

# Safety Data Sheet

## Phosphoric Acid, 50% (w/w)

### 1. PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** Phosphoric Acid, 50% (w/w)

**Synonyms/Generic Names:** Orthophosphoric acid

**Product Number:** 9239

**Product Use:** Industrial, Manufacturing or Laboratory use

**Manufacturer:** Columbus Chemical Industries, Inc.  
N4335 Temkin Rd.  
Columbus, WI. 53925

**For More Information Call:** 920-623-2140 (Monday-Friday 8:00-4:30)

**In Case of Emergency Call:** CHEMTREC - 800-424-9300 or 703-527-3887 (24 Hours/Day, 7 Days/Week)

### 2. HAZARDS IDENTIFICATION

**OSHA Hazards:** Target organ effect, Highly toxic by inhalation, Harmful by ingestion, Corrosive

**Target Organs:** Liver, Blood, Bone marrow

**Signal Words:** Danger

**Pictograms:**



**GHS Classification:**

Acute toxicity, Oral	Category 4
Acute toxicity, Inhalation	Category 2
Acute toxicity, Dermal	Category 5
Skin corrosion	Category 1B
Serious eye damage	Category 1

**GHS Label Elements, including precautionary statements:**

**Hazard Statements:**

H302	Harmful if swallowed.
H313	May be harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H330	Fatal if inhaled.

**Precautionary Statements:**

P260	Do not breathe dust/fume/gas/mist/vapor/spray.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

P284	Wear respiratory protection.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing.
P310	Immediately call a POISON CENTER or doctor/physician.

#### Potential Health Effects

<b>Eyes</b>	Causes eye irritation.
<b>Inhalation</b>	May be harmful if inhaled. Causes respiratory tract irritation.
<b>Skin</b>	May be harmful if absorbed through skin. Causes skin irritation.
<b>Ingestion</b>	May be harmful if swallowed.

#### NFPA Ratings

<b>Health</b>	3
<b>Flammability</b>	0
<b>Reactivity</b>	0
<b>Specific hazard</b>	N/A

#### HMIS Ratings

<b>Health</b>	3
<b>Fire</b>	0
<b>Reactivity</b>	0
<b>Personal</b>	H

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	Weight %	CAS #	EINECS# / ELINCS#	Formula	Molecular Weight
Phosphoric Acid	50	7664-38-2	231-633-2	H <sub>3</sub> PO <sub>4</sub>	98.00 g/mol
Water	Balance	7732-18-5	231-791-2	H <sub>2</sub> O	18.00 g/mol

### 4. FIRST-AID MEASURES

<b>Eyes</b>	Rinse with plenty of water for at least 15 minutes and seek medical attention immediately.
<b>Inhalation</b>	Move casualty to fresh air and keep at rest. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention immediately.
<b>Skin</b>	Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and wash using soap. Get medical attention immediately.
<b>Ingestion</b>	<b>Do Not Induce Vomiting!</b> Never give anything by mouth to an unconscious person. If conscious, wash out mouth with water. Get medical attention immediately.

### 5. FIRE-FIGHTING MEASURES

<b>Suitable (and unsuitable) extinguishing media</b>	Product is not flammable. Use appropriate media for adjacent fire. Cool containers with water.
<b>Special protective equipment and precautions for firefighters</b>	Wear self-contained, approved breathing apparatus and full protective clothing, including eye protection and boots.
<b>Specific hazards arising from the chemical</b>	Emits toxic fumes (phosphorus oxides) under fire conditions. (See also Stability and Reactivity section).

### 6. ACCIDENTAL RELEASE MEASURES

<b>Personal precautions, protective equipment and emergency procedures</b>	See section 8 for recommendations on the use of personal protective equipment.
<b>Environmental precautions</b>	Prevent spillage from entering drains. Any release to the environment may be subject to federal/national or local reporting requirements.

<b>Methods and materials for containment and cleaning up</b>	Neutralize spill with sodium bicarbonate or lime. Absorb spill with noncombustible absorbent material, then place in a suitable container for disposal. Clean surfaces thoroughly with water to remove residual contamination. Dispose of all waste and cleanup materials in accordance with regulations.
--	---

---

## 7. HANDLING AND STORAGE

---

### Precautions for safe handling

See section 8 for recommendations on the use of personal protective equipment. Use with adequate ventilation. Wash thoroughly after using. Keep container closed when not in use. Avoid formation of aerosols.

### Conditions for safe storage, including any incompatibilities

Store in cool, dry well ventilated area. Keep away from incompatible materials (see section 10 for incompatibilities).

---

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

---

### Occupational exposure controls:

Component	Exposure Limits	Basis	Entity
Phosphoric Acid	1 mg/m <sup>3</sup>	TLV	ACGIH
	3 mg/m <sup>3</sup>	STEL	ACGIH
	1 mg/m <sup>3</sup>	PEL	OSHA
	1 mg/m <sup>3</sup>	REL	NIOSH
	3 mg/m <sup>3</sup>	STEL	NIOSH
	1000 mg/m <sup>3</sup>	IDLH	OSHA

TWA: Time Weighted Average over 8 hours of work.

TLV: Threshold Limit Value over 8 hours of work.

REL: Recommended Exposure Limit

PEL: Permissible Exposure Limit

STEL: Short Term Exposure Limit during x minutes.

IDLH: Immediately Dangerous to Life or Health

WEEL: Workplace Environmental Exposure Levels

CEIL: Ceiling

### Personal Protection

<b>Eyes</b>	Wear chemical safety glasses or goggles, and face shield.
<b>Inhalation</b>	Provide local exhaust, preferably mechanical. If exposure levels are excessive, use an approved respirator.
<b>Skin</b>	Wear nitrile or rubber gloves, and full body covering. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
<b>Other</b>	Not Available

### Other Recommendations

Provide eyewash stations, quick-drench showers and washing facilities accessible to areas of use and handling.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance (physical state, color, etc.)	Syrupy, viscous, clear liquid.
Odor	Odorless.
Odor threshold	Not Available
pH	Acidic.
Melting point/freezing point	21°C (70°F)
Initial boiling point and boiling range	158°C (316°F)
Flash point	Not Flammable
Evaporation rate	Not Available
Flammability (solid, gas)	Not Flammable
Upper/lower flammability or explosive limit	Not Explosive
Vapor pressure	0.3 kPa at 20°C
Vapor density	3.4 (air=1)
Density	1.685 g/cm <sup>3</sup> at 25°C (77°F)
Solubility (ies)	Soluble in water.
Partition coefficient: n-octanol/water	Not Available
Auto-ignition temperature	Not Available
Decomposition temperature	Not Available

## 10. STABILITY AND REACTIVITY

<b>Chemical Stability</b>	Stable
<b>Possibility of Hazardous Reactions</b>	Will not occur.
<b>Conditions to Avoid</b>	Not Available
<b>Incompatible Materials</b>	Strong bases, powdered metals.
<b>Hazardous Decomposition Products</b>	Phosphorus oxides.

## 11. TOXICOLOGICAL INFORMATION

### Acute Toxicity

#### *Phosphoric Acid*

<b>Skin</b>	LD50 – Rabbit – 2,740 mg/kg
<b>Eyes</b>	Not Available
<b>Respiratory</b>	Not Available
<b>Ingestion</b>	LD50 – Rat – 1,530 mg/kg

### Carcinogenicity

<b>IARC</b>	No components of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
<b>ACGIH</b>	No components of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
<b>NTP</b>	No components of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
<b>OSHA</b>	No components of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

### Signs & Symptoms of Exposure

<b>Skin</b>	Burning, itching, redness, inflammation, swelling of exposed tissue.
<b>Eyes</b>	Eye burns, watering eyes.
<b>Respiratory</b>	Burning, choking, coughing, wheezing, laryngitis, shortness of breath, headache or nausea.
<b>Ingestion</b>	Burning, choking, nausea, vomiting, severe pain.

<b>Chronic Toxicity</b>	Damage to organs.
<b>Teratogenicity</b>	Not Available
<b>Mutagenicity</b>	Not Available
<b>Embryotoxicity</b>	Not Available
<b>Specific Target Organ Toxicity</b>	Blood, liver, skin, eyes, bone marrow.
<b>Reproductive Toxicity</b>	Not Available
<b>Respiratory/Skin Sensitization</b>	Not Available

---

## 12. ECOLOGICAL INFORMATION

---

### Ecotoxicity

#### *Phosphoric Acid*

<b>Aquatic Vertebrate</b>	Not Available
<b>Aquatic Invertebrate</b>	Not Available
<b>Terrestrial</b>	Not Available

<b>Persistence and Degradability</b>	Not Available
<b>Bioaccumulative Potential</b>	Not Available
<b>Mobility in Soil</b>	Not Available
<b>PBT and vPvB Assessment</b>	Not Available
<b>Other Adverse Effects</b>	Not Available

---

## 13. DISPOSAL CONSIDERATIONS

---

<b>Waste Residues</b>	Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste product or residues.
<b>Product Containers</b>	Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste product containers.

The information offered in section 13 is for the product as shipped. Use and/or alterations to the product may significantly change the characteristics of the material and alter the waste classification and proper disposal methods.

---

## 14. TRANSPORTATION INFORMATION

---

US DOT	UN1805, Phosphoric acid solution, 8, pg III
TDG	UN1805, PHOSPHORIC ACID SOLUTION, 8, pg III
IMDG	UN1805, PHOSPHORIC ACID SOLUTION, 8, pg III
Marine Pollutant	No
IATA/ICAO	UN1805, Phosphoric acid solution, 8, pg III

---

## 15. REGULATORY INFORMATION

---

TSCA Inventory Status	All ingredients are listed on the TSCA inventory.
DSCL (EEC)	All ingredients are listed on the DSCL inventory.
California Proposition 65	Not Listed
SARA 302	Not Listed
SARA 304	Not Listed
SARA 311	Acute health hazard, Chronic health hazard.
SARA 312	Acute health hazard, Chronic health hazard.
SARA 313	Not Listed
WHMIS Canada	Class E: Corrosive liquid.

---

## 16. OTHER INFORMATION

---

Revision	Date
Revision 1	12/03/2012
Revision 2	08/14/2013

Disclaimer: Columbus Chemical Industries, Inc. ("Columbus") believes that the information herein is factual but is not intended to be all inclusive. The information relates only to the specific material designated and does not relate to its use in combination with other materials or its use as to any particular process. Because safety standards and regulations are subject to change and because Columbus has no continuing control over the material, those handling, storing or using the material should satisfy themselves that they have current information regarding the particular way the material is handled, stored or used and that the same is done in accordance with federal, state and local law. COLUMBUS MAKES NO WARRANTY, EXPRESS OR IMPLIED, INCLUDING (WITHOUT LIMITATION) WARRANTIES WITH RESPECT TO THE COMPLETENESS OR CONTINUING ACCURACY OF THE INFORMATION CONTAINED HEREIN OR WITH RESPECT TO FITNESS FOR ANY PARTICULAR USE.