




Material Safety Data Sheet PHOSPHORIC ACID 85%			
<div>CAS N^o: 7664-38-2 UN N^o: 1805 EC N^o: 231-633-2 HMIS (U.S.A):<div><div>- Hamful to Health:3</div><div>- Danger of Fire:0</div><div>- Reactivity:0</div><div>- Personal protection Measures:</div></div>Registration in the list of other contries: No Data</div>		<div><div>Health3</div><div>Fire0</div><div>Reactivity0</div><div>Personal Protection</div></div>	
I. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION			
<div>- Common Name: Phosphoric Acid 85%</div>		Product Code HCDN-SP001	
<div>- Trade Name: Phosphoric Acid (Food grade)</div>			
<div>- Other Name: Orthophosphoric Acid Phosphoric Acid, Phosphoric Acid 85%</div>			
<div>Supplier or Importer: Victory Joint Stock Company Add: Lot F21, Phung Hung Str., Dong Pho Moi IZ, Van Hoa Commune, Lao Cai Province Purpose of Using: Producing of phosphate primary products, oil or sugar refining, yeast culture ...</div>			
II. COMPOSITION / INFORMATION ON INGREDIENTS			
Hazardous Ingredients	CAS No.	Chemical Formula	Content (% by Weight)
Phosphoric Acid	7664-38-2	H ₃ PO ₄	85
Water	7732-18-5	H ₂ O	15

III. HAZARDS IDENTIFICATION

1. Hazard Classification:

GHS

Hazard class	Classification	symbol	signal word	hazard statement	Rational for the classification
Acute toxicity (oral)	Category 4		Warning	Harmful if swallowed	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)
Acute toxicity (dermal)	Category 5	-	Warning	May be harmful in contact with skin	It was set as Category 5 based on rabbit LD50 value: 2740mg/kg (RTECS2006, IUCLID2000, HSDB2006).
Skin corrosion / irritation	Category 1A-1C		Danger	Causes severe skin burns and eye damage	Although it was 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. So it was set as Category 1A-1C.
Serious eye damage / eye irritation	Category 1		Danger	Causes serious eye damage	Since it had skin corrosiveness, it was categorized as Category 1.

NFPA 704 (USA) : H 3 F 0 R 0
 EU : C (Corrosive)
 R : 34 (Causes Burn)
 S : (1 / 2) - 26 - 45

2. Warning:

- Avoid contact with skin and eyes; harmful to aquatic environment.
- Reacts with metals to liberate flammable hydrogen gas. React metal to create H₂ which is flammable gas. Corrosive and oxidation at medium level.

3. Exposure and Symptoms:

This chemical can be absorbed on body by inhaling gas or gastrointestinal tract.

- Eye Contact: Pain, redness, blurred, severe deep burns.
- Skin Contact: Redness, pain, burns, blistering.
- Inhalation: Burning sensation, cough, rapid breathing, sore throat.
- Ingestion: abdominal pain, burning sensation, shock and collapse.

IV. FIRST AID MEASURES

- 1. Eye Contact (Throwing, touching in eye):** Rinse immediately with plenty of water for at least 15 minutes (Take out the contact lenses if possible). Obtain medical advice.
- 2. Skin Contact (Touching in skin):** Remove contaminated clothing without delay, wash immediately with plenty of water and soap or take a bath. Get medical attention if burns or red signs or irritation persists after washing.
- 3. Inhalation** (Inhaling dangerous chemicals with gas or vapor): Remove to fresh air, take the rest, if breathing is difficult, give oxygen. Get medical attention.
- 4. Ingestion** (eaten, swallowed chemical): Washing mouth, drink plenty of water. Not permit emesis. Not drink solution NaHCO₃ (or sodium), precaution arising of gas CO₂ create pressure cause stomach podium. Obtain medical advice.

<p>5. Notice for treating physician: In case someone inhaled or swallowed much chemical, it is possible to use Calcium Gluconate, if seriously damaged, should inject vein. Get medical attention immediately, never give anything by mouth to an unconscious person.</p>
<p style="text-align: center;">V. FIRE-FIGHTING MEASURES</p>
<p>1. Flammability of the Product: Non-flammable.</p> <p>2. Products created on firing: Toxic gases or allergens (phospho oxide)</p> <p>3. Flammable or explosive agents: No data</p> <p>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.</p> <p>5. Protective Equipments: Firefighting protective Clothing, wear self-contained breathing apparatus, oxygen mask.</p> <p>6. Special Remarks: Reacts with metals to liberate flammable hydrogen gas. In case of burning in acid area due to gas H₂ or other reasons, be careful to avoid acid contacting with fire creating smoke and evaporation. Firefighters should wear oxygen mask. Not allow fire-fighting water with acid flow into surface water system or groundwater.</p>
<p style="text-align: center;">VI. ACCIDENTAL RELEASE MEASURES</p>
<p>1. Small Spill: Prevent spillage incurred, leak. Digging, isolated enclosing acid area. Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container. Neutralize the residue with a dilute solution of sodium carbonate if necessary.</p> <p>2. Large Spill: First treatment is same to small spill. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not get water inside container. Do not touch spilled material. Use water spray curtain to divert vapor drift. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Neutralize the residue with a dilute solution of sodium carbonate. Call key person to ask for assistance on disposal.</p> <p>Notice:</p> <ul style="list-style-type: none"> - Wear personal protective equipments included oxygen mask on treatment. - Reacts with metals to liberate flammable hydrogen gas, treatment area must avoid sparks and forced ventilation. - Not allowed acid and acidic sanitation water flow into surface water source or groundwater.
<p style="text-align: center;">VII. HANDLING AND STORAGE</p>
<p>1. Precautionary measures on handling dangerous chemical: Avoid contacting directly, use personal protective equipments (eye goggle, face shield, anti-acid gloves, apron, shoes...). Well ventilated to take out the toxic gases when working with acid. Be careful in handling to avoid damaging the packaging.</p> <p>2. Storage: Never add water to this product. Container is against acid corrosion, not contain over permitted level. Keep container tightly closed. Store in a metallic or coated fiberboard drum using a strong polyethylene inner package. Keep away from incompatibles such as oxidizing agents, combustible materials, metals, alkalis. Keep away heat power, direct light. Not put among beverages, food. Stored in a cool, well ventilated area with dangerous signal. Equipped treatment facilities for leak incident.</p> <p>Notice: - Food, beverages and tobacco products should not be carried, stored, or consumed where</p>

this material is in use.

- On preparation, not add water into acid directly, must drop acid into water slowly.

VIII. EXPOSURE CONTROL / PERSONAL PROTECTION

1. Control parameter - limits:

- Entry storage, must be well ventilated, wear personal protective equipments in contact, no smoking, drinking, feating in acid area.
- Equipped personal protection, working facilities must be washed before and after using.

2. Personal protection on working:

- Eye protection: Eye goggle, face shield.
- Inhalation protection: Anti-acid face shield, oxygen mask.
- Body protection: Anti-acid clothing / apron.
- Hand protection: Anti-acid rubber / plastic gloves.
- Foot protection: Anti-acid boot / shoes.

3. Protective equipments in case of incident treatment:

- Personal Protection Media
- Forced ventilation
- Plenty of water and decontamination chemicals.

4. Sanitaion measures:

- Flush plenty of water into acid area (Notice: Acid is soluble into water and exothermal, then it can cause burn in case shortage of water.
- Be neutralized by solution NaHCO_3 1% .
- Rinse acid exposed area with plenty of water.

IX. PHYSICAL AND CHEMICAL PROPERTIES

Physical status: Clear, liquid	Boiling Point H_3PO_4 85%: 154°C
Color: Colorless	Melting Point H_3PO_4 85%: 21°C
Odor: Odorless	Flammable Point: Not available
Vapor Pressure: 2,2 mmHg @ 20°C	Autoignition temperature: Not available
Vapor Density (KK=1): 3,4	Above Flash Flammable Limit: Not available
Solubility in water: Complete	Below Flash Flammable Limit: Not available
pH: Acid at medium level	Evaporation Rate: No Data
Specific Density H_3PO_4 85%: 1,69 kg/dm ³	

X. STABILITY AND REACTIVITY

1. Stability: Stable, stability temperature, turned into pyrophotphoric acid and other acids on loosing water.

2. Reactivity:

- Decomposition Reactivity:
Decomposed in contact with alcohols, aldehydes, cyanides, xeton, esters, and sulfides, halogenated organic matter to form toxic fumes.
- Hazardous Reactivity:
Reacts with metals to liberate flammable hydrogen gas.
Strongly reacts with baz.
- Incompatibles: metals, strong baz, compounds of iron.
- Polymerization: Strong.

XI. TOXICOLOGICAL INFORMATION				
Ingredient	Parameter Limit	Result	Exposure	Tested
H ₃ PO ₄	LD 50	1530 mg/kg bw	Oral	Rat
	LD 50	2740 mg/kg bw	Dermal	Rabbit
	LC 50	>850 mg/m ³ /1h	Steam	Rat
	fatal	100	Swallow	Sheep
	LDLO	mg/kgbw/day		Human
		200 mg/kg		
	TWA	1mg/m ³	Inhalation, dermal	Human
	STEL	3 mg/m ³		
	(3733/2002 BYT)			
	QCVN 06:2009 BTNMT	None		
	IDLD (NIOSH)	1.000mg/m ³	Inhalation, dermal	Human
	TWA PEL (OSHA)	1mg/m ³		
	TWA REL	1mg/m ³	Inhalation, dermal	Human
	STEL REL (NIOSH)	3 mg/m ³		
	TWA	1mg/m ³	Inhalation, dermal	Human
	STEL (ACGIH)	3 mg/m ³		
<p>1. Chronic effects to human (Cancer, hamful reproductive, gene mutations ...) IARC, NTP,OSHA not considered as carcinogenic substances.</p> <p>2. Other toxic effects: H3PO4 is strong corrosive to eyes, mucous membrane, soft tissues and skin. Contaminated by acid is be damaged and local pained or whole body. Eye irritation can cause conjunctivitis and horned; pained, teared and photophobic. Swallowing make oral cavity, throat, oesophagus, stomach, abdominal cavity seriously pained; cough and vomit with brown splotch and blood; corrosive to oesophagus, stomach and sometimes intestine.</p>				
XII. ECOLOGICAL INFORMATION				
1. Toxicity to organisms				
Ingredient	Creature	Effective Cycle	Result	
H ₃ PO ₄	.Lepomis	96 hours	. DL 50 pH = 3.0 - 3.5	
	macrochirus	12 hours	. DL 50 pH = 4.6	
	. Daphnia magna	12 hours	. DL 50 pH = 4.1	
	. Daphnia pulex	12 hours	. DL 50 pH = 3.4	
	. Gammarus pulex	12 hours	. DL 50 pH = 3.4	
	. Gammarus fossarum			
2. Environment Effects				

Acid H_3PO_4 make land and gases acidify and poison animals, vegetals.
 In water, acid react following pH and possible to exist without limit.
 The presence of phosphates in the water can create effects applied to the development and flowering of algae, lead to a process called eutrophication.
 When acid or a small piece of phosphate flooding the soil it is absorbed and reaches the highest value of soluble.
 In the process it can be soluble some soils and neutralized a part. When it landed, acid will be dispersed and diluted

- The degree of biodegradation: No data.
- BOD and COD Index: No data.
- Products of biodegradation process: No data.

The degree of toxicity of biodegradation products: No data.

XIII. DISPOSAL CONSIDERATIONS

1. Disposal regulations (Legal information):

QCVN 19:2009/BTNMT: Not specified concentration of H_3PO_4 in industrial emissions.

QCVN 21:2009/BTNMT: Not specified concentration of H_3PO_4 in the chemical manufactured emissions

QCVN 24:2009/BTNMT: - A column indicator of wastewater P Total = 4 mg/l
 - B column indicator of wastewater P Total = 6mg/l

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

3. Disposal measures: Processing durable phosphate salt, insoluble in water or turn into agricultural fertilizers.

4. Products of disposal process, treatment measures: Phosphate fertilizers

XIV. TRANSPORT INFORMATION

Regulation	UN No.	By sea	Group	Packing Method	Transport Label	Additional Info
Regulation for transport of hazard cargo in Vietnam: - Decree No. 104/2009/NĐ-CP on 09/11/2009 from Government about List of dangerous goods and transport of dangerous goods by vehicle road; - Decree No. 29/2005/NĐ-CP on	1805		8	III		SHNH : 80

10/3/2005 from Government about List of dangerous goods and transport of dangerous goods by inland waterway.						
Regulation about transport of international dangerous goods về vận chuyển from EU, USA...						Not available
XV. REGULATORY INFORMATION						
1. Registered: In Vietnam. 2. Hazard Classification following Registered Nation: Classified in Vietnam, Group 8. 3. Complied technical regulations: TCVN 6618-2000, TCN 101-1997						
XVI. OTHER INFORMATION						
Date of Report: Feb 2012						
Latest Modified/Supplemented Date: Dec 2019						
Remarks for 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 be get other hazardous properties according to using condition and exposure.						