

NFPA Classification	DOT / TDG Pictograms	WHMIS Classification	HMIS		PROTECTIVE CLOTHING
			Health	1	
			Flammability	0	
			Reactivity	0	
			PPE	A	

Section I. Chemical Product and Company Identification

PRODUCT NAME/ TRADE NAME Monoammonium Phosphate, MAP

SYNONYM This Material Safety Data Sheet applies to the following Agrium products:

11-52-0 Ammonium Phosphate Fertilizer

MSDS NUMBER: 16006

CHEMICAL NAME Ammonium phosphate

REVISION NUMBER 1.2

CHEMICAL FAMILY Ammonium salt.

MSDS prepared by CWcber), 200-
the Environment,
Health and Safety
Department on:

CHEMICAL FORMULA NH₄H₂PO₄

MATERIAL USES Agricultural industry: Fertilizer. Manufacture of specialty fertilizers. Active agent in Type A, B, C, dry powder fire extinguishers.

24 HR EMERGENCY TELEPHONE NUMBER:

Transportation: 1-800-792-8311
Medical: 1-888-670-8123

MANUFACTURER

Various

SUPPLIER

Agrium
North American Wholesale
13131 Lake Fraser Drive, S.E.
Calgary, Alberta, Canada, T2J 7E8

Agrium U.S. Inc.
Suite 1700, 4582 South Ulster St.
Denver, Colorado, U.S.A., 80237c7 CWc

Section II. Hazardous Ingredients

NAME	CAS #	Exposure Limits (ACGIH)						% by Weight
		TLV-TWA mg/m ³	TLV-TWA ppm	STEL mg/m ³	STEL ppm	CEIL mg/m ³	CEIL ppm	
No regulated components.								

ACGIH TLV notations:

---- No assigned TLV

(C) - Ceiling - the concentration not to be exceeded at any time

(I) - measured as the Inhalable fraction of the aerosol

(R) - measured as the Respirable fraction of the aerosol

(T) - measured as the Thoracic fraction of the aerosol

TOXICOLOGICAL DATA ON INGREDIENTS

Monoammonium Phosphate TFI Product Testing Program:

Acute oral LD₅₀, rat, OECD 425 protocol: >2,000 mg/kg. MAP is not acutely toxic by the oral route of exposure.

Acute dermal LD₅₀, rat, OECD 402 protocol: >5,000 mg/kg. MAP is not acutely toxic by the dermal route of exposure.

Ecotoxicity:

Acute fish toxicity, 96hr LC₅₀, rainbow trout, OECD 203 protocol: >85.9 mg/L. The acute toxicity of

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MAP to fish is low.

This product and its ingredients are not considered hazardous according to WHMIS (Canada), HSC (United States) and DSCL (Europe).

Section III. Hazards Identification.

POTENTIAL ACUTE HEALTH EFFECTS	This product may irritate eyes and skin upon prolonged or repeated contact due to mechanical action. Over-exposure by inhalation may cause respiratory tract irritation. Ingestion of this substance may produce irritation of the gastro-intestinal tract, characterized by burning and diarrhea.
POTENTIAL CHRONIC HEALTH EFFECTS	CARCINOGENIC EFFECTS: NONE by ACGIH, EPA, IARC, NTP, OSHA. MUTAGENIC EFFECTS: NONE by ACGIH, EPA, IARC, NTP, OSHA. TERATOGENIC EFFECTS: NONE by ACGIH, EPA, IARC, NTP, OSHA. There is no known effect from chronic exposure to this product.

Section IV. First Aid Measures

EYE CONTACT	May cause eye irritation by mechanical abrasion. Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Obtain medical attention if irritation persists.
MINOR SKIN CONTACT	May cause skin irritation due to mechanical abrasion and salt effects. Wash contaminated skin with soap and water. Cover dry or irritated skin with a good quality skin lotion. If irritation persists, seek medical attention.
EXTENSIVE SKIN CONTACT	No additional information.
MINOR INHALATION	Repeated or prolonged inhalation of dust may lead to respiratory irritation. Loosen tight clothing around the individual's neck and waist. Allow the person to rest in a well ventilated area. Obtain medical attention if irritation persists.
SEVERE INHALATION	In emergency situations use proper respiratory protection to evacuate affected individuals to a safe area as soon as possible. Loosen tight clothing around the person's neck and waist. Oxygen may be administered if breathing is difficult. If the person is not breathing, perform artificial respiration. Obtain immediate medical attention.
SLIGHT INGESTION	Do not induce vomiting. Low toxicity. May cause digestive tract irritation, with accompanying nausea, vomiting and diarrhea. If spontaneous vomiting does occur, lower the head so that the vomit will not reenter the mouth and throat. If tolerated, give no more than 1 cup of milk or water to rinse the mouth and throat, dilute the stomach contents, and minimize irritation. No more than 8 ounces (1 cup) in adults and 4 ounces (1/2 cup) in children is recommended to minimize the risk of vomiting. Obtain medical attention.
EXTENSIVE INGESTION	No additional information.

Section V. Fire and Explosion Data

THE PRODUCT IS	Non-flammable.
AUTO-IGNITION TEMPERATURE	Not applicable.
FLASH POINT	Not applicable.
FLAMMABILITY LIMITS	Not applicable.
PRODUCTS OF COMBUSTION	Material will not burn. Undergoes thermal decomposition at elevated temperatures to release toxic and combustible gases: ammonia, nitrogen oxides, and phosphorus oxides.
FIRE HAZARD IN THE PRESENCE OF VARIOUS SUBSTANCES	Not applicable.

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EXPLOSION HAZARD IN THE PRESENCE OF VARIOUS SUBSTANCES	This product is non-explosive.
FIRE FIGHTING MEDIA AND INSTRUCTIONS	Non combustible. Used as a component in Type ABC fire extinguishers. Material will not burn. Melts at temperatures above 190 °C. Under prolonged high temperature conditions, the product may undergo thermal decomposition to release toxic and combustible gases. Use extinguishing media suitable for surrounding materials.
SPECIAL REMARKS ON FIRE HAZARDS	Non combustible. Flammable and toxic gases may form upon prolonged exposure to elevated temperatures (>190 °C) by thermal decomposition (ammonia, phosphorus oxides, nitrogen oxides). A self contained breathing apparatus should be used to avoid inhalation of toxic fumes.
SPECIAL REMARKS ON EXPLOSION HAZARDS	No additional remark.

Section VI. Accidental Release Measures

SMALL SPILL	Use appropriate tools to put the spilled solid in a suitable container for intended use or disposal.
LARGE SPILL	Prevent additional discharge of material, if possible to do so without hazard. Prevent spills from entering sewers, watercourses, wells, etc. Product will promote algae growth which may degrade water quality and taste. Notify downstream water users. Recover and place material in suitable containers for recycle, reuse, or disposal. Ensure disposal complies with government requirements and local regulations.

Section VII. Handling and Storage

PRECAUTIONS	Avoid contact with skin and eyes. Do not breathe dust. Avoid contact with incompatible substances. Keep out of reach of children.
STORAGE	Store in a dry, cool and well ventilated area.

Section VIII. Exposure Controls/Personal Protection

ENGINEERING CONTROLS	Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, use ventilation to keep exposure to airborne contaminants below the exposure limit.
PERSONAL PROTECTION	The selection of personal protective equipment varies, depending upon conditions of use. Wear appropriate respiratory protection for dust/mist when ventilation is inadequate. A filtering facepiece dust mask is recommended for most applications if respiratory protection is needed. Where skin and eye contact may occur as a result of brief periodic exposures, wear long sleeved clothing, coveralls, chemical resistant gloves, and safety glasses with side shields. If the use of respirators is warranted, a respiratory protection program that meets OSHA 29 CFR 1910.134 requirements must be followed.
PERSONAL PROTECTION IN CASE OF LARGE RELEASE	No additional information.
EXPOSURE LIMITS	Fed OSHA PEL: 15 mg/m ³ Total dust, 5 mg/m ³ Respirable fraction, for Particulates Not Otherwise Regulated. Federal, State or Provincial exposure limits may vary by jurisdiction. Consult local authorities for acceptable exposure limits in your area.

Section IX. Physical and Chemical Properties

PHYSICAL STATE AND APPEARANCE	A granular solid.		
MOLECULAR WEIGHT	115.02	COLOR	Light green, brown or grey, depending on source of supply.
pH (10% SOLN/WATER)	5	ODOR	Odorless.
BOILING POINT	Decomposes.	ODOR THRESHOLD	Not applicable
MELTING POINT	190°C	TASTE	Acid. Saline.
CRITICAL TEMPERATURE	Not available.	VOLATILITY	Not applicable.
SPECIFIC GRAVITY g/cc	Not available	SOLUBILITY	Easily soluble in hot water. Slightly soluble in cold water.
BULK DENSITY kg/m ³ ; lbs/ft ³	Variable depending supply source.	DISPERSION PROPERTIES	See solubility in water.
VAPOR PRESSURE	Not applicable.	WATER/OIL DIST. COEFF.	Not available.
VAPOR DENSITY	Not applicable.		

Section X. Stability and Reactivity Data

STABILITY	The product is stable.
INSTABILITY TEMPERATURE	Not available.
CONDITIONS OF INSTABILITY	No additional remark.
INCOMPATIBILITY WITH VARIOUS SUBSTANCES	Very slightly reactive with oxidizing agents, reducing agents, metals, alkalis, moisture. Non-reactive with combustible materials, organic materials, acids.
CORROSIVITY	Highly corrosive to steel and aluminum. Slightly corrosive to zinc and copper. Non-corrosive to stainless steel (304 or 316).
SPECIAL REMARKS ON REACTIVITY	Avoid contact with moisture. Hydrolysis will slowly produce acids corrosive to metals.
SPECIAL REMARKS ON CORROSIVITY	Incompatible with copper alloys. Corrosive to brass. Corrosive to ferrous metals and alloys. Contact your sales representative or a metallurgical specialist to ensure compatibility with your equipment.

Section XI. Toxicological Information

SIGNIFICANT ROUTES OF EXPOSURE	Ingestion. Inhalation.
TOXICITY TO ANIMALS	See Section II. Ammonium phosphate is approved as a feed additive in controlled quantities in animal husbandry.
SPECIAL REMARKS ON TOXICITY TO ANIMALS	Very low toxicity for humans or animals. The product itself and its products of degradation are not toxic under normal conditions of use. Will release ammonium ions. Ammonia is a toxic hazard to fish. May be harmful to livestock and wildlife if ingested in uncontrolled quantities. Clean up all spilled material, especially where bulk fertilizer loading of equipment occurs to prevent uncontrolled animal exposure.
OTHER EFFECTS ON HUMANS	Our data base contains no additional remark on the toxicity of this product
SPECIAL REMARKS ON CHRONIC EFFECTS ON HUMANS	No additional remark.

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SPECIAL REMARKS ON OTHER EFFECTS ON HUMANS	No additional remark.
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Section XII. Ecological Information

ECOTOXICITY	<p>Non-persistent. Non-cumulative when applied using normal agricultural practises. The product itself and its products of degradation are not harmful under normal conditions of careful and responsible use.</p> <p>Aquatic/Marine Toxicity: Will release ammonium ions. Ammonia is a toxic hazard to fish. Will release phosphate. Phosphates will result in algae growth which may increase turbidity and deplete oxygen resulting in a hazard to fish or other marine organisms. Will disperse with the current. Release to watercourses may cause effects down stream from the point of release. Avoid spills or release to watercourses. U.S. D.O.T.: This material NOT listed as a Marine pollutant.</p>
BOD and COD	Not available.
PRODUCTS OF DEGRADATION	Nitrogen oxides (NO,NO ₂ ...). Phosphates. Inorganic mineral salts and oxides.
TOXICITY OF THE PRODUCTS OF DEGRADATION	The product itself and its products of degradation are not harmful under normal conditions of use. Avoid spills or releases to watercourses.
SPECIAL REMARKS ON THE PRODUCTS OF DEGRADATION	Product will promote algae growth which may degrade water quality and taste. Notify downstream water users. Will slowly dissolve and disperse in water. Reclaiming material may not be viable.

Section XIII. Disposal Considerations

WASTE DISPOSAL OR RECYCLING	Recover and place material in a suitable container for intended use or disposal. Ensure disposal complies with government requirements and local regulations.
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Section XIV. Transport Information

DOT / TDG CLASSIFICATION	Not controlled under TDG (Canada) or D.O.T. (U.S.A.)
PIN and Shipping Name	Not applicable.
SPECIAL PROVISIONS FOR TRANSPORT	Not applicable.
DOT (U.S.A) (Pictograms)	

**Section XV. Other Regulatory Information and Pictograms**

OTHER REGULATIONS	<p>CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA): This product is on the Domestic Substances List (DSL), and is acceptable for use under the provisions of CEPA.</p> <p>TSCA (Toxic Substance Control Act): This product is listed on the TSCA Inventory.</p> <p>CERCLA/SUPERFUND, 40 CFR 117,302: This product contains no Reportable Quantity (RQ) Substances.</p> <p>This product is not considered as a priority pollutant as regulated under the Clean Water Act.</p> <p>FDA Requirements:</p> <ol style="list-style-type: none"> 1. Substance added directly to human food affirmed as generally recognized as safe (GRAS). [21 CFR 184.1141a (4/1/91)] 2. Ammonium phosphate (mono-, and dibasic) used as a general purpose food additive in animal drugs, feeds, and related products is generally recognized as safe when used in accordance with good manufacturing or feeding practice. [21 CFR 582.1141 (4/1/90)] 3. Ammonium phosphate (mono-, and dibasic) used as a general purpose food additive in animal
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drugs, feeds, and related products is generally recognized as safe when used in accordance with good manufacturing or feeding practice. [21 CFR 582.1141 (4/1/90)]

This product contains the following chemical subject to the reporting requirements of SARA Section 313 and 40 CFR 372:

Aqueous ammonia from water dissociable ammonium ions; 10% of total aqueous ammonia is reportable under this listing), CAS# 7722-76-1: 14.8 wt% , see EPA doc 745-R-95-012)

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and is not subject to control under WHMIS (Canada), or the Hazcom Standard (US).

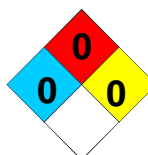
OTHER CLASSIFICATIONS

HCS (U.S.A.)	Not controlled under the HCS (United States).
DSCL (EEC)	Not controlled under DSCL (Europe).

National Fire Protection Association (U.S.A.)

Hazards presented under acute emergency conditions only:

Health



Fire Hazard

Reactivity

Specific Hazard

TDG (Pictograms - Canada)



DSCL (Europe) (Pictograms)



ADR (Europe) (Pictograms)



Section XVI. Other Information

REFERENCES

- Transportation of Dangerous Goods Act and Clear Language Regulations, current revision.
- Canada Gazette Part II, Vol. 122, No. 2 Registration SOR/88-64 31 December, 1987 Hazardous Products Act "Ingredient Disclosure List".
- Domestic Substances List, Canadian Environmental Protection Act.
- 29 CFR Part 1910
- 33 CFR Parts 151, 153, 154, 156
- 40 CFR Parts 1-799
- 46 CFR Part 153
- 49 CFR Parts 1-199
- American Conference of Governmental Industrial Hygienists, Threshold Limit Values for Chemical Substances, 2009.
- NFPA 704, National Fire Codes Online, National Fire Protection Association, current edition at time of MSDS preparation.
- Corrosion Data Survey, Sixth Edition, 1985, National Association of Corrosion Engineers
- ERG2008 Emergency Response Guidebook
- CHRIS Hazardous Chemical Data: U.S. Department of Transportation, U.S. Coast Guard, Washington, D.C.;
- HSDB: Hazardous Substances Data Bank. National Library of Medicine, Bethesda, Maryland;
- IRIS: Integrated Risk Information System. U.S. Environmental Protection Agency, Washington, D.C.
- NIOSH: Pocket Guide to Chemical Hazards. National Institute for Occupational Safety and Health, Cincinnati, Ohio;
- OHM/TADS: Oil and Hazardous Materials Technical Assistance Data System. U.S. Environmental Protection Agency, Washington, D.C.;

-RTECS®: Registry of Toxic Effects of Chemical Substances. National Institute for Occupational Safety and Health, Cincinnati, Ohio; and
-The Fertilizer Institute Product Testing Program Results, March 2003

**OTHER SPECIAL
CONSIDERATIONS**

3 Year MSDS update - references revised.

**FOR FURTHER SAFETY, HEALTH, OR
ENVIRONMENTAL INFORMATION ON
THIS PRODUCT, CONTACT**

**AGRIUM
Wholesale Environment, Health and Safety
Telephone (780) 998-6906 or Fax (780) 998-6677**

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