



SAFETY DATA SHEET

Phosphoric Acid 50% - 85%

Section 1: Identification

Company Identification:

Skyhawk Chemicals, Inc.
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Fax 713-957-0345
Order@skyhawkchemicals.com

24 Hour Emergency Telephone: Call Chemtrec 800-424-9300 CCN721839

Customer Service: **713-957-2200**

Common Names: Phosphoric Acid Solution

Chemical Formula: H₃PO₄ (Phosphoric Acid)

Synonym: Phos Acid, Phosphoric Acid Mixture

Product Uses: Used as a fertilizer and/or industrial ingredient

Section 2: Hazard(s) Identification

2.1. Classification of the substance or mixture

Acute Tox. 4 (Oral)	H302
Skin Corr. 1A	H314
Eye Dam. 1	H318
Carc. 1A	H350
STOT SE 3	H335
Aquatic Acute 2	H401

2.2. Label elements

GHS-US labelling Hazard pictograms (GHS-US) :

SAFETY DATA SHEET



Signal word (GHS-US) : **DANGER**

Hazard statements (GHS-US) : H302 - Harmful if swallowed
H314 - Causes severe skin burns and eye damage
H318 - Causes serious eye damage
H335 - May cause respiratory irritation H350 - May cause cancer
H401 – Toxic to aquatic life

Precautionary statements (GHS-US) : P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P260 - Do not breathe fume, mist, vapors, spray
P264 - Wash hands and forearms thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P271 - Use only outdoors or in a well-ventilated area
P273 - Avoid release to the environment
P280 - Wear eye protection, face protection, protective gloves, protective clothing
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. Rinse skin with water/shower
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, if present and easy to do. Continue rinsing
P308+P313 - IF exposed or concerned: Get medical advice/attention
P310 - Immediately call a POISON CENTER or doctor
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 according to local, regional, national, and international regulations



SAFETY DATA SHEET

2.3. Other hazards

Hazardous to the aquatic environment
No additional information available

Section 3: Composition/Information on Ingredients

Composition:

<u>Name</u>	<u>CAS #</u>	<u>% by Concentration</u>
Phosphoric Acid	7664-38-2	50% - 85%
Sulfuric Acid	7664-93-9	0.3% - 4%
Fluorides (as F)		0.3% - 0.7%

Section 4: First-Aid Measures

4.1. Description of first aid measures

- First-aid measures general : If exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible).
- First-aid measures after inhalation : Using proper respiratory protection, immediately move the exposed person to fresh air. Keep at rest and in a position comfortable for breathing. Give oxygen or artificial respiration if necessary. Seek immediate medical advice. Symptoms may be delayed.
- First-aid measures after skin contact : Remove/Take off immediately all contaminated clothing. Rinse immediately with plenty of water (for at least 15 minutes). Seek medical attention immediately if exposure is severe. Obtain medical attention if irritation develops or persists. Wash contaminated clothing before reuse.
- First-aid measures after eye contact : Immediately rinse with water for a prolonged period (at least 15 minutes) while holding the eyelids wide open. Seek medical attention immediately if exposure is severe. Obtain medical attention if irritation develops or persists.
- First-aid measures after ingestion : If swallowed, do not induce vomiting. Seek medical advice immediately and show this container or label.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries : Corrosive. Causes burns. Harmful if swallowed.
- Symptoms/injuries after inhalation : Causes severe respiratory irritation if inhaled. Symptoms may include: Burning of nose and throat, constriction of airway, difficulty breathing, shortness of breath, bronchial spasms,

SAFETY DATA SHEET

Symptoms/injuries after skin contact	: chest pain, and pink frothy sputum. Contact may cause immediate severe irritation progressing quickly to chemical burns. May cause pulmonary edema. Symptoms may be delayed. : Contact may cause immediate severe irritation progressing quickly to chemical burns.
Symptoms/injuries after eye contact	: Contact may cause immediate severe irritation progressing quickly to chemical burns. Can cause blindness.
Symptoms/injuries after ingestion	: May cause burns or irritation of the linings of the mouth, throat, and gastrointestinal tract. Swallowing a small quantity of this material will result in serious health hazard.
Chronic symptoms	: Repeated or prolonged inhalation may damage lungs. Prolonged and repeated contact will eventually cause permanent tissue damage and effects such as erosion of teeth, lesions on the skin, tracheo-bronchitis, mouth inflammation, conjunctivitis, and gastritis. Repeated or prolonged inhalation of mist may cause cancer.

Section 5: Fire-Fighting Measures

5.1. Extinguishing media	
Suitable extinguishing media	: Use extinguishing media appropriate for surrounding fire.
Unsuitable extinguishing media	: Do not get water inside containers. Do not apply water stream directly at source of leak. Do not use a heavy water stream. A direct water stream will cause violent splattering and generation of heat.
5.2. Special hazards arising from the substance or mixture	
Fire hazard	: Not flammable. Under conditions of fire this material may produce: Oxides of phosphorus; Phosphine; Sulphur oxides.
Explosion hazard	: Product is not explosive.
5.3. Advice for firefighters	
Firefighting instructions	: Keep upwind. Use water spray or fog for cooling exposed containers. If water is added to concentrated acid, violent splattering can occur, and



SAFETY DATA SHEET

	considerable heat may be generated. Cool non-leaking, fire-exposed containers with water spray.
Protection during firefighting	: Firefighters must use full bunker gear including NIOSH-approved positive pressure self-contained breathing apparatus to protect against potential hazardous combustion or decomposition products.
Other information	Do not allow run-off from firefighting to enter drains or water courses.

Section 6: Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Do not breathe fumes from fires or vapors from decomposition.

6.1.1. For non-emergency personnel

Protective equipment : Wear suitable protective clothing, gloves and eye/face protection.

Emergency procedures : Stop leak if safe to do so. Eliminate ignition sources. Evacuate unnecessary personnel. Ventilate area. Keep upwind.

6.1.2. For emergency responders

Protective equipment : Use recommended respiratory protection. Wear suitable protective clothing, gloves and eye/face protection.

Emergency procedures : If possible, stop flow of product. Contain and collect as any solid. Ventilate area.

6.2. Environmental precautions

If spill could potentially enter any waterway, including intermittent dry creeks, contact the U.S. COAST GUARD NATIONAL RESPONSE CENTER at 800-424-8802. In case of accident or road spill notify CHEMTREC at 800-424-9300. In other countries call CHEMTREC at (International code) +1-703-527-3887.

6.3. Methods and material for containment and cleaning up

For containment : If contaminated with other materials, contain and collect as any solid in suitable containers. Do not allow into drains or water courses or dispose of where ground or surface waters may be affected. Prevent large quantities from contacting vegetation.

SAFETY DATA SHEET

Methods for cleaning up : Recover the product by vacuuming, shoveling or sweeping and place in appropriate container to be disposed at an appropriate disposal facility according to current applicable laws and regulations and product characteristics at the time of disposal. Provide adequate ventilation. Avoid generation of dust during clean-up of spills. If uncontaminated, recover and reuse product. Practice good housekeeping – spillage can be slippery on smooth surface either wet or dry.

Section 7: Handling and Storage

7.1 Precautions for safe handling

Precautions for safe handling : Avoid all eye and skin contact and do not breathe vapor and mist. Wear recommended personal protective equipment. Ensure there is adequate ventilation. Keep away from heat and sources of ignition. Employ good maintenance practices to prevent leaks. Use good process control measures to prevent releases. Do not add water to acid. When diluting, always add acid to water. Causes severe burns.

Hygiene measures : Handle in accordance with good industrial hygiene and safety procedures. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Wash contaminated clothing before reuse.

7.2 Conditions for safe storage, including incompatibilities

Storage conditions : Store in dry, cool area. Store in a well-ventilated place. Keep away from combustible materials. Diking of storage tanks is recommended.

Incompatible materials : Avoid contact with combustibles and reactive materials.

Section 8: Exposure Controls/Personal Protection



SAFETY DATA SHEET

8.1. Control parameters

Sulfuric acid (7664-93-9)

USA ACGIH	TWA	0.2 mg/m ³ (thoracic fraction)
USA NIOSH	IDLH	15 mg/m ³
USA NIOSH	TWA	1 mg/m ³
USA OSHA	TWA	1 mg/m ³

Phosphoric acid (7664-38-2)

USA ACGIH	TWA / STEL	1 mg/m ³ (TWA), 3 mg/m ³ (STEL)
USA NIOSH	IDLH	1000 mg/m ³
USA NIOSH	TWA	1 mg/m ³
USA OSHA	TWA / STEL	1 mg/m ³ (TWA), 3 mg/m ³ (STEL)

8.2. Exposure controls

Appropriate engineering controls	:	Provide sufficient ventilation to keep vapors below the permissible exposure limit. Ensure adequate ventilation, especially in confined areas. Packaging and unloading areas and open processing equipment may require mechanical exhaust systems. Corrosion-proof construction recommended.
Personal protective equipment	:	Protective goggles. Face shield. Gas mask at concentration in the air > >TLV. Protective clothing.
Hand protection	:	Impermeable protective gloves.
Hand protection	:	Impermeable protective gloves, such as: nitrile, neoprene, or PVC. Wear gauntlet gloves. Check glove manufacturer's permeation / degradation information.
Eye protection	:	Chemical safety goggles and full face shield. Do not wear contact lenses. For increased protection, use supplied-air acid hood.
Skin and body protection	:	Wear suitable protective clothing. Wear acid-resistant suit with acid-resistant apron, boots.
Respiratory protection	:	Use a NIOSH-approved respirator or self-contained breathing apparatus whenever exposure may exceed established Occupational Exposure Limits. Use respirator approved for acid fumes and mist.

Section 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Physical state	:	Liquid
Appearance	:	Viscous
Color	:	Green
Odor	:	Acrid

SAFETY DATA SHEET

Odor threshold	:	No data available
pH	:	1 – 1.5
pH solution	:	1 – 10 g/l
Molecular mass	:	98 g/mol (Phosphoric acid)
Relative evaporation rate (butylacetate=1)	:	No data available
Melting point	:	No data available
Freezing point	:	< -6.7 °C (< 20 °F) (56% P2O5)
Boiling point	:	131 - 193 °C (268 - 380 °F)
Flash point	:	No data available
Self ignition temperature	:	No data available
Decomposition temperature	:	No data available
Flammability (solid, gas)	:	No data available
Vapor pressure	:	1 - 6 mm Hg at 25 °C (77 °F)
Relative vapor density at 20 °C	:	No data available
Relative density	:	1.7 at 24 °C (75 °F)
Bulk Density	:	14 lb/gal
Solubility	:	Water: Miscible
Log Pow	:	No data available
Log Kow	:	No data available
Viscosity	:	67-140 cP at 24 °C (75 °F) (53-62% P2O5) 40-95 cP at 38 °C (100 °F) (53-62% P2O5)
Explosive properties	:	No data available
Oxidizing properties	:	No data available
Explosive limits	:	No data available

Section 10: Stability and Reactivity

10.1. Reactivity

Product is hygroscopic. Acidic liquids, such as this material, may react with metals and release hydrogen gas.

10.2. Chemical stability

Stable at standard temperature and pressure.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

Protect from moisture. Avoid high temperatures.

10.5. Incompatible materials

Avoid contact with bases, aluminum, and copper, mild steel, brass, and bronze.

SAFETY DATA SHEET

10.6. Hazardous decomposition products

Under conditions of fire this material may produce: Oxides of phosphorus; Phosphine; Sulphur oxides.

Section 11: Toxicological Information

Acute toxicity : Harmful if swallowed.

Sulfuric acid (7664-93-9)

LD50 oral rat 2140 mg/kg
 LC50 inhalation rat (mg/l) 0.36 mg/l 4 h (reported as 510 mg/m³/2 h)
 LC50 inhalation rat (ppm) 86.75 ppm 4 h (reported as 347 ppm/1 h)

Phosphoric acid (7664-38-2)

LD50 oral rat 1530 mg/kg
 LD50 dermal rabbit 2730 mg/kg
 LC50 inhalation rat (mg/l) > 850 mg/m³ (Exposure time: 1 h)
 Skin corrosion/irritation : Causes severe skin burns and eye damage.
 pH: 1 – 1.5
 Serious eye damage/irritation : Causes serious eye damage.
 pH: 1 – 1.5
 Respiratory or skin sensitization : Not classified
 Germ cell mutagenicity : Not classified
 Carcinogenicity : May cause cancer.

Sulfuric acid (7664-93-9)

IARC group 1
 Reproductive toxicity : Not classified
 Specific target organ toxicity (single exposure) : May cause respiratory irritation.

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

Section 12: Ecological Information (non-mandatory)

Ecotoxicity

EPA Ecological Toxicity High

rating :

Acute Toxicity to Fish: (*L. macrochirus* (bluegill sunfish)) 96-hr static: LC50 = pH 3.0–3.5.

Chronic Toxicity to Fish: Mosquito fish: LD50 = 138 mg/L; 96 hours (CAS#7664-38-2)



SAFETY DATA SHEET

Acute Toxicity to Aquatic Invertebrates: (*Daphnia magna*) 12-hr static: EC50 = pH 4.6; (*Daphnia pulex*) 12-hr static: EC50 = pH 4.1; (*Gammarus pulex*) 12-hr static: LC50 = pH 3.4

Chronic Toxicity to Aquatic Invertebrates: No data available

Acute Toxicity to Aquatic Plants: Dangerous to aquatic plants at high concentrations.

Toxicity to Bacteria: (Activated sludge): EC50 = pH 2.55.

Toxicity to Soil Dwelling Organisms: No data available

Toxicity to Terrestrial Plants: (Peas, beans, beets, rapeseed and weeds) Sprayed with 15-20% solution of H3PO4: Foliage was destroyed on all plants.

Environmental Fate:

Stability in Water: Ionic dissociation in water.

Stability in Soil: Dissolves some soil material (carbonates).

Transport and Distribution: Under acidic soil conditions, sparsely soluble phosphates tend to solubilize.

Toxicity:

Inorganic phosphates have the potential to increase the growth of freshwater algae, whose eventual death will reduce the available oxygen for aquatic life.

Degradation

Products:

Biodegradation: Under anaerobic conditions, microorganisms may degrade the product to phosphine.

Photodegradation: No data available

Section 13: Disposal Considerations (non-mandatory)

Sewage disposal recommendations : This material is hazardous to the aquatic environment. Keep out of sewers and waterways.

Waste disposal recommendations Place in an appropriate container and dispose of the contaminated material at a licensed site.

Additional information Dispose of waste material in accordance with all local, regional, national, and international regulations.



SAFETY DATA SHEET

Section 14: Transport Information (non-mandatory)

In accordance with DOT / TDG / ADR / RID / ADNR / IMDG / ICAO / IATA

14.1. UN number

DOT NA no.	UN1805
DOT Proper Shipping Name	Phosphoric Acid Solution
Department of Transportation (DOT) Hazard Classes	8 - Class 8 - Corrosive material 49 CFR 173.136
Hazard labels (DOT)	8 - Corrosive substances
Packing group (DOT)	III - Minor Danger

Section 15: Regulatory Information (non-mandatory)

15.1. US Federal regulations

Phosphoric Acid (Green MGA and Industrial)

SARA Section 311/312 Hazard Classes Immediate (acute) health hazard Delayed (chronic) health hazard

Sulfuric acid (7664-93-9)

Listed on the United States TSCA (Toxic Substances Control Act) inventory Listed on SARA Section 302 (Specific toxic chemical listings) Listed on SARA Section 313 (Specific toxic chemical listings)

SARA Section 302 Threshold Planning Quantity (TPQ)	1000 lb
SARA Section 313 - Emission Reporting	1.0 % (acid aerosols including mists, vapors, gas, fog, and other airborne forms of any particle size)

Phosphoric acid (7664-38-2)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. US State regulations

The following states have an OSH program approved by OSHA. If you are located in any of these states you may be under state jurisdiction rather than federal jurisdiction and your state may have more stringent requirements than OSHA. You should consult your state regulations to ensure compliance.

Alaska	Arizona	California	*Connecticut
Hawaii	Minnesota	North	Utah
*Illinois	Nevada	Carolina	Vermont
Indiana	New	Oregon	*Virgin
Iowa	Mexico	Puerto	Islands
Kentucky	*New	Rico	Virginia
Maryland	Jersey	South	Washington
Michigan	*New	Carolina	Wyoming
	York	Tennessee	

*The state plans in these states apply only to public sector employers. In these states private sector employers are subject to USOL – OSHA jurisdiction. All other state plans apply to both public and private sector employers.



SAFETY DATA SHEET

Section 16: Other Information

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