

Material Safety Data Sheet

Revision Issued: 2/28/07	Supercedes: 12/31/2006	First Issued: 5/31/2001
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Section I – Product and Company Identification

Product Name: Phosbrite Coproduct	PotashCorp MSDS No.: 98 ERG No.: 154
 <p>1101 Skokie Blvd., Northbrook, IL 60062 Phone (800) 241-6908 / (847) 849-4200</p> <p>Suite 500, 122 – 1st Avenue South Saskatoon, Saskatchewan Canada S7K7G3 Phone (800) 667-0403 from Canada (800) 667-3930 from USA</p> <p>Emergencies (800) 424-9300 (CHEMTREC) Web Site www.potashcorp.com Health Emergencies, Contact Your Local Poison Center</p>	<p>Flammability</p> <p>Health  Reactivity</p> <p>Specific Hazard</p> <p>NFPA Code</p>

Common Name: Phosphoric Acid & Sulfuric Acid	Formula: H ₃ PO ₄ & H ₂ SO ₄	Synonym: COPRODPB	Uses: Industrial, Agricultural
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Section II – Composition / Information On Ingredients

Chemical Name	CAS No.	Exposure Limits								% by Weight
		OSHA PEL		TLV – TWA		STEL		CEIL		
		mg/m ³	ppm	mg/m ³	ppm	mg/m ³	ppm	mg/m ³	ppm	
Phosphoric Acid	7664-38-2	1		1		3				30-50
Sulfuric Acid	7664-93-9	1		1		3				4-12
Nitric Acid	7697-37-2	5	2	5.2	2	10	4			0-4

Section III – Hazard Identification

Potential Acute Health Effects:	
Eyes and Skin:	Contact causes eye irritation, may cause burns or blindness. Substance is corrosive. May cause skin burns.
Inhalation:	Inhalation can cause irritation or corrosive burns to the upper respiratory system, including nose, mouth, and throat. Lung irritation and pulmonary edema can also occur.
Ingestion:	Ingestion causes irritation and can cause corrosive burns to mouth, throat and stomach. Can be fatal if swallowed.
Potential Chronic Health Effects:	Long-term exposure may cause upper respiratory disease and irritation of the skin and throat.
CARCINOGENICITY LISTS	IARC Monograph: Yes ⁽¹⁾ NTP: Yes ⁽¹⁾ OSHA: No

⁽¹⁾ Included based on liquid sulfuric acid concentration, however, basis of Carcinogenicity listing is sulfuric acid mist.

Section IV – First Aid Measures

Eyes:	Immediately flush eyes (holding eyelids apart) with plenty of water for at least 15 minutes. Get medical attention.
Skin:	Immediately flush skin with plenty of water while removing contaminated clothing. Get medical attention if irritation develops or persists.
Ingestion:	Do not induce vomiting. Drink large amounts of water (or milk if available) to dilute the acid. Get medical attention immediately.
Inhalation:	Remove to fresh air. If breathing has stopped, give artificial respiration. If breathing with difficulty, give oxygen. Observe for possible delayed reaction.

Section V – Fire Fighting Measures			
Flash Point:	Non-flammable	Autoignition Temperature:	Not Applicable
Lower Explosive Limit:	Not Applicable	Upper Explosive Limit:	Not Applicable
Unusual Fire and Explosion Hazards:	Phosphoric Acid is not flammable however the following hazards can occur during a fire: release of nitrogen oxides, sulfur oxides, phosphorus oxides and/or phosphine from thermal decomposition and hydrogen from reaction with metals.		
Extinguishing Media:	Chemical type foam, CO ₂ (Carbon Dioxide), dry chemical, water fog.		
Special Firefighting Procedures and Equipment:	Keep personnel removed from and upwind of fire. Wear full fire-fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA). Cool containers containing solution with water spray to prevent rupture		

Section VI – Accidental Release Measures	
Small Spill:	Neutralize acid spill with alkali such as soda ash, sodium bicarbonate, limestone or lime. Absorb material with an inert material such as sand, vermiculite, diatomaceous earth or other absorbent material and place in chemical waste container to be disposed at an appropriate waste disposal facility according to current applicable laws and regulations and product characteristics at time of disposal. Adequate ventilation is required for soda ash due to the release of carbon dioxide gas. No smoking in spill area.
Large Spill:	Contain spill with dikes and transfer the material to appropriate containers for reclamation or disposal. Absorb remaining spill with an inert material such as sand, vermiculite or other absorbent material and place in chemical waste container to be disposed at an appropriate waste disposal facility according to current applicable laws and regulations and product characteristics at time of disposal. Neutralize residue with alkali such as soda ash, sodium bicarbonate, limestone or lime. Adequate ventilation is required for soda ash due to the release of carbon dioxide gas. No smoking in spill area.
Release Notes:	If spill could potentially enter any waterway, including intermittent dry creeks, contact the local authorities. If in the U.S., contact the US COAST GUARD NATIONAL RESPONSE CENTER toll free number 800-424-8802. In case of accident or road spill notify: CHEMTREC IN USA at 800-424-9300; CANUTEC in Canada at 613-996-6666 CHEMTREC in other countries at (International code)+1-703-527-3887.
Comments:	See Section XIII for disposal information and Section XV for regulatory requirements. Large and small spills may have a broad definition depending on the user's handling system. Therefore, the spill category must be defined at the point of release by technically qualified personnel.

Section VII – Handling and Storage	
Ventilation:	Use with adequate ventilation.
Handling:	Use appropriate personal protective equipment as specified in Section VIII. Avoid contact with skin and eyes. Avoid inhalation and ingestion.
Storage:	Store in unopened container in cool, well ventilated area, away from potential sources of heat and fire. Keep away from combustible materials, strong bases and metals. Large storage tanks should be bermed and electrically grounded. Avoid using unprotected steel containers.

Section VIII – Exposure Controls/ Personal Protection	
Engineering Controls:	Good ventilation should be sufficient to control airborne levels.
Personal Protection:	
Eye Protection:	Wear chemical splash goggles and face shield (ANSI Z87.1 or approved equivalent) when eye and face contact is possible due to splashing or spraying of material.
Protective Clothing:	Where contact is likely, wear chemical-resistant gloves, a chemical suit, rubber boots and chemical safety goggles plus a face shield.
Respiratory Protection:	Wear NIOSH approved respiratory protective equipment when vapor or mists may exceed applicable concentration limits.
Other Protective Clothing or Equipment:	Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

Section IX – Physical and Chemical Properties			
Appearance/Color/Odor:	Clear, pale green liquid with no odor	Boiling Point:	Not Available
Melting Point/Range:	Not Applicable	Boiling Point Range:	219-264°F
Solubility in Water:	Complete	Vapor Pressure (mmHg):	17-7 mm Hg @ 70°F
Specific Gravity:	1.4-1.5 @ 80°F	Molecular Weight:	98
Vapor Density:	Not Available	% Volatiles:	Not Available
Bulk Density:	11-12 lbs/gal	Evaporation Rate:	Not Available
pH:	1.6-2.1 in 1% solution	Freezing Point:	Not Available
Viscosity:	21-43 cp @ 80°F	Density:	Not Available

Section X – Stability and Reactivity	
Stability:	This product is stable under normal conditions of storage, handling and use.
Hazardous Polymerization:	Will not occur
Conditions to Avoid:	High temperatures
Materials to Avoid (Incompatibles):	Bases, aluminum, copper, mild steel, brass, bronze and reducing agents.
Hazardous Decomposition Products:	Nitrogen oxides from reaction with reducing agents, nitrogen oxides, sulfur oxides, phosphorus oxides and/or phosphine from thermal decomposition and hydrogen gas from reaction with metals.

Section XI – Toxicological Information (Toxicological Information for Phosphoric Acid only. See MSDS 37 for Sulfuric Acid Information.)		
Significant Routes of Exposure:	Eyes, Skin, Respiratory System, Digestive Tract	
Toxicity to Animals:	Acute Oral Toxicity:	(Rat) LD ₅₀ = 1,530 mg/kg bw.
	Acute Inhalation Toxicity:	(Guinea pig, mouse, rat, rabbit) 1-hr: LC ₅₀ = 61 – 1,689 mg/m ³ P ₂ O ₅ .
	Acute Toxicity: Other Routes:	No data available.
	Acute Dermal Toxicity:	(Rabbit) 24-hr: LD ₅₀ (85-75% H ₃ PO ₄) = >1,260 – >3,160 mg/kg bw
	Repeated Dose Toxicity:	No data available.
	Eye & Skin Irritation/Corrosion:	Eye Irritation/Corrosion: (Rabbit) OECD Guideline 405: Not irritating at 17% solution but severe irritation at higher concentration. Skin Irritation/Corrosion: (Rabbit) 24-hr: Highly irritating to corrosive
Special Remarks on Toxicity to Animals:	Developmental Toxicity/Teratogenicity:	No data available.
	Bacterial Genetic Toxicity In-Vitro: Gene Mutation:	(S. typhimurium) Bacterial reverse mutation assay: Negative
	Non-Bacterial Genetic Toxicity In-Vitro: Chromosomal Aberration:	(Sea urchin) Embryo and sperm assays: Aberrations caused at pH 6.5.
	Toxicity to Reproduction:	(Rat) One-generation: 375 mg/kg bw did not affect offspring growth in rats.
	Carcinogenicity:	No data available
Other Effects on Humans:	Inhalation: 10,000 mg/m ³ is immediately dangerous to life (IDLH). Dermal contact: May irritate eyes and skin.	
Special Remarks on Chronic Effects on Humans	The International Agency for Research on Cancer (IARC) classified "strong inorganic acid mists containing sulfuric acid" as a Category 1 carcinogen, a substance that is "carcinogenic to humans". The National Toxicity Program classified "strong inorganic acid mists containing sulfuric acid" as a "known human carcinogen". These classifications are for strong inorganic acid mists only and do not apply to sulfuric acid or sulfuric acid solutions. The basis for the classifications rest on several epidemiology studies which have several deficiencies. These studies did not account for exposure to other substances, some known to be animal or potential human carcinogens, social influences (smoking, etc.) and included small numbers of subjects. Based on the overall weight of evidence from all human and chronic animal studies, no definitive casual relationship between sulfuric acid mist exposure and respiratory tract tumors has been shown. When handling this material avoid the creation of mist.	
Special Remarks on Other Effects on Humans:	No data available	

Section XII – Ecological Information		
Ecotoxicity	EPA Ecological Toxicity rating :	High
	Acute Toxicity to Fish:	(<i>L. macrochirus</i> (bluegill sunfish)) 96-hr static: LC ₅₀ = pH 3.0–3.5.
	Chronic Toxicity to Fish:	No data available
	Acute Toxicity to Aquatic Invertebrates:	(<i>Daphnia magna</i>) 12-hr static: EC ₅₀ = pH 4.6; (<i>Daphnia pulex</i>) 12-hr static: EC ₅₀ = pH 4.1; (<i>Gammarus pulex</i>) 12-hr static: LC ₅₀ = pH 3.4
	Chronic Toxicity to Aquatic Invertebrates:	No data available
	Acute Toxicity to Aquatic Plants:	No data available
	Toxicity to Bacteria:	(Activated sludge): EC ₅₀ = 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 H ₃ PO ₄ ; 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 and may migrate to water.
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 XIII – Disposal Considerations	
Product Disposal:	Dispose of waste at an appropriate waste disposal facility according to applicable laws and regulations. Neutralize with lime or other base. Collect in appropriate containers. Dispose of at an appropriate waste disposal facility in accordance with current applicable laws and regulations and product characteristics at time of disposal.
General Comments:	None

Section XIV – Transportation Information		
	USDOT	TDG - Canada
Proper Shipping Name:	Corrosive Liquid, Acidic, Inorganic, N.O.S.	Corrosive Liquid, Acidic, Inorganic, N.O.S.
Hazard Class:	8	8
Identification Number:	UN3264	UN3264
Packing Group (Technical Name):	II (Phosphoric Acid and Sulfuric Acid)	II (Phosphoric Acid and Sulphuric Acid)
Labeling / Placarding:	Corrosive	Corrosive
Authorized Packaging:	Rail: DOT 111A Rubber lined Truck: MC303, 304, 306, 307, 310, 311, 312, DOT 407, 412 Stainless Steel (Corrosive Resistant or protected) (Phosphoric acid weighs 13.5 to 16.5 lbs/gallon, cargo tanks must specify that such tanks are designed to handle the maximum lading density for these products)	
Notes:	TDG Note (Canada): Contains Phosphoric Acid which becomes a subsidiary class 9.2 when shipped in quantities over 300 kg per container. If product exceeds the CERCLA Reportable Quantity, the notation "RQ" shall be added before or after the basic shipping description.	

Section XV – Regulatory Information										
UNITED STATES: SARA Hazard Category:	This product has been reviewed according to the EPA Hazard Categories promulgated under Section 311 and 312 of the Superfund Amendment and reauthorization Act of 1986 (SARA title III) and is considered, under applicable definitions, to meet the following categories:									
	Fire:	No	Pressure Generating:	No	Reactivity:	No	Acute:	Yes	Chronic:	Yes
	40 CFR Part 355 - Extremely Hazardous Substances:						Nitric Acid, Sulfuric Acid			
	40 CFR Part 370 - Hazardous Chemical Reporting:						Applicable			
All intentional ingredients listed on the TSCA inventory.										
SARA Title III Information:	This product contains the following substances subject to the reporting requirements of Title III (EPCRA) of the Superfund amendments and Reauthorization Act of 1986 and 40 CFR Part 372:									
	Chemical	CAS NO.	Percent by Weight	CERCLA RQ (lbs)	SARA (1986) Reporting					
					311	312	313			
	Phosphoric Acid	7664-38-2	30-50	5000	Yes	Yes	No			
	Sulfuric Acid	7664-93-9	4-12	1000	Yes	Yes	Yes*			
	Nitric Acid	7697-37-2	0-4	1000	Yes	Yes	Yes			
	Note: * Aerosol only									
CERCLA/Superfund, 40 CFR Parts 117, 302:	If this product contains components subject to substances designated as CERCLA reportable Quantity (RQ) Substances, it will be designated in the above table with the RQ value in pounds. If there is a release of RQ Substance to the environment, notification to the National response Center, Washington D.C. (1-800-424-8802) is required.									
CANADA:	WHMIS Hazard Symbol and Classification:			This product is WHMIS controlled. Category E						
	Ingredient Disclosure List:			This product does contain ingredient(s) on this list.						
	Environmental Protection:			All intentional ingredients are listed on the DSL (Domestic Substance List).						
EINECS#:	(Phosphoric Acid) 231-633-2 (Sulfuric Acid) 231-639-5 (Nitric Acid) 231-714-2									
California: Prop 65:	This is not a chemical known to cause cancer, nor is it listed, however, "strong inorganic acid mists containing sulfuric acid" has been listed as carcinogenic on March 14, 2003.									

Section XVI – Other Information				
NFPA Hazard Ratings:	Health: 3	Fire: 0	Reactivity: 0	Special Hazards:
	0 = Insignificant	1 = Slight	2 = Moderate	3 = High 4 = Extreme
COMMENTS:				
Section(s) changed since last revision:	XI, XIV, XV			
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