	IATA
13.1	UN number	1805	1805	1805
13.2	UN proper shipping name	PHOSPHORIC ACID	PHOSPHORIC ACID	PHOSPHORIC ACID
13.3	Transport hazard class(es)	 8	 8	 8
13.4	Packing group	III	III	III
13.5	Environmental hazards	No.	No.	No.
13.6	Additional information	Hazard identification number : 80 Classification code : C1 Excepted quantities (EQ) : E1 Limited quantities (LQ) : 5 L Tunnerl restriction code (TRC) : E	Special provisions (SP) : <u>223</u> Excepted quantities (EQ) : <u>E1</u> Limited quantities (LQ) : <u>5 l</u> EmS : <u>F-A, S-B</u> Stowage category : <u>A</u> Segregation group : <u>1 - Acids</u>	Special provisions (SP) : A3 Excepted quantities : E1 Limited quantities (LQ) : 1 L

14. Regulatory Information

14.1 Registered: In Viet Nam

14.2 Hazard Classification following Registered Nation: Classified in Vietnam, Group 8

14.3 Compliance with Technical Regulations: QCVN 4-11:2010/BYT

15. Other Information

Date of Report: April 1st, 2024

Latest Modified/Supplemented Date: April 1st, 2024

Editor: Lavita International Joint Stock Company

Remarks of Readers:

Information on this MSDS is edited base on valid and updated knowledge of hazard chemicals and used to carry out preventive measures for risks, incidents. Hazard chemicals in this one may have other hazardous properties according to using condition and exposure.

