
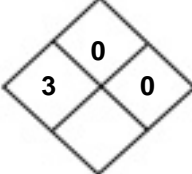


# Material Safety Data Sheet

Revision Issued: 3/9/07	Supercedes: 2/28/07	First Issued: 4/11/1996
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## Section I – Product and Company Identification

<b>Product Name:</b> <b>Monoaluminum Phosphate</b>	<b>PotashCorp MSDS No.:</b> 81 <b>ERG No.:</b> 154
 <p>1101 Skokie Blvd., Northbrook, IL 60062 Phone (800) 241-6908 / (847) 849-4200</p> <p>Suite 500, 122 – 1<sup>st</sup> Avenue South Saskatoon, Saskatchewan Canada S7K7G3 Phone (800) 667-0403 from Canada (800) 667-3930 from USA</p> <p><b>Emergencies (800) 424-9300 (CHEMTREC)</b> Web Site <a href="http://www.potashcorp.com">www.potashcorp.com</a> Health Emergencies, Contact Your Local Poison Center</p>	<p>Flammability</p> <p>Health  Reactivity</p> <p>Specific Hazard</p> <p><b>NFPA Code</b></p>

<b>Common Name:</b>	Monoaluminum Phosphate Acid	<b>Formula:</b>	Al(H <sub>2</sub> PO <sub>4</sub> ) <sub>3</sub>	<b>Synonym:</b>	MALP33, MALPTG85	<b>Uses:</b>	Industrial
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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 <sup>3</sup>	ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>	ppm	
Phosphoric Acid, as P <sub>2</sub> O <sub>5</sub>	7664-38-2	1		1		3				32-50
Phosphoric Acid Aluminum Salt (3:1)	13530-50-2									24-51

## Section III – Hazard Identification

<b>Potential Acute Health Effects:</b>	
<b>Eyes and Skin:</b>	Contact may cause significant irritation to the eyes and skin. Substance is corrosive.
<b>Inhalation:</b>	Inhalation can cause irritation or corrosive burns to the upper respiratory system, including nose, mouth, and throat.
<b>Ingestion:</b>	Not expected to cause significant irritation to the digestive tract.
<b>Potential Chronic Health Effects:</b>	No available data.
<b>CARCINOGENICITY LISTS</b>	<b>IARC Monograph:</b> No <b>NTP:</b> No <b>OSHA:</b> No

## Section IV – First Aid Measures

<b>Eyes:</b>	Immediately flush eyes (holding eyelids apart) with plenty of water for at least 15 minutes. Get medical attention if irritation develops.
<b>Skin:</b>	Immediately flush skin with plenty of water while removing contaminated clothing. Get medical attention if irritation develops or persists.
<b>Ingestion:</b>	Not expected to cause significant irritation of the digestive tract.
<b>Inhalation:</b>	Remove to fresh air. If breathing has stopped, give artificial respiration. If breathing with difficulty, give oxygen. Observe for possible delayed reaction.

<b>Section V – Fire Fighting Measures</b>			
<b>Flash Point:</b>	Non-flammable	<b>Autoignition Temperature:</b>	Not Applicable
<b>Lower Explosive Limit:</b>	Not Applicable	<b>Upper Explosive Limit:</b>	Not Applicable
<b>Unusual Fire and Explosion Hazards:</b>	This product is not flammable however the following hazards can occur during a fire: release of phosphorus oxides and/or phosphine from thermal decomposition and hydrogen from reaction with metals.		
<b>Extinguishing Media:</b>	Chemical type foam, CO <sub>2</sub> (Carbon Dioxide), dry chemical, water fog.		
<b>Special Firefighting Procedures and Equipment:</b>	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 product with water spray to prevent rupture.		

<b>Section VI – Accidental Release Measures</b>	
<b>Small Spill:</b>	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.
<b>Large Spill:</b>	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.
<b>Release Notes:</b>	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.
<b>Comments:</b>	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.

<b>Section VII – Handling and Storage</b>	
<b>Ventilation:</b>	Use with adequate ventilation.
<b>Handling:</b>	Use appropriate personal protective equipment as specified in Section VIII. Avoid contact with skin and eyes. Avoid inhalation and ingestion.
<b>Storage:</b>	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.

<b>Section VIII – Exposure Controls/ Personal Protection</b>	
<b>Engineering Controls:</b>	Good ventilation should be sufficient to control airborne levels.
<b>Personal Protection:</b>	
<b>Eye Protection:</b>	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.
<b>Protective Clothing:</b>	Where contact is likely, wear chemical-resistant gloves, a chemical suit, rubber boots and chemical safety goggles plus a face shield.
<b>Respiratory Protection:</b>	Wear NIOSH approved respiratory protective equipment when vapor or mists may exceed applicable
<b>Other Protective Clothing or Equipment:</b>	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, colorless liquid with faint odor	Boiling Point:	Not Available
Melting Point/Range:	<0°C	Boiling Point Range:	Not Available
Solubility in Water:	Complete	Vapor Pressure (mmHg):	Not Available
Specific Gravity:	1.4-1.5 @ 25°C/15.5°C	Molecular Weight:	318 Al(H <sub>2</sub> PO <sub>4</sub> ) <sub>3</sub>
Vapor Density:	Not Applicable	% Volatiles:	Not Applicable
Bulk Density:	12-13 lbs/gal	Evaporation Rate:	Not Applicable
pH:	2 in 1% solution	Freezing Point:	Not Available
Viscosity:	Not Available	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 and bronze
Hazardous Decomposition Products:	Phosphorus oxides and/or phosphine from thermal decomposition and hydrogen gas from reaction with metals.

Section XI – Toxicological Information		
Significant Routes of Exposure:	Eyes, Skin, Respiratory System, Digestive Tract	
Toxicity to Animals:	Acute Oral Toxicity:	(Rat) LD <sub>50</sub> = 1,530 mg/kg bw.
	Acute Inhalation Toxicity:	(Guinea pig, mouse, rat, rabbit ) 1-hr: LC <sub>50</sub> = 61 – 1,689 mg/m <sup>3</sup> P <sub>2</sub> O <sub>5</sub> .
	Acute Toxicity: Other Routes:	No data available
	Acute Dermal Toxicity:	(Rabbit) 24-hr: LD <sub>50</sub> (85-75% H <sub>3</sub> PO <sub>4</sub> ) = >1,260 – >3,160 mg/kg bw.
	Repeated Dose Toxicity:	No data available
	Eye & Skin Irritation/Corrosion:	Eye: (Rabbit) OECD Guideline 405: Not irritating at 17% solution but severe irritation at higher concentration. Skin: (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:	( <i>S. typhimurium</i> ) 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 <sup>3</sup> is immediately dangerous to life (IDLH). Dermal contact: May irritate eyes and skin.	
Special Remarks on Chronic Effects on Humans	No data available	
Special Remarks on Other Effects on Humans:	No data available	

## Section XII – Ecological Information

Ecotoxicity	<b>EPA Ecological Toxicity rating :</b>	High
	<b>Acute Toxicity to Fish:</b>	( <i>L. macrochirus</i> (bluegill sunfish)) 96-hr static: LC <sub>50</sub> = pH 3.0–3.5.
	<b>Chronic Toxicity to Fish:</b>	No data available
	<b>Acute Toxicity to Aquatic Invertebrates:</b>	( <i>Daphnia magna</i> ) 12-hr static: EC <sub>50</sub> = pH 4.6; ( <i>Daphnia pulex</i> ) 12-hr static: EC <sub>50</sub> = pH 4.1; ( <i>Gammarus pulex</i> ) 12-hr static: LC <sub>50</sub> = pH 3.4.
	<b>Chronic Toxicity to Aquatic Invertebrates:</b>	No data available
	<b>Acute Toxicity to Aquatic Plants:</b>	No data available
	<b>Toxicity to Bacteria:</b>	(Activated sludge): EC <sub>50</sub> = pH 2.55.
	<b>Toxicity to Soil Dwelling Organisms:</b>	No data available
	<b>Toxicity to Terrestrial Plants:</b>	(Peas, beans, beets, rapeseed and weeds) Sprayed with 15-20% solution of H <sub>3</sub> PO <sub>4</sub> : Foliage was destroyed on all plants.
Environmental Fate:	<b>Stability in Water:</b>	Ionic dissociation in water.
	<b>Stability in Soil:</b>	Dissolves some soil material (carbonates).
	<b>Transport and Distribution:</b>	Under acidic soil conditions, sparsely soluble phosphates tend to solubilize and may migrate to water.
<b>Toxicity:</b>	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:	<b>Biodegradation:</b>	Biodegradation: Under anaerobic conditions, microorganisms may degrade the product to phosphine.
	<b>Photodegradation:</b>	No data available

## Section XIII – Disposal Considerations

<b>Product Disposal:</b>	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.
<b>General Comments:</b>	None

## Section XIV – Transportation Information

	USDOT	TDG - Canada
<b>Proper Shipping Name:</b>	Corrosive Liquid, Acidic, Inorganic, N.O.S.	Corrosive Liquid, N.O.S.
<b>Hazard Class:</b>	8	8
<b>Identification Number:</b>	UN3264	UN1760
<b>Packing Group (Technical Name):</b>	II (Monoaluminum Phosphate Solution and Phosphoric Acid)	II (Monoaluminum Phosphate Solution and Phosphoric Acid)
<b>Labeling / Placarding:</b>	Corrosive	Corrosive
<b>Authorized Packaging:</b>	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.	
<b>Notes:</b>	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										
<b>UNITED STATES: SARA Hazard Category:</b>	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:									
	<b>Fire:</b>	No	<b>Pressure Generating:</b>	No	<b>Reactivity:</b>	No	<b>Acute:</b>	Yes	<b>Chronic:</b>	No
	<b>40 CFR Part 355 - Extremely Hazardous Substances:</b>						None			
	<b>40 CFR Part 370 - Hazardous Chemical Reporting:</b>						Applicable			
<b>All intentional ingredients listed on the TSCA inventory.</b>										
<b>SARA Title III Information:</b>	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:									
	<b>Chemical</b>	<b>CAS NO.</b>	<b>Percent by Weight</b>	<b>CERCLA RQ (lbs)</b>	<b>SARA (1986) Reporting</b>					
					<b>311</b>	<b>312</b>	<b>313</b>			
	Phosphoric Acid, as P <sub>2</sub> O <sub>5</sub>	7664-38-2	32-50	5000	Yes	Yes	No			
<b>CERCLA/Superfund, 40 CFR Parts 117, 302:</b>	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.									
<b>CANADA:</b>	<b>WHMIS Hazard Symbol and Classification:</b>			This product is WHMIS controlled. Category E						
	<b>Ingredient Disclosure List:</b>			This product does contain ingredient(s) on this list.						
	<b>Environmental Protection:</b>			All intentional ingredients are listed on the DSL (Domestic Substance List).						
<b>EINECS#:</b>	(Phosphoric Acid) 231-633-2 (Aluminum Tris(Dihydrogen Phosphate)) 236-875-2									
<b>California: Prop 65:</b>	This is not a chemical known to cause cancer, nor is it listed.									

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

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