

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** Urea Ammonium Phosphate Dry Blends

**SYNONYM** This MSDS applies to all dry blends of Urea and Ammonium Phosphate fertilizers.

**MSDS NUMBER:** 14286

**CHEMICAL NAME** Not applicable; a mixture.

**REVISION NUMBER** 4.8

**CHEMICAL FAMILY** Aliphatic amide and ammonium salt.

**MSDS prepared by** September 25, 2006  
the Environment,  
Health and Safety  
Department on:

**CHEMICAL FORMULA** Not applicable.

**MATERIAL USES** Agricultural industry: Fertilizer.

### 24 HR EMERGENCY TELEPHONE NUMBER:

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

#### MANUFACTURER

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., 80237

#### 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., 80237

## Section II. Hazardous Ingredients

NAME	CAS #	Exposure Limits (ACGIH)						% by Weight
		TLV-TWA mg/m <sup>3</sup>	TLV-TWA ppm	STEL mg/m <sup>3</sup>	STEL ppm	CEIL mg/m <sup>3</sup>	CEIL ppm	
Monoammonium phosphate	7722-76-1	---						0-40
Diammonium phosphate	7783-28-0	---						0-40
Urea	57-13-6	---						40-70

#### 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 LD<sub>50</sub>, rat, OECD 425 protocol: >2,000 mg/kg. MAP is not acutely toxic by the oral route of exposure.

Acute dermal LD<sub>50</sub>, rat, OECD 402 protocol: >5,000 mg/kg. MAP is not acutely toxic by the dermal route of exposure.

##### Ecotoxicity:

Acute fish toxicity, 96hr LC<sub>50</sub>, rainbow trout, OECD 203 protocol: >85.9 mg/L. The acute toxicity of MAP to fish is low.

##### Ammonium phosphate dibasic

TFI Product Testing Results, OECD 402 acute dermal toxicity: LD<sub>50</sub>: > 5,000 mg/kg rat, not acutely

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toxic  
 TFI Product Testing Results, OECD 425 acute oral toxicity: LD<sub>50</sub>: > 2,000 mg/kg rat, not acutely toxic  
 TFI Product Testing Results, OECD 201 green algae acute toxicity testing, no toxicity observed at up to 97.1 mg/L (highest conc tested); growth stimulated at 6.4 mg/L and higher.

Ecotoxicity:  
 Acute fish toxicity, 96hr LC<sub>50</sub>, rainbow trout, OECD 203 protocol: >85.9 mg/L. The acute toxicity of MAP to fish is low.

**TFI Product Testing Program Results - Urea 46-0-0 :^**  
 Acute oral toxicity: 14,300 mg/kg rat; 11,500 mg/kg mouse; 510 mg/kg cattle  
 Chronic oral toxicity, NOAEL: 6,750 mg/kg mouse; 2,250 mg/kg rat

Ecotoxicity:  
 Acute toxicity to fish, Barillius barna, LC<sub>50</sub>, 96hr: >9,100 mg/L  
 Acute toxicity to invertibrates, Daphnia, EC<sub>50</sub> (24kr) >10,000 mg/L  
 Acute toxicity to birds, pigeon, LDLo = 16,000 mg/kg subcutaneous  
 Toxicity to algae, Scenedesmus quadricauda, cell multiplication inhibition, TT(192 hr) > 10,000 mg/L

**Section III. Hazards Identification.**

**POTENTIAL ACUTE HEALTH EFFECTS**

This product may irritate eyes and skin upon contact due to mechanical action. Not considered to be toxic for humans. However, in keeping with good industrial hygiene practises, exposure to any chemical should be kept to a minimum.

**POTENTIAL CHRONIC HEALTH EFFECTS**

**CARCINOGENIC EFFECTS:** NONE by ACGIH, EPA, IARC, OSHA.  
**MUTAGENIC EFFECTS:** NONE by ACGIH, EPA, IARC, OSHA.  
**TERATOGENIC EFFECTS:** NONE by ACGIH, EPA, IARC, OSHA.  
 The substance is not toxic to blood, kidneys, lungs, the nervous system, the reproductive system, liver, mucous membranes. There is no known effect from chronic exposure to this product. Urea is approved as a food and cosmetic additive, is an ingredient in clinical preparations, and is a normal human metabolite found in urine. Ammonium phosphate is generally recognized as safe (GRAS).

**Section IV. First Aid Measures**

**EYE CONTACT**

May cause eye irritation due to mechanical action. 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. 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**

No additional information.

**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 for adults or 1/2 cup for children to rinse the mouth and throat, dilute the stomach contents, and minimize irritation. Obtain medical attention if irritation persists.

**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 produce solid cyanuric acid and release toxic and combustible gases (ammonia, carbon dioxide, and oxides of nitrogen).
FIRE HAZARD IN THE PRESENCE OF VARIOUS SUBSTANCES	Not applicable.
EXPLOSION HAZARD IN THE PRESENCE OF VARIOUS SUBSTANCES	May react with strong reducing agents. Non-explosive in presence of open flames and sparks, shocks, heat, oxidizing materials, combustible materials, organic materials, metals, acids, alkalis, or moisture.
FIRE FIGHTING MEDIA AND INSTRUCTIONS	Non-flammable. Material will not burn. Undergoes thermal decomposition at elevated temperatures to release toxic and combustible gases (ammonia, carbon dioxide, oxides of nitrogen, and oxides of phosphorus). Fire fighters should wear self-contained breathing apparatus (SCBA) and full turnout gear. Use extinguishing media suitable for surrounding materials.
SPECIAL REMARKS ON FIRE HAZARDS	Flammable/toxic gases will form at elevated temperatures by thermal decomposition. When exposed to heat, ammonia is released.
SPECIAL REMARKS ON EXPLOSION HAZARDS	Explosive when mixed with hypochlorites. Forms nitrogen trichloride which explodes spontaneously in air.

**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	In the event of a 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.

**Section VII. Handling and Storage**

PRECAUTIONS	If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit. Keep out of reach of children.
STORAGE	Store in a dry, cool and well ventilated area. Keep away from incompatible materials such as reducing agents. Do not blend or store in contact with ammonium nitrate. Dry urea and dry ammonium nitrate will react together to produce a slurry.

**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.
PERSONAL PROTECTION IN CASE OF LARGE RELEASE	No additional information.

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<b>EXPOSURE LIMITS</b>	Alberta TWA: 10 mg/m <sup>3</sup> Inhalable, 3 mg/m <sup>3</sup> Respirable, for Particulate Not Otherwise Regulated.
	Fed OSHA PEL: 15 mg/m <sup>3</sup> Total dust, 5 mg/m <sup>3</sup> 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**

<b>PHYSICAL STATE AND APPEARANCE</b>	Solid. (A granular solid.)		
<b>MOLECULAR WEIGHT</b>	Not applicable.	<b>COLOR</b>	White and brown, green or grey granules.
<b>pH (10% SOLN/WATER)</b>	~8	<b>ODOR</b>	Odorless to slightly ammoniacal.
<b>BOILING POINT</b>	Decomposes.	<b>ODOR THRESHOLD</b>	17 PPM recognition threshold for ammonia
<b>MELTING POINT</b>	Not applicable	<b>TASTE</b>	Saline.
<b>CRITICAL TEMPERATURE</b>	Not applicable.	<b>VOLATILITY</b>	Not available.
<b>SPECIFIC GRAVITY g/cc</b>	Not available.	<b>SOLUBILITY</b>	Easily soluble in hot water. Soluble in cold water.
<b>BULK DENSITY kg/m<sup>3</sup> ; lbs/ft<sup>3</sup></b>	Variable depending on formulation and settling.	<b>DISPERSION PROPERTIES</b>	See solubility in water.
<b>VAPOR PRESSURE</b>	Not available.	<b>WATER/OIL DIST. COEFF.</b>	Soluble in water.
<b>VAPOR DENSITY</b>	Not available.		

**Section X. Stability and Reactivity Data**

<b>STABILITY</b>	The product is stable.
<b>INSTABILITY TEMPERATURE</b>	Not available.
<b>CONDITIONS OF INSTABILITY</b>	No additional remark.
<b>INCOMPATABILITY WITH VARIOUS SUBSTANCES</b>	Slightly reactive to reactive with reducing agents, alkalis. Very slightly to slightly reactive with oxidizing agents, acids, moisture. Non-reactive with combustible materials, organic materials, metals.
<b>CORROSIVITY</b>	A blend of mineral salts. Highly corrosive to mild steel. Slightly corrosive to aluminum, zinc, or copper. Non-corrosive to glass, 304 or 316 stainless steel.
<b>SPECIAL REMARKS ON REACTIVITY</b>	Absorbs moisture from the air. Hygroscopic; keep container tightly closed. Avoid contact with moisture. Hydrolysis will slowly produce acids corrosive to metals.
<b>SPECIAL REMARKS ON CORROSIVITY</b>	Avoid contact with moisture. Hydrolysis will produce acids which may slowly corrode metals. Contact your sales representative or a metallurgical specialist to ensure compatability with your equipment.

**Section XI. Toxicological Information**

<b>SIGNIFICANT ROUTES OF EXPOSURE</b>	Ingestion. Inhalation.
<b>TOXICITY TO ANIMALS</b>	See Section II.
<b>SPECIAL REMARKS ON TOXICITY TO ANIMALS</b>	Low toxicity for humans or animals. Urea ingestion may be toxic to mammals and birds at body burdens of several thousands of mg/kg. Urea is used in small quantities as a feed supplement for livestock.
<b>OTHER EFFECTS ON HUMANS</b>	Not considered to be dangerous for humans according to our data base.
<b>SPECIAL REMARKS ON CHRONIC EFFECTS ON HUMANS</b>	No effects.
<b>SPECIAL REMARKS ON OTHER EFFECTS ON HUMANS</b>	May cause irritation of the mucous membranes and upper respiratory tract.


**Section XII. Ecological Information**

<b>ECOTOXICITY</b>	Will slowly release ammonia and degrade to nitrate. Ammonia is a toxic hazard to fish. However, ammonia release is slow making urea much less toxic than ammonium salts. Aquatic toxicity tests indicate 24 Hr exposure at 16,000 mg/L of urea did not kill Creek Chubs. Urea ingestion may be toxic to mammals and birds at body burdens of several thousands of mg/kg. Urea is used in small quantities as a feed supplement for livestock. Non-persistent. Non-cumulative when applied using normal agricultural practices. The product itself and its products of degradation are not harmful under normal conditions of careful and responsible use. U.S. D.O.T.: This material is NOT listed as a Marine pollutant.
<b>BOD and COD</b>	Not available.
<b>PRODUCTS OF DEGRADATION</b>	Ammonia, carbon dioxide and water.
<b>TOXICITY OF THE PRODUCTS OF DEGRADATION</b>	The product itself and its products of degradation are not harmful under normal conditions of use. Avoid spills or releases to watercourses.
<b>SPECIAL REMARKS ON THE PRODUCTS OF DEGRADATION</b>	Urea and ammonium phosphate will promote algae growth which may degrade water quality and taste. Notify downstream water users. Will dissolve and disperse in water. Reclaiming material may not be viable.

**Section XIII. Disposal Considerations**

<b>WASTE DISPOSAL OR RECYCLING</b>	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**

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

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

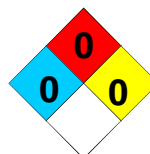
**OTHER REGULATIONS** CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA): This product is on the Domestic Substances List (DSL), and acceptable for use under the provisions of CEPA.  
 CERCLA/SUPERFUND, 40 CFR 117,302: This product contains no Reportable Quantity (RQ) Substances.  
 EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances. This product is not considered as a priority pollutant as regulated under the Clean Water Act.  
 TSCA (Toxic Substance Control Act): This product is listed on the TSCA Inventory.  
 This material contains the following chemicals subject to the reporting requirements of SARA 313 and 40 CFR 372:  
 Aqueous ammonia from water dissociable ammonium ions, 10% of which is reportable under this listing, as CAS#7783-20-2 and as CAS#7722-76-1. Refer to the specific product analysis for your product to determine your reporting requirements under this regulation.  
 This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by the Controlled Products Regulations.

<b>OTHER CLASSIFICATIONS</b>	<b>HCS (U.S.A.)</b>	Not controlled under the HCS (United States).
	<b>DSCL (EEC)</b>	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, 2006.
- 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
- TOMES® System: Heitland G & Hurlbut KM (Eds) (electronic version): MICROMEDEX, Greenwood Village, Colorado, USA. Available at: <http://csi.micromedex.com> (2006). The TOMES® System includes MEDITEXT® Medical Management; HAZARTEXT® Hazard Management; INFOTEXT® Documents; ERG2000 Emergency Response Guidebook

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Documents; REPROTEXT®: Heitland G & Hurlbut KM (Eds); CHRIS Hazardous Chemical Data: U.S. Department of Transportation, U.S. Coast Guard, Washington, D.C. (2006); HSDB: Hazardous Substances Data Bank. National Library of Medicine, Bethesda, Maryland (2006); IRIS: Integrated Risk Information System. U.S. Environmental Protection Agency, Washington, D.C. (2006); NIOSH: Pocket Guide to Chemical Hazards. National Institute for Occupational Safety and Health, Cincinnati, Ohio (2006); OHM/TADS: Oil and Hazardous Materials Technical Assistance Data System. U.S. Environmental Protection Agency, Washington, D.C. (2006); REPROTOX®: Scialli A.R. Georgetown University Medical Center and Reproductive Toxicology Center, Columbia Hospital for Women Medical Center, Washington, D.C. (2006); RTECS®: Registry of Toxic Effects of Chemical Substances. National Institute for Occupational Safety and Health, Cincinnati, Ohio (2006); and SHEPARDS: Shepard T.H.: Shepard's Catalog of Teratogenic Agents (2006).  
-The Fertilizer Institute Product Testing Program Results, March 2003  
-Alberta Workplace Health and Safety, Occupational Health and Safety Code

**OTHER SPECIAL  
CONSIDERATIONS**

HMIS information added in this revision.

**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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