Safety Data Sheet

Section 1 - Product and Company Identification

Product name： Phosphoric Acid
Other names：--
Product use： Fertilizer, soap and detergent, inorganic Phosphorus, medicine manufacture, fine production sugar, gelatin production, water treatment, animal feed, mechanical polishing, fuel additives, metal conversion paint, ethanol making catalyst, dark red dye of the cotton, yeast, stabilizer of the soil, wax, lighting agent, ceramic binder, active carbon, acid plus agent and chelating agents for food and soft drinks, experimental tester, metal wash and rust-free.
Supplier's name：San Fu Chemical Co., Ltd., Shan Hua Plant
Supplier's address：340 Hsiao Hsin Li, Shan-Hua District, Tainan City, Taiwan, R.O.C.
Supplier’s phone：886-6-5837608 Emergency phone：886-6-5837608
FAX.：886-6-5839498

Section 2 - Hazards Identification

Classification：

1.	Acute Toxicity	Category 4 (Ingestion)
2.	Corrosive to Metals	Category 1
3.	Skin Corrosion/Irritation	Category 1
4.	Serious Eye Damage/Irritation	Category 1

The Most Important Hazards and effect

Label element：

- Hazard symbol： Corrosion, Exclamation

- Signal word：Danger

Hazard statement：

1. Harmful if swallow
2. May corrosive to metal
3. Cause serious skin burn and eye damage
4. Cause serious eye damage

Precautionary statement：

1. If contact with eyes, flush with large amount of water immediately seek medical attention.
2. Wear suitable protective clothing.
3. In case of accident or if you feel unwell, seek medical attention immediately.

Others Hazard：/

Section 3 - Composition/Information On Ingredients

pure substance：

Chemical name：Phosphoric Acid
Synonyms：Orthophosphoric Acid

CAS No.：7664-38-2
Ingredient contributing to the hazard(%)：85~86 %

Section 4 - First Aid Measures

The First-aid Information：

- Inhalation：
  1. Remove the contaminated origin or move the patient to an air-circulated place.
  2. Seek medical attention immediately.
- Skin Contact：
  1. Avoid direct contact with chemicals, required impervious gloves.
  2. In case of contact, immediately flush skin with gentle water for at least 20 minutes.
  3. Remove the contaminated clothing, shoes, and leather product while flushing.
  4. Seek medical attention immediately.
  5. Wash thoroughly with the contaminated cloth, shoes and leather products before reuse or dispose.
- Eye Contact：
  1. In case of contact, immediately flush eyes with gentle water for at least 30 minutes. Keep eyelid apart and away from eyeballs during irrigation.
  2. Avoid the sewage touch the unaffected eye.
  3. Seek medical attention immediately.
- Ingestion：
  1. If the patient lost of consciousness or cramp, don't give any food.
  2. Rinse the mouth with water thoroughly.
  3. Do not induce vomit.
  4. Give 240-300ml water to the patient to dilute the substance in the stomach.
  5. Seek medical attention immediately.

The Most Important Symptoms and Hazardous Effects：Severe burning

Protection of First-aiders：Personnel are not allowed to enter the disaster area to move the patient without chemical protective clothing and respirator. Wear category C protective equipments to practice the first aid in the safety area.

Notes to a Physician：

1. Consider providing the oxygen if patient inhaled.
2. Avoid Gastric lavage and induce vomiting.

Section 5 - Fire Fighting Measures

Extinguishing Media： Won't be ignited. Use appropriate distinguisher to put out a fire.

Specific Hazards when Fire-fight：

1. React with most of metal and generate the hydrogen. May explode while heating.
2. May release poisonous gases in the scene of fire.
3. The container may be exploded while heating in the scene of fire.

Specific Fire-fighting Procedure：

1. Water spay could cool down the container and avoid breaking of the container.
2. Water spraying to control the vapor.

Specific Protection of Firefighters： Fireman must wear full chemical protective clothing and self-contained breathing apparatus (SCBA). (wear aluminum mirage protecting coat if necessary)

Section 6 - Accidental Release Measures

Personal Precautions：

1. Restrict access the area until completion of clean up.
2. Ensure clean up is conducted by trained personnel only.
3. Provide proper personal protective equipments.

Environmental Precautions：

1. Process aeration in the area
2. Extinguish or eliminate all the source of ignition.
3. Refer to the government safety and environmental protection unit.

Methods for Cleaning up：

1. Do not touch spilled material.
2. Avoid the leakage into the sewer or limited space.
3. If safe to do so, try to prevent or reduce leakage.
4. Small spill: Use Sodium bicarbonate or soda and lime to neutralize the leakage. To shovel the waste to the disposal container.
5. Large Spill: If safe to do so, recycle the liquid and place in the proper cover container with label. Use lime(Calcium oxide or soda) to carefully neutralize with recycled disposal.

■ Note: Lime is the best neutralizer and will form into the low solubility of calcium phosphate. Sweep the waste in the container for discharging.

Section 7 - Handling and Storage

Handling：

1. Avoid generating the droplet or vapor. Operate in the specific well ventilated area and use the minimum amount. Operating area must separate with storage area.
2. Keep a fire extinguisher and cleaning equipment nearby.
3. Consider installing the anti-corrosive surface equipments in the heating or the phosphoric acid droplet existing area.
4. Prepare soda power or lime nearby the working area in case of emergency.
5. Keep container closed if not using.
6. Dilution should add the acid slowly into the water and stir with care to prevent the overheating splash.

Storage：

1. Store in the glass or other anti acidic material made container.
2. Avoid damage or broken of the container. Away from the incompatible material.
3. Storage area should be clean and well ventilated.
4. Use the anti acidic flooring and approved drainage.
5. Store the 85% liquid with the lowest temperature of 21℃; 80% liquid with the temperature of 4℃; 75% liquid with the temperature of -18℃. Avoid precipitation of the concentrate liquid.

Section 8 - Exposure Controls & Personal Protection

Engineering measures：

1. Use the anti-corrosive ventilation system separately.
2. While heating the chemical or generating the droplets, may need to use the local exhaust ventilation.
3. Provide the adequate fresh air to supply amount the gas exhausted.

4. Venting holes direct to outdoor.

Control parameters			
TWA	STEL	Ceiling	Biological standards
1mg/m^3	3mg/m^3	--	--

Personal protective equipment：

- Respiratory Protection：
  1. Below 25mg/m3： Continues mode respiratory with oxygen-contained breathing apparatus.
  2. Below 50mg/m3： NIOSH approved full-face piece with oxygen-contained and self-contained breathing apparatus and positive pressure demand or high efficiency grain filter with full-face piece breathing apparatus. .
  3. Below 1000mg/m3： NIOSH approved full-face piece with oxygen-contained and self-contained breathing apparatus and positive pressure demand.
  4. Unknown concentration: NIOSH approved full-face piece oxygen-contained and self-contained breathing apparatus and positive pressure demand.
  5. Escape: Use high efficiency filter with full face piece breathing apparatus, escape self-contain breathing apparatus.
- Hand Protection： Use impervious gloves made by Butyl rubber, natural rubber, chloroprene rubber, Cluster Rubber, Polyethylene, PVC, Viton, Saranex, Barricade, 4H the better.
- Eye Protection： Chemical protective goggles, face shield
- Skin and Body Protection： Overall protective clothing, face shield

Hygiene measures：

1. Remove contaminated clothes, clean thoroughly before reuse or disposal. Must advise the danger to the laundry worker.
2. Smoking, eating and drinking are prohibited in work area.
3. Wash hands thoroughly after handing this substance.
4. Maintain a clean work environment.

Section 9 - Physical & Chemical Properties

Appearance：syrup-like liquid	Odor：odorless Olfactory threshold: odorless
Color：Transparent	Melting Point: 21℃(85%)
pH value：1.5(0.1N liquid)	Boiling point/boiling range： 158℃(85%)
Flammability: --	Flash point： --
Decomposition temp：--	Test method：--
Auto ignition temp：--	Explosion properties：--
Vapor pressure：0.03mmHg	Vapor density：3.4(Air =1)
Density：1.685@85% liquid(H_2O=1)	Solubility：fully dissolved
log Kow：--	Evaporation Rate：--

Section 10 - Stability & Reactivity Data

Stability：Stable
Possible hazardous reactions under specific conditions： 1. In the special condition may cause danger reaction. 2. Strong base(like potassium hydroxide): irritated reaction, cause splash or release large amount of heat. 3. Strong oxidizer, strong Reductant or organic oxidizer: may have danger reaction potentially. 4. Azo compounds, Epoxide, aldehyde and other compound: may cause violent polymerize reaction. 5. Metal: generate the flammable and potentially explosive hydrogen. 6. Fluoride, organic halide, cyanide, sulfide, mercaptan, nitride, metal phosphide, acetylene compound, silicides and Calcium Carbide: generate the poisonous, corrosive and flammable gases. 7. Sodium Methane: add the phosphoric acid into the Sodium Methane may cause the Sodium Methane to be ignited. 8. Sodium borohydride: will release large amount of heat while mixing.
Conditions to avoid：Heat
Materials to avoid： 1. Strong base. 2. Strong oxidizer, strong Reductant or organic oxidizer 3. Azo compounds, Epoxide, aldehyde and other compound 4. Metal 5. Fluoride, organic halide, cyanide, sulfide, mercaptan, nitride, metal phosphide, acetylene compound, silicides and Calcium Carbide 6. Sodium Methane 7. Sodium borohydride
Hazardous decomposition products：--

Section 11 - Toxicological Information

Route of exposure：Skin, inhalation, ingestion, eyes
Symptoms： Irritation, burn, stomachache, dyspnea, nausea, vomit, Abdominal Pain, Dermatitis
Immediate Toxicity： 1. Skin： 2. Inhalation： Vapor or droplet may irritate the nose and throat. Cause serious irritation and redness pain, corrosive injury and permanent scar even to death. 3. Eye： 3.1 Droplets may cause irritation of eyes. 3.2 Splash with the concentrated liquid cause severe burn and permanent eye damage. 4. Ingestion：Burn on mouth and throat, stomachache, dyspnea, nausea, vomit, Abdominal Pain and cramp: serious condition will cause collapse and death. ● LD_{50}: 1530mg/kg(rat，oral) ● LC_{50}: --
Specific effects：Burn on mouth and throat, stomachache, dyspnea, nausea, vomit, Abdominal Pain and cramp: serious condition will cause collapse and death.

Section 12 - Ecological Information

Ecotoxicology： ■ LC_{50}(fish)：138mg/l/96H ■ EC_{50}(Aquatic Invertebrates)：-- ■ Bioconcentration factor (BCF)：--
Persistence and degradability： ■ Half-Life (Air)：-- ■ Half-Life (Water surface)：-- ■ Half-Life (Groundwater)：-- ■ Half-Life (Soil)：--
Bioaccumulative potential：--
Mobility in soil：If the Phosphoric Acid release to soil, will infiltrate to the ground. The speed of mobility will increase by decreasing the concentration. In the process of the infiltration, the Phosphoric Acid will dissolve parts of the material in the soil, especially the types of carbonate. It's possible that the proton or the Phosphoric Acid root ion be absorbed and neutralized. But most of the Phosphoric Acid could infiltrate into the groundwater layer.
Other adverse effects： --

Section 13 - Disposal Considerations

Methods of disposal： 1. Refer to the related law and regulation. 2. Apply the specific Incinerate or hygienic bury method. 3. Phosphoric Acid waste could neutralize with lime and form into the fertilizer. 4. Disposal manage should be done by the trained personnel with proper equipments

Section 14 - SDS Transport Information

UN classification number：1805
Proper D.O.T Shipping Name：Phosphoric Acid
Hazard Class：Corrosive substance Category 8
Packing Group：III
Marine pollution：no
Specific precautionary transport measures and conditions：--

Section 15 - Regulatory Information

Regulations： 1. Occupational Safety and Health Act 2. Regulations for the Labelling and Hazard Communication of Hazardous Chemicals 3. Standards of Specific Chemical Substances Hazard Prevention 4. Road Traffic Safety Regulations 5. Industrial Waste Storage and Disposal Regulations 6. Assessment and Classification Administration of Hazardous Chemicals

Section 16 - Other Information

Literature references	1. CHEMINFO Database，CCINFO Disc，2005-3 2. RTECS Database，TOMES PLUS Disc，Vol.65，2005 3. HSDB Database，TOMES PLUS Disc，Vol.65，2005 4. ChemWatch Database，2005-1	
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Remarks	Symbols Explanations: "--" No information is available at this time. "/" Not applicable to this substance.	

■ This information above has consulted national or international papers and manufacturer or supplier's provided information. The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. Users should make their own determination of the suitability of the information for their particular purposes.