



# SAFETY DATA SHEET

Name of Product:

## PHOSPHORIC ACID HP 45-85%

Product #: See Section 1

Revision Date: August 17, 2015

### SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Phosphoric Acid HP  
SYNONYMS: Phosphoric Acid; Phosphoric Acid SP; Phosphoric Acid HP; purified phosphoric acid.  
PRODUCT CODES: C000011, C000012, C000015, C000020, C000021, C000022, C000023

MANUFACTURER: Nachurs Alpine Solutions  
DIVISION: Marion  
ADDRESS: 421 Leader Street  
Marion, OH 43302

PHONE: 800-622-4877 (USA)  
800-265-2268 (CANADA)

EMERGENCY PHONE: United States: Chemtrec: 800-424-9300 (CCN# 15189)  
Canada: CANUTEC: 1-613-996-6666  
I TECH 877-324-4402


CHEMICAL NAME: 45 - 85 % Phosphoric Acid  
CHEMICAL FAMILY: Inorganic Acid  
CHEMICAL FORMULA:  $H_3PO_4$

PRODUCT USE: Manufacturing, pH Adjustment, Inhibitor, Electrolyte, Cleaners, Flux, Dispersant, Industrial Etchant

### SECTION 2: HAZARDS IDENTIFICATION

GHS ELEMENTS:

Hazard Classification: Corrosive to metals (Category 1).  
Skin corrosion (Category 1B).  
Serious eye damage (Category 1).

Pictogram: 

Signal Word: Danger

Hazard Statements: May be corrosive to metals. Causes severe skin burns and eye damage.

Precautionary Statements: Wash skin thoroughly after handling. Wear protective gloves, clothing, eye and face protection.  
If swallowed, rinse mouth. Do NOT induce vomiting.  
If on hair or skin, remove all contaminated clothing and rinse skin with water.  
If inhaled, remove victim to fresh air and keep at rest in a position comfortable for breathing.  
If in eyes, rinse carefully with water for several minutes. Remove contact lenses, if able and continue rinsing.  
Immediately call a poison center or doctor/physician. See First Aid instruction for specific treatment.  
Wash contaminated clothing before reuse. Absorb spillage to prevent material damage.  
Store in corrosive resistant containers in a secured location.  
Dispose of contents or container to an approved waste disposal plant.

POTENTIAL HEALTH EFFECTS

EYES: Corrosive! Will cause severe burns and permanent eye damage.  
SKIN: Corrosive! Will cause severe burns if not rinsed off immediately.  
INGESTION: Corrosive! Burns to the mouth, throat and digestive tract. May cause pain in the stomach, difficulty in breathing, nausea, vomiting, diarrhea, and convulsions; in severe cases, collapse and death  
INHALATION: Phosphoric acid has a very low vapour pressure at room temperature and is not expected to present an inhalation hazard. However, acid mist can cause irritation of the nose, throat and respiratory tract.

ACUTE HEALTH HAZARDS: Skin: Dermatitis may occur from prolonged or repeated skin contact.

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CHRONIC HEALTH HAZARDS: This substance may be toxic to blood, liver, skin, eyes and bone marrow. Prolonged exposure to the substance can produce target organs damage.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: N/A

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## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

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INGREDIENT (HAZARDOUS): Phosphoric Acid, 45-85 w/w%

CAS NO.: 7664-38-2

EC NO.: 231-633-2

OSHA PEL-TWA: 1 mg/m<sup>3</sup>

OSHA PEL STEL: 3 mg/m<sup>3</sup>

OSHA PEL CEILING: N/A

ACGIH TLV-TWA: 1 mg/m<sup>3</sup>

ACGIH TLV STEL: 3 mg/m<sup>3</sup>

ACGIH TLV CEILING: N/A

SECTION 3 NOTES: Balance ingredient is non-hazardous Water CAS NO.: 7732-18-5

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## SECTION 4: FIRST AID MEASURES

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EYES: Immediately flush eyes with running water for a minimum of 30 minutes, preferably up to 60 minutes. Hold eyelids open during flushing. OBTAIN MEDICAL ATTENTION IMMEDIATELY. Do not transport victim until the recommended flushing period is completed unless flushing can be continued during transport.

SKIN: Flush skin with running water for a minimum of 20 minutes. Start flushing while removing contaminated clothing. If irritation persists, repeat flushing. Obtain medical attention IMMEDIATELY. Do not transport victim unless the recommended flushing period is completed or flushing can be continued during transport.

INGESTION: Never give anything by mouth if victim is rapidly losing consciousness, or is unconscious or convulsing. Have victim rinse mouth thoroughly with water. DO NOT INDUCE VOMITING. Have victim drink 1/2 to 1 glass of water to dilute material. If spontaneous vomiting occurs, have victim lean forward with head down to avoid breathing in vomitus, rinse mouth and administer more water. IMMEDIATELY transport victim to an emergency facility.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If not breathing and no pulse give cardiopulmonary resuscitation (CPR). Keep patient warm and at rest. Obtain medical attention immediately.

NOTES TO PHYSICIANS OR FIRST AID PROVIDERS: Provide general supportive measures (comfort, warmth, rest). Consult a physician and/or nearest Poison Control Centre for all exposures except minor instances of inhalation or skin contact.

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## SECTION 5: FIRE-FIGHTING MEASURES

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FLAMMABILITY: Nonflammable.

FLAMMABLE LIMITS IN AIR:  
(% BY VOLUME) UPPER: N/A  
LOWER: N/A

FLASH POINT: N/A

METHOD USED: N/A

AUTOIGNITION TEMPERATURE: N/A

NFPA HAZARD CLASSIFICATION:  
HEALTH: 3  
FLAMMABILITY: 0

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**REACTIVITY:** 0  
**OTHER:** None

## HMIS HAZARD CLASSIFICATION

**HEALTH:** 3  
**FLAMMABILITY:** 0  
**REACTIVITY:** 0  
**PROTECTION:** C

**EXTINGUISHING MEDIA:** Chemical type foam, Dry Chemical, Water Spray

**SPECIAL FIRE FIGHTING PROCEDURES:** This product is not flammable. However, hazardous decomposition and combustion products may be formed in a fire situation. Wear self-contained breathing apparatus for firefighting if necessary. Cool exposed containers with water spray to prevent overheating.

**UNUSUAL FIRE AND EXPLOSION HAZARDS:** Evacuate personnel downwind of fire to avoid inhalation of irritating and/or harmful fumes and smoke.

**HAZARDOUS DECOMPOSITION PRODUCTS:** Phosphine, Oxides of Phosphorus

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## SECTION 6: ACCIDENTAL RELEASE MEASURES

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**ACCIDENTAL RELEASE MEASURES:** Wear respiratory protection and avoid breathing vapors, mists or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. See Section 8 for personal protection equipment.

Stop the discharge if possible and contain by constructing barrier (dykes, lagoons) for release to land, reclaim product for reuse or treat with neutralizing agent and recover for disposal. For release to water, contain by damming and water diversion if possible, neutralize and recover for disposal. Report significant spills to government environmental authorities.

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## SECTION 7: HANDLING AND STORAGE

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**HANDLING AND STORAGE:** Avoid contact with either liquid or mist. Do not eat drink or smoke in work area. Wash hands thoroughly after handling this material. Store in dry, well-ventilated area away from incompatible materials. Protect against physical damage.

Maintain storage in corrosive resistant containers in secured location.

**OTHER PRECAUTIONS:** Containers should be kept well sealed when not in use. Handle as a corrosive liquid. See Section 2 for precautions.

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## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

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**ENGINEERING CONTROLS:** Good ventilation should be sufficient to control airborne levels of material. Use process enclosures where possible.

**VENTILATION:** Good ventilation should be sufficient to control airborne levels of material. Use process enclosures where possible.

**RESPIRATORY PROTECTION:** Always wear NIOSH/MSHA approved respirator equipment when vapour or mists may exceed applicable concentration limits.

**EYE PROTECTION:** Chemical safety goggles. A face shield may also be necessary.

**SKIN PROTECTION:** Nitrile rubber, neoprene, or PVC gloves, rubber boots and protective clothing should be used.

**OTHER PROTECTIVE CLOTHING OR EQUIPMENT:** Have a safety shower/eye-wash station readily available in the immediate work area.

**WORK HYGIENIC PRACTICES:** Wash hands thoroughly after handling.

**EXPOSURE GUIDELINES:** See Section 3.

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## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

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APPEARANCE:	Syrupy liquid		
ODOR:	Odorless		
ODOR THRESHOLD:	No data available.		
PHYSICAL STATE:	Liquid.		
pH (neat):	1.0 (neat)		
CONCENTRATION:	<u>50%</u>	<u>75%</u>	<u>85%</u>
BOILING POINT:	F°: 226	275	316
	C°: 108	135	158
MELTING POINT:	F°: -43.4	1.4	70
	C°: -41.9	-17	21.1
FLAMMABILITY:	Nonflammable		
FLASH POINT:	N/A		
METHOD USED:	N/A		
EVAPORATION RATE:	N/A		
FLAMMABLE LIMITS IN AIR: (% BY VOLUME)	UPPER: N/A LOWER: N/A		
VAPOR PRESSURE (mmHg)	5 mmHg F°: 77°F C°: 25°C		
VAPOR DENSITY (AIR = 1):	Unknown		
SPECIFIC GRAVITY (H <sub>2</sub> O = 1)	1.35-1.81 @ 15.5°C		
DENSITY, LBS/GAL:	11.2-15.1		
SOLUBILITY IN WATER:	100% soluble in water, also soluble in Methanol and Ethanol		
PARTITION COEFFICIENT:	n-octanol/water – N/A		
PERCENT SOLIDS BY WEIGHT:	45-85%		
PERCENT VOLATILE:	N/A		
VOLATILE ORGANIC COMPOUNDS (VOC):	N/A		
AUTOIGNITION TEMPERATURE:	N/A		
THERMAL DECOMPOSITION:	N/A		
VISCOSITY:	Thicker than water; 3.6-28 cP @20 C°		
MOLECULAR WEIGHT:	98.00		

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## SECTION 10: STABILITY AND REACTIVITY

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	STABLE	UNSTABLE
STABILITY:	x	
CONDITIONS TO AVOID (STABILITY):	Excessive heat	
INCOMPATIBILITY (MATERIAL TO AVOID):	Strong bases, Active Metals	
HAZARDOUS DECOMPOSITION OR BY-PRODUCTS:	Phosphine, Oxides of Phosphorus	
HAZARDOUS POLYMERIZATION:	Will not occur	
CONDITIONS TO AVOID (POLYMERIZATION):	N/A	

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## SECTION 11: TOXICOLOGICAL INFORMATION

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TOXICOLOGICAL INFORMATION:	LD50 (Dermal, Rabbit):	2740 mg/kg
	LD50 (Oral, Rat):	1530 mg/kg
	LC50 (Inhalation, Rat):	25.5 mg/m <sup>3</sup>
	LC50 (Inhalation, Mouse):	25.5 mg/m <sup>3</sup>
CARCINOGENICITY:	No component of this product present at levels greater than 0.1% is identified as probable, possible or confirmed human carcinogen by IARC, ACGIH, NTP or OSHA.	

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## SECTION 12: ECOLOGICAL INFORMATION

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ECOLOGICAL INFORMATION:	May cause adverse environmental impact if material reaches waterways. The acidity of phosphoric acid may be reduced by natural hard minerals, but phosphate may persist. Dangerous to aquatic life at high concentrations.  LC50 (Mosquito Fish): 138 mg/L (96 hr)
BIODEGRADABILITY:	May biodegrade over time. Products of degradation are less toxic than the substance itself.
MOBILITY:	Mobile in soil and water. During transport through soil, phosphoric acid will dissolve some of the soil materials (carbonate-based). Will be neutralized to some extent through proton and phosphate in absorption. However, significant amounts of acid may be transported to groundwater.

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## SECTION 13: DISPOSAL CONSIDERATIONS

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WASTE DISPOSAL METHOD:	Reclaim for reuse, if possible. Otherwise dispose of at an appropriate waste disposal facility in accordance with local, provincial or federal regulations. DO NOT dispose of waste with normal garbage or in local sewerage system. Lime, soda ash or sodium bicarbonate will deactivate the phosphoric acid.
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## SECTION 14: TRANSPORT INFORMATION

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### U.S. DEPARTMENT OF TRANSPORTATION:

PROPER SHIPPING NAME:	Phosphoric Acid Liquid			
HAZARD CLASS:	Corrosive, Class 8			
ID NUMBER:	UN1805			
PACKING GROUP:	III			
LABEL STATEMENT:				
Health: 3	Flammability: 0	Reactivity: 0	Specific: None	

### WATER TRANSPORTATION:

PROPER SHIPPING NAME:	Phosphoric Acid Liquid
HAZARD CLASS:	Corrosive, Class 8
ID NUMBER:	UN1805
PACKING GROUP:	III

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LABEL STATEMENTS:

Health: 3                      Flammability: 0                      Reactivity: 0                      Specific: None

AIR TRANSPORTATION

PROPER SHIPPING NAME: Phosphoric Acid Liquid

HAZARD CLASS: Corrosive, Class 8

ID NUMBER: UN1805

PACKING GROUP: III

LABEL STATEMENTS:

Health: 3                      Flammability: 0                      Reactivity: 0                      Specific: None

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## SECTION 15: REGULATORY INFORMATION

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U.S. FEDERAL REGULATIONS:

TSCA (TOXIC SUBSTANCE CONTROL ACT): Yes

CERCLA (COMPREHENSIVE RESPONSE COMPENSATION, AND LIABILITY ACT): RQ = 5000 lbs

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT):

Section 302: No

Section 311: Yes

Section 312: Yes

Section 313: No

STATE REGULATIONS: California Prop 65: No

INTERNATIONAL REGULATIONS:

Canadian DSL: Yes                      WHMIS: Category E

EINECS #: 231-633-2

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## SECTION 16: OTHER INFORMATION

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**PREPARATION INFORMATION:**                      *Technical Services*

DISCLAIMER:                      The information contained herein is offered only as a guide to the handling of this specific material and has been prepared in good faith by technically knowledgeable personnel. It is not intended to be all-inclusive and the manner and conditions of use and handling may involve other and additional considerations. No warranty of any kind is given or implied and Nachurs Alpine Solutions will not be liable for any damages, losses, injuries or consequential damages which may result from the use or reliance on any information contained herein.

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