Material Safety Data Sheet

Revision Issued: 2/28/07	Supercedes: 12/31/2006	First Issued: 1/20/1996

Section I – Product and Company Identification

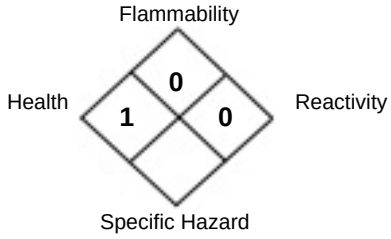
Product Name: **DAP (Diammonium Phosphate)**

PotashCorp MSDS No.: 4
ERG No.: N/A

1101 Skokie Blvd., Northbrook, IL 60062
Phone (800) 241-6908 / (847) 849-4200

Suite 500, 122 – 1st Avenue South
Saskatoon, Saskatchewan Canada S7K7G3
Phone (800) 667-0403 from Canada
(800) 667-3930 from USA

Emergencies (800) 424-9300 (CHEMTREC)
Web Site www.potashcorp.com
Health Emergencies, Contact Your Local Poison Center



NFPA Code

Common Name: Diammonium Phosphate	**Formula:** $(NH_4)_2HPO_4$	**Synonym:** DAP, DAPLG	**Uses:** Agricultural

Section II – Composition / Information On Ingredients

Chemical Name	CAS No.	Exposure Limits								% by Weight
		OSHA PEL		TLV – TWA		STEL		CEIL		
		mg/m³	ppm	mg/m³	ppm	mg/m³	ppm	mg/m³	ppm	
Diammonium Phosphate, as P_2O_5 ***	7783-28-0	15/5 *		10/3 **						46
Total Nitrogen, as N ***										18
Fluorides, as F		2.5		2.5						1

* For particulates not otherwise regulated, standard is 15 mg/m³ total dust and 5 mg/m³ for respirable fraction.
** For particulates (insoluble) not otherwise specified, adopted value is 10mg/m³ for inhalable fraction and 3 mg/m³ for respirable fraction.
*** Product contains diammonium phosphate as essential ingredient with small amounts of monoammonium phosphate, ammonium sulfate, urea, and aluminum/calcium/iron/magnesium phosphate compounds.

Section III – Hazard Identification

Potential Acute Health Effects:			
Eyes and Skin:	Contact may cause eye irritation and prolonged contact with skin may cause some irritation.		
Inhalation:	High dust concentrations of air-borne material may cause irritation of the nose and upper respiratory tract with symptoms such as sore throat and coughing. Inhalation of decomposition gases can cause irritation and corrosive effects on the respiratory system. Some lung effects may be delayed.		
Ingestion:	Ingestion of small quantities are unlikely to cause toxic effect. Large quantities may give rise to gastro-intestinal disorders.		
Potential Chronic Health Effects:	No adverse effects are known.		
CARCINOGENICITY LISTS	**IARC Monograph:** No	**NTP:** No	**OSHA:** No

Section IV – First Aid Measures	
Eyes:	Immediately flush eyes (holding eyelids apart) with plenty of water for at least 15 minutes. Get medical attention if irritation develops or persists.
Skin:	Wash skin thoroughly with soap and water.
Ingestion:	Do not induce vomiting. Drink large amounts of water (or milk if available) to dilute stomach contents. Small quantities are unlikely to cause toxic effect. Get medical attention if a large amount of DAP is ingested (small children, more than 50g).
Inhalation:	Remove from source of exposure to dusts. Obtain medical attention if the effects occur. Persons who have inhaled decomposition gases (e.g. in a fire) should obtain immediate medical attention.

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:	DAP is a non-flammable inorganic salt and is not flammable however when strongly heated, DAP will decompose giving off ammonia.		
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).		

Section VI – Accidental Release Measures	
Small Spill:	Spillage should be swept up and placed 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.
Large Spill:	Contain spill and transfer the material to appropriate containers for reclamation or disposal. Dispose of material at an appropriate waste disposal facility according to current applicable laws and regulations and product characteristics at time of disposal. Adequate ventilation is required.
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 excessive generation of dust and avoid unnecessary exposure to the atmosphere to prevent moisture pick-up.
Storage:	Store in dry, well ventilated area, away from potential sources of heat and fire.

Section VIII – Exposure Controls/ Personal Protection	
Engineering Controls:	Avoid high dust concentration and provide ventilation where necessary.
Personal Protection:	
Eye Protection:	Wear tight fitting goggles in dusty areas to reduce dust exposure to the eyes.
Protective Clothing:	Wear suitable gloves when handling this product over long periods. If skin irritation occurs, wear long sleeves.
Respiratory Protection:	Wear NIOSH approved respiratory protective equipment when exposure exceeds the OSHA nuisance dust standard of 15 mg/m^3 or the ACGIH nuisance dust limit of 10 mg/m^3 for the eight hour time weighted average. When stored in closed area, a self-contained breathing apparatus is required to protect against ammonia gas.
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:	Granular solid with color ranging from gray to brown/black. Product has ammonia odor when confined.	**Boiling Point:**	Decomposes
Melting Point/Range:	155ºC	**Boiling Point Range:**	Not Applicable
Solubility in Water:	588 g/L @ 20^{o}C	**Vapor Pressure (mmHg):**	<1 mm Hg @ 20^{o}C
Specific Gravity:	1.6 @ 20^{o}C	**Molecular Weight:**	132
Vapor Density:	Not Available	**% Volatiles:**	Gradually losses 8% nitrogen
Bulk Density:	58 lbs/ft^{3} (Loose) 67 lbs/ft^{3} (Tamped)	**Evaporation Rate:**	Not Applicable
pH:	8 in 1% solution	**Freezing Point:**	Not Applicable
Viscosity:	Not Applicable	**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:	Welding or hot work on equipment or plant which may have contained fertilizer should not be done without first washing thoroughly to remove all fertilizer.
Materials to Avoid (Incompatibles):	Alkalis, strong acids, copper and its alloys.
Hazardous Decomposition Products:	Ammonia is released upon reaction with strong bases or from thermal decomposition.

Section XI – Toxicological Information

Significant Routes of Exposure:	Eyes, Skin, Respiratory System, Digestive Tract	
Toxicity to Animals:	**Acute Oral Toxicity:**	(Rat) OECD Guideline 425: LD_{50} > 2,000 mg/kg bw
	Acute Inhalation Toxicity:	No data available
	Acute Toxicity: Other Routes:	No data available
	Acute Dermal Toxicity:	(Rat) OECD Guideline 402: LD_{50} > 5,000 mg/kg bw.
	Repeated Dose Toxicity:	(Rat) OECD Guideline 422: NOAEL = 250 mg/kg/day
	Eye & Skin Irritation/Corrosion:	Irritant
Special Remarks on Toxicity to Animals:	Low to very low toxicity based on the standard Federal Insecticide Fungicide and Rodenticide Act (FIFRA) ratings for mammals.	
	Developmental Toxicity/Teratogenicity:	(Rat) OECD Guideline 422: NOAEL = 1,500 mg/kg/day.
	Bacterial Genetic Toxicity In-Vitro: Gene Mutation:	(*S. typhimurium*) Bacterial reverse mutation assay (OECD 471): Negative
	Non-Bacterial Genetic Toxicity In-Vitro: Chromosomal Aberration:	(Chinese hamster ovaries) Chromosome aberration test (OECD 473): Negative
	Toxicity to Reproduction:	(Rat) OECD Guideline 422: NOAEL = 1,500 mg/kg/day.
	Carcinogenicity:	No data available
Other Effects on Humans:	Phosphate compounds such as DAP are generally recognized as safe (GRAS) by FDA for use as a food additive for both human food and ruminant feed according to prescribed conditions.	
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:	**EPA Ecological Toxicity rating :**	Slightly toxic to practically non-toxic to aquatic organisms based on the Federal Insecticide Fungicide and Rodenticide Act (FIFRA) acute toxicity ratings.
	Acute Toxicity to Fish:	(Coho salmon, Chinook salmon, Rainbow trout, Bluegill, Large mouth bass, Tilapia, Fathead minnow) 96-hr: LC_{50} = 90 - 1,875 mg/L
	Chronic Toxicity to Fish:	No data available
	Acute Toxicity to Aquatic Invertebrates:	(Amphipod) 96-hr: LC_{50} = 40-52 mg/L; (Snails, worm) 96-hr: LC_{50} = 1,005 - 2,472 mg/L.
	Chronic Toxicity to Aquatic Invertebrates:	No data available
	Toxicity to Aquatic Plants:	(*Selenastrum capricornutum*) 72-hr: NOEC (stimulation) = 3.57 mg DAP/L; NOEC (toxicity) = 97.1 mg DAP/L.
	Toxicity to Bacteria:	No data available
	Toxicity to Soil Dwelling Organisms:	No data available
	Toxicity to Terrestrial Plants:	No data available
Environmental Fate:	**Stability in Water:**	Stable
	Stability in Soil:	Stable
	Transport and Distribution:	Calculated, fugacity level III: 6.5×10^{-15} to air, 45.3% to water, 54.6% to soil, 0.0755% to sediment. Phosphates, whether water or citrate soluble, are translocated in the soil only over very short periods and are then immobilized.
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:**	The Phosphorus cycle is well understood. Phosphates are converted to calcium or iron/aluminum phosphates or are incorporated with the organic soil matter.
	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. 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:	Not Regulated	Not Regulated
Hazard Class:		
Identification Number:		
Packing Group (Technical Name):		
Labeling / Placarding:		
Authorized Packaging:		
Notes:		
European Transportation:		

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:	No

40 CFR Part 355 - Extremely Hazardous Substances: None

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
Diammonium Phosphate, as P_2O_5	7783-28-0	46		Yes	Yes	No

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 not WHMIS controlled.
Ingredient Disclosure List:	This product does not contain ingredient(s) on this list.
Environmental Protection:	All intentional ingredients are listed on the DSL (Domestic Substance List).

EINECS#: (Diammonium Phosphate) 231-987-8

California: Prop 65: This is not a chemical known to cause cancer, nor is it listed.

Section XVI – Other Information

NFPA Hazard Ratings:	Health: 1	Fire: 0	Reactivity: 0	Special Hazards:
	0 = Insignificant	1 = Slight	2 = Moderate	3 = High 4 = Extreme

COMMENTS:

Section(s) changed since last revision: IX, XV

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