

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 Sulfate Blends

SYNONYM This MSDS applies to all formulations of dry blended fertilizer made with urea, ammonium phosphate (DAP or MAP), and ammonium sulfate.

MSDS NUMBER: 14005

CHEMICAL NAME Not applicable.

REVISION NUMBER 4.2

CHEMICAL FAMILY Aliphatic amide and ammonium salt.

MSDS prepared by September 26, 2006
the Environment,
Health and Safety
Department on:

CHEMICAL FORMULA Not applicable.

24 HR EMERGENCY TELEPHONE NUMBER:

MATERIAL USES Agricultural industry: Fertilizer.

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

SUPPLIER

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

Agrium U.S. Inc.
Suite 1400, 4582 South Ulster St.
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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

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, LC₅₀, 96hr: >9,100 mg/L

Acute toxicity to invertebrates, Daphnia, EC₅₀ (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

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

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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 MAP to fish is low.

Ammonium phosphate dibasic

TFI Product Testing Results, OECD 402 acute dermal toxicity: LD₅₀: > 5,000 mg/kg rat, not acutely toxic

TFI Product Testing Results, OECD 425 acute oral toxicity: LD₅₀: > 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 LC₅₀, rainbow trout, OECD 203 protocol: >85.9 mg/L. The acute toxicity of MAP to fish is low.

Ammonium Sulfate TFI Product Testing Program Results:

Acute oral LD₅₀, rat: >2,000-4,250 mg/kg

Acute oral LD₅₀, mouse: 640 mg/kg

Acute dermal LD₅₀: >2,000 mg/kg (rat, mouse)

Ecotoxicity:
 Acute toxicity to fish, Coho salmon, rainbow trout, largemouth bass, bluegill, fathead minnow, 24-96 hr LC₅₀: >90->1500 mg/L

Acute toxicity to aquatic invertebrates, Daphnia magna, 50-96 hr LC₅₀: >433 mg/L

Amphipod, 96 hrs, LC₅₀=40-62 mg/L

Snails, 48-96 hrs, LC₅₀=>100-700 mg/L

Toxicity to aquatic plants, Chlorella vulgaris, 21 days, NOEC=250 mg N/L

Chronic toxicity to fish, Rainbow trout, 12 & 35 days, LC₅₀: 0.26-0.68 mg unionized NH₃/L

Pink salmon, 21, 40, & 61 days, NOEC=1.2mg unionized NH₃/L

Channel catfish, 6 months, LOEC=100-500 mg/L

Section III. Hazards Identification.

POTENTIAL ACUTE HEALTH EFFECTS

This product may irritate eyes and skin upon contact. 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.

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

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 drying (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. Allow the victim 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, sulphur, and phosphorus). If fumes or gases are suspected to be present, fire fighters should wear a self contained breathing apparatus. 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	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 and 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 give 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	<p>The selection of personal protective equipment varies, depending upon conditions of use. Under well controlled conditions where contact with the substance is limited and exposures are below the occupational exposure limit, normal work clothing may suffice. Where skin and eye contact may occur as a result of brief periodic exposures, wear long sleeved clothing or coveralls and safety glasses with side shields.</p> <p>Wear appropriate respirator when ventilation is inadequate. A filtering facepiece dust mask is adequate for most applications. A NIOSH approved full facepiece or half mask dust respirator with N-100 or P-100 filters should be used under conditions where airborne concentrations may exceed occupational exposure limits. A respiratory protection program that meets OSHA 29 CFR 1910.134 requirements must be followed whenever workplace conditions warrant a respirator's use.</p>
PERSONAL PROTECTION IN CASE OF LARGE RELEASE	No additional recommendations.
EXPOSURE LIMITS	<p>OSHA PEL: 15 mg/m³ as total dust and 5 mg/m³ for the respirable fraction for Particulates Not Otherwise Regulated (nuisance particulates). 29 CFR 1910.1000 Table Z-1.</p> <p>Federal, State or Provincial exposure limits may vary by jurisdiction. Consult local authorities for acceptable exposure limits in your area.</p>

Section IX. Physical and Chemical Properties

PHYSICAL STATE AND APPEARANCE	Solid granules. (A white and brown, grey or green granular solid mix.)		
MOLECULAR WEIGHT	Not applicable.	COLOR	White and brown, grey or green.
pH (10% SOLN/WATER)	8	ODOR	Odorless to slightly ammoniacal.
BOILING POINT	Decomposes.	ODOR THRESHOLD	17 PPM odor recognition threshold as ammonia.
MELTING POINT	Not applicable.	TASTE	Saline.
CRITICAL TEMPERATURE	Not applicable.	VOLATILITY	Not available.
SPECIFIC GRAVITY g/cc	Not available.	SOLUBILITY	Easily soluble in hot water. Soluble in cold water.
BULK DENSITY kg/m³ ; lbs/ft³	Variable depending on formulation and settling.	DISPERSION PROPERTIES	See solubility in water.
VAPOR PRESSURE	Not available.	WATER/OIL DIST. COEFF.	Soluble in water.
VAPOR DENSITY	Not available.		

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	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.
CORROSIVITY	Slightly corrosive to mild steel, aluminum, zinc, or copper. Non-corrosive to 304 or 316 stainless steel.

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SPECIAL REMARKS ON REACTIVITY	Absorbs moisture from the air. Hygroscopic; keep container tightly closed.
SPECIAL REMARKS ON CORROSIVITY	Avoid contact with moisture. Slow hydrolysis will produce corrosive acids. 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.
SPECIAL REMARKS ON TOXICITY TO ANIMALS	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.
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 effects.
SPECIAL REMARKS ON OTHER EFFECTS ON HUMANS	May cause irritation of the mucous membranes and upper respiratory tract.


Section XII. Ecological Information

ECOTOXICITY	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.
BOD and COD	Not available.
PRODUCTS OF DEGRADATION	Ammonia, carbon dioxide and water.
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	Urea, ammonium sulfate, and ammonium phosphate will promote algae growth and may degrade water quality and taste. Notify downstream water users. Will dissolve and disperse in water. Reclaiming material may not be viable.

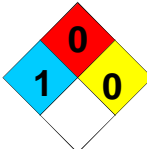



Section XIII. Disposal Considerations

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

DOT / TDG CLASSIFICATION	Not controlled under DoT (U.S.) or TDG (Canada).
PIN and Shipping Name	Not applicable.
SPECIAL PROVISIONS FOR TRANSPORT	No additional remark.
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. TSCA (Toxic Substance Control Act): This product is listed on the TSCA Inventory. CALIFORNIA PROPOSITION 65: This product contains no chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm. 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 DAP CAS#7783-28-0, and/or MAP CAS#7722-76-1 and as AS CAS# 7783-20-2. Refer to EPA doc 745-R-00-005 and 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 is not subject to control under WHMIS (Canada), or the Hazcom Standard (US).</p>		
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:		<p>Fire Hazard</p> <p>Reactivity</p> <p>Specific Hazard</p>
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; HAZARDTEXT® Hazard Management; INFOTEXT® Documents; ERG2000 Emergency Response Guidebook 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

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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