

## MATERIAL SAFETY DATA SHEET PHOSPHORIC ACID

### 1. Chemical Product and Company Identification

Product Name: Phosphoric acid, 85%  
Catalogue Codes: SLP5569, SLP4555, SLP1732  
CAS#: Mixture.  
RTECS: Not applicable.  
TSCA: TSCA 8(b) inventory: Phosphoric Acid; Water  
CI#: Not available.  
Synonym: Phosphoric Acid 85%; Phosphoric Acid; Orthophosphoric acid  
Chemical Name: Not applicable.  
Chemical Formula: Not applicable.

### 2. Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Phosphoric Acid	7664-38-2	85-88
Water	7732-18-5	12-15

Toxicological Data on Ingredients: Phosphoric Acid: ORAL (LD50): Acute: 1530 mg/kg [Rat]. DERMAL (LD50): Acute: 2740 mg/kg [Rabbit]. DUST (LC50): Acute: >850 mg/m 1 hours [Rat].

### 3. Hazards Identification

Potential Acute Health Effects:

Very hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion. Hazardous in case of skin contact (corrosive, permeator), of eye contact (corrosive). Slightly hazardous in case of inhalation (lung sensitizer). Liquid or spray mist may produce tissue damage particularly on mucous membranes of eyes, mouth and respiratory tract. Skin contact may produce burns. Inhalation of the spray mist may produce severe irritation of respiratory tract, characterized by coughing, choking, or shortness of breath. Severe over-exposure can result in death. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.

Potential Chronic Health Effects:

CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available.

DEVELOPMENTAL TOXICITY: Not available. The substance may be toxic to blood, liver, skin, eyes, bone marrow. Repeated or prolonged exposure to the substance can produce target organs damage. Repeated or prolonged contact with spray mist may produce chronic eye irritation and severe skin irritation. Repeated or prolonged exposure to spray mist may produce respiratory tract irritation leading to frequent attacks of bronchial infection. Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

### 4: First Aid Measures

#### Eye Contact:

Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention immediately.

#### Skin Contact:

In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

#### Serious Skin Contact:

Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

#### Inhalation:

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

#### Serious Inhalation:

Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. **WARNING:** It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention.

#### Ingestion:

Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

Serious Ingestion: Not available.

#### Fire and Explosion Data

Flammability of the Product: Non-flammable.

Auto-Ignition Temperature: Not applicable.

Flash Points: Not applicable.

Flammable Limits: Not applicable.

Products of Combustion: Not available.

Fire Hazards in Presence of Various Substances: of metals

Explosion Hazards in Presence of Various Substances: Non-explosive in presence of open flames and sparks, of shocks.

Fire Fighting Media and Instructions: Not applicable.

Special Remarks on Fire Hazards:

Reacts with metals to liberate flammable hydrogen gas. Formation of flammable gases with aldehydes, cyanides, mercaptins, and sulphides.

Special Remarks on Explosion Hazards: Mixtures with nitromethane are explosive. (Phosphoric Acid)

### **6. Accidental Release Measures**

#### Small Spill:

Dilute with water and mop up or absorb with an inert dry material and place in an appropriate waste disposal container. If necessary: Neutralize the residue with a dilute solution of sodium carbonate.

#### Large Spill:

Corrosive liquid. Poisonous liquid. 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 vapours. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal.

Neutralize the residue with a dilute solution of sodium carbonate. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

### **7. Handling and Storage**

Precautions:

Do not ingest. Do not breathe gas/fumes/ vapor/spray. Never add water to this product. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, combustible materials, metals, alkalis.

May corrode metallic surfaces. Store in a metallic or coated fibreboard drum using a strong polyethylene inner package.

Storage: Keep container tightly closed. Keep container in a cool, well-ventilated area.

## 8. Exposure Controls/Personal Protection

### Engineering Controls:

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapours below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

### Personal Protection:

Face shield. Full suit. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves. Boots.

### Personal Protection in Case of a Large Spill:

Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

### Exposure Limits:

Phosphoric Acid TWA: 1 STEL: 3 (mg/m<sup>3</sup>) from ACGIH (TLV) [United States] TWA: 1 STEL: 3 (mg/m<sup>3</sup>) from OSHA (PEL) [United States] TWA: 1 STEL: 3 (mg/m<sup>3</sup>) from NIOSH TWA: 1 STEL: 3 (mg/m<sup>3</sup>) [Mexico] Consult local authorities for acceptable exposure limits.

## 9. Physical and Chemical Properties

Physical state and appearance: Liquid. (Syrupy liquid Viscous liquid.)

odour:	Odourless.
Taste:	Acid.
Molecular Weight:	Not applicable.
Colour:	Clear Colourless.
pH (1% soln/water):	Acidic.
Boiling Point:	158°C (316.4°F)
Melting Point:	21°C (69.8°F)
Critical Temperature:	Not available.
Specific Gravity:	1.685 @ 25 C (Water = 1)
Vapor Pressure:	0.3 kPa (@ 20°C)
Vapor Density:	3.4 (Air = 1)
Volatility:	Not available.
odour Threshold:	Not available.
Water/Oil Dist. Coeff.:	Not available.
Ionicity (in Water):	Not available.
Dispersion Properties:	See solubility in water.
Solubility:	Easily soluble in hot water. Soluble in cold water.

## 10. Stability and Reactivity Data

Stability:	The product is stable.
Instability Temperature:	Not available.
Conditions of Instability:	Incompatible materials
Incompatibility with various substances:	Reactive with oxidizing agents, combustible materials, metals, alkalis.
Corrosivity:	Extremely corrosive in presence of copper, of stainless steel (304), of stainless steel (316). Highly corrosive in presence of aluminium. Non-corrosive in presence of glass.

#### Special Remarks on Reactivity:

Reacts with metals to liberate flammable hydrogen gas. Incompatible with sodium tetra hydroborate producing a violent exothermic reaction. Heat generated with: alcohols, glycols, aldehydes, amides, amines, azo-compounds, carbamates, caustics, esters, ketones, phenols and cresols, organophosphates, epoxides, combustible materials, unsaturated halides, organic peroxides. Formation of flammable gases, with aldehydes, cyanides, mercaptins, and sulphides. Formation of toxic fumes with cyanides, fluorides, halogenated organics, sulphides, and organic peroxides. Do not mix with solutions containing bleach or ammonia. Incompatible with nitromethane, chlorides + stainless steel. (Phosphoric Acid)

#### Special Remarks on Corrosivity:

Minor corrosive effect on bronze. Severe corrosive effect on brass. Corrosive to ferrous metals and alloys.

Polymerization: Will not occur.

### **11. Toxicological Information**

Routes of Entry: Absorbed through skin. Dermal contact. Eye contact. Inhalation. Ingestion.

Toxicity to Animals:

Acute oral toxicity (LD50): 1530 mg/kg [Rat]. Acute dermal toxicity (LD50): 2740 mg/kg [Rabbit].

Chronic Effects on Humans: May cause damage to the following organs: blood, liver, skin, eyes, bone marrow.

Other Toxic Effects on Humans:

Extremely hazardous in case of inhalation (lung corrosive). Very hazardous in case of skin contact (irritant), of ingestion. Hazardous in case of skin contact (corrosive, permeator), of eye contact (corrosive).

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans: Not available.

Special Remarks on other Toxic Effects on Humans: Acute Potential Health Effects: Skin: Corrosive and causes severe skin irritation and can cause severe skin burns. May affect behaviour (somnolence or excitement) if absorbed through skin. Eyes: Corrosive. Liquid or vapor causes severe eye irritation and can cause severe eye burns leading to permanent corneal damage or chemical conjunctivitis. Ingestion: May be harmful if swallowed. Causes irritation and burns of the gastrointestinal digestive tract. Causes severe pain, nausea, vomiting, diarrhoea hematemesis, gastrointestinal haemorrhaging, and shock. May cause corrosion and permanent tissue destruction of the oesophagus and digestive tract. May affect behaviour and urinary system, liver (hepatocellular damage, hepatic enzymes increased), blood (blood dyscrasia).

### **12. Ecological Information**

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:

Possibly hazardous short-term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are less toxic than the product itself.

Special Remarks on the Products of Biodegradation: Not available.

### **13. Disposal Considerations**

Waste Disposal:

Waste must be disposed of in accordance with federal, state and local environmental control regulations.

#### **14. Transport Information**

DOT Classification: Class 8: Corrosive material  
Identification: Phosphoric acid (Phosphoric Acid) UNNA: 1805 PG: III  
Special Provisions for Transport: Not available.

#### **15. Other Regulatory Information**

Other Regulations: OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).

Protective Equipment:

Gloves. Full suit. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Face shield.

#### **16. Other Information**

References: Not available.

Other Special Considerations: Not available.

#### **EXCLUSION OF LIABILITY**

All information and instructions provided in this Material Safety Data Sheet in respect of the substance is given solely in terms of the provisions of the Occupational Health and Safety Act No 85 of 1993

and Regulations ("the Act"), is based on scientific and technical knowledge as at the date indicated on this MS Material Safety Data Sheet and is presented in good faith to be correct.

The information and instructions provided in this MSDS apply only to the substance in its present form and not to any formulation or mix, in which event it is the sole responsibility of the user of the substance as formulated and/or mixed to investigate and establish any danger which may arise out of its use, wherever such user may be situated.

It is the sole responsibility of the person in receipt of this Material Safety Data Sheet wherever such recipient may be situated, to ensure that the information provided is communicated to and understood by any person who may come in contact with the substance in any place and in any manner whatsoever. If such recipient produces formulations or mixes using the substance, then it is such recipient's sole responsibility to comply with the provisions of the Act in respect of the provision of the necessary Material Safety Data Sheet, or to comply with any other applicable legislation.