

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

## Section I. Chemical Product and Company Identification

**PRODUCT NAME/ TRADE NAME** Ultra Yield Magnesium Oxy-Sulfate 36%

**SYNONYM** Not available

**MSDS NUMBER:** 14246

**CHEMICAL NAME** Not applicable; a complex mixture of essential plant micronutrients.

**REVISION NUMBER** 4.7

**CHEMICAL FAMILY** Inorganic metal salt

**MSDS prepared by** February 14, 2007  
the Environment,  
Health and Safety  
Department on:

**CHEMICAL FORMULA** Not available.

**MATERIAL USES** Agricultural use: Fertilizer ingredient.

### 24 HR EMERGENCY TELEPHONE NUMBER:

**Transportation Emergency:** 1 (800) 792-8311  
**Medical Emergency:** 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  
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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	
Magnesium oxide	1309-48-4	10						10-30

#### 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

Magnesium oxide:  
TCLo: acute: 400mg/m<sup>3</sup>, human, inhalation  
Magnesium sulfate:  
LDLo: acute: 5000 mg/kg mouse, oral

**Section III. Hazards Identification.**

<b>POTENTIAL ACUTE HEALTH EFFECTS</b>	May cause eye and skin irritation. Ingestion of this substance may produce irritation of the gastro-intestinal tract, characterized by burning and diarrhea. Severe over-exposure may result in central nervous system effects, stupor, and low blood pressure.
<b>POTENTIAL CHRONIC HEALTH EFFECTS</b>	There is no known effect from chronic exposure to this product. Not considered to be a human carcinogen, teratogen or mutagen by ACGIH, IARC, or NTP.

**Section IV. First Aid Measures**

<b>EYE CONTACT</b>	May cause eye irritation. Immediately flush eyes with water for at least 15 minutes. Use warm water if available. Get medical attention if irritation persists.
<b>MINOR SKIN CONTACT</b>	May cause skin irritation. Wash contaminated skin with soap and water. Cover irritated skin with a good quality skin cream. If irritation persists, obtain medical attention. Wash contaminated clothing before reusing.
<b>EXTENSIVE SKIN CONTACT</b>	No additional information.
<b>MINOR INHALATION</b>	Allow to rest in a well ventilated area. Seek medical attention, if not feeling well.
<b>SEVERE INHALATION</b>	Inhalation of dust will produce irritation to gastro-intestinal or respiratory tract, characterized by burning, sneezing and coughing. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
<b>SLIGHT INGESTION</b>	Do not induce vomiting. 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.
<b>EXTENSIVE INGESTION</b>	No additional information.

**Section V. Fire and Explosion Data**

<b>THE PRODUCT IS</b>	Non-flammable.
<b>AUTO-IGNITION TEMPERATURE</b>	Not applicable.
<b>FLASH POINT</b>	Not applicable.
<b>FLAMMABILITY LIMITS</b>	Not applicable.
<b>PRODUCTS OF COMBUSTION</b>	Not applicable. Thermal decomposition may result in the formation of acrid gases. Sulfur oxides (SO <sub>2</sub> , SO <sub>3</sub> ...).
<b>FIRE HAZARD IN THE PRESENCE OF VARIOUS SUBSTANCES</b>	Not applicable.
<b>EXPLOSION HAZARD IN THE PRESENCE OF VARIOUS SUBSTANCES</b>	No specific information is available in our data base regarding the product's risks of explosion in the presence of various materials or conditions. Low hazard for usual industrial or commercial handling.
<b>FIRE FIGHTING MEDIA AND INSTRUCTIONS</b>	Non-flammable.
<b>SPECIAL REMARKS ON FIRE HAZARDS</b>	No additional remark.
<b>SPECIAL REMARKS ON EXPLOSION HAZARDS</b>	No additional remark.

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**Section VI. Accidental Release Measures**

<b>SMALL SPILL</b>	Use appropriate tools to put spilled solid in a suitable container for intended use or disposal.
<b>LARGE SPILL</b>	Keep spills from entering sewers, wells, watercourses, etc. Recover and place in suitable containers for recycle, reuse, or disposal. Ensure disposal complies with local regulations.

**Section VII. Handling and Storage**

<b>PRECAUTIONS</b>	Do not ingest. Keep container tightly closed and dry. Keep out of reach of children. Keep away from food, drink and animal feed. Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits.
<b>STORAGE</b>	Contains moisture sensitive material; store in a dry place. Product will absorb moisture and will cake when dried. Keep container tightly closed and dry.

**Section VIII. Exposure Controls/Personal Protection**

<b>ENGINEERING CONTROLS</b>	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.
<b>PERSONAL PROTECTION</b>	The selection of personal protective equipment varies, depending upon conditions of use. Under well controlled conditions where no direct contact with the substance exists and exposures are below the occupational exposure limit, normal work clothing may suffice. However, protective clothing and appropriate respiratory protection must be available in the area in the event of emergency.
<b>PERSONAL PROTECTION IN CASE OF LARGE RELEASE</b>	Where skin and eye contact may occur as a result of prolonged or repeated exposures, wear long sleeved clothing, coveralls, leather gloves, and safety glasses with side shields. Use a NIOSH approved dust respirator if concentrations may exceed the exposure limit. For U.S. work sites where respiratory protection is required, ensure that a respiratory protection meeting 29 CFR 1910.134 is in place.
<b>EXPOSURE LIMITS</b>	<p>Particulates:            ACGIH TLV-TWA: 10 mg/m<sup>3</sup> Inhalable, 3 mg/m<sup>3</sup> Respirable, for Particles Not Otherwise Specified (Insoluble or Poorly Soluble).            Fed OSHA PEL: 15 mg/m<sup>3</sup> Total dust, 5 mg/m<sup>3</sup> Respirable fraction, for Particulates Not Otherwise Regulated.</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**

<b>PHYSICAL STATE AND APPEARANCE</b>	Granular solid.		
<b>MOLECULAR WEIGHT</b>	Not available.	<b>COLOR</b>	Light brown to grey.
<b>pH (10% SOLN/WATER)</b>	8.5 - 9.5	<b>ODOR</b>	Odorless.
<b>BOILING POINT</b>	Decomposes.	<b>ODOR THRESHOLD</b>	Not available.
<b>MELTING POINT</b>	~1123°C (2053.4°F)	<b>TASTE</b>	Not available.
<b>CRITICAL TEMPERATURE</b>	Not applicable	<b>VOLATILITY</b>	Non-volatile.
<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>	Not available	<b>DISPERSION PROPERTIES</b>	See solubility in water.
<b>VAPOR PRESSURE</b>	Not applicable	<b>WATER/OIL DIST. COEFF.</b>	Not available.
<b>VAPOR DENSITY</b>	Not applicable.		

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**Section X. Stability and Reactivity Data**

STABILITY	The product is stable.
INSTABILITY TEMPERATURE	Not available.
CONDITIONS OF INSTABILITY	No additional remark.
INCOMPATABILITY WITH VARIOUS SUBSTANCES	Highly reactive with oxidizing agents.
CORROSIVITY	No specific information is available in our data base regarding the corrosivity of this product with various materials.
SPECIAL REMARKS ON REACTIVITY	Avoid strong oxidizing agents
SPECIAL REMARKS ON CORROSIVITY	Contact your sales representative or a metallurgical specialist to ensure compatability with system equipment.

**Section XI. Toxicological Information**

SIGNIFICANT ROUTES OF EXPOSURE	Ingestion. Inhalation.
TOXICITY TO ANIMALS	See Section II.
SPECIAL REMARKS ON TOXICITY TO ANIMALS	May be harmful to livestock and wildlife if ingested. Clean up all spilled material, especially where bulk fertilizer loading of equipment occurs to prevent animal exposure.
OTHER EFFECTS ON HUMANS	No additional information.
SPECIAL REMARKS ON CHRONIC EFFECTS ON HUMANS	No additional remark.
SPECIAL REMARKS ON OTHER EFFECTS ON HUMANS	No additional remark.

**Section XII. Ecological Information**

ECOTOXICITY	No additional information.
BOD and COD	Not available.
PRODUCTS OF DEGRADATION	Some metallic oxides.
TOXICITY OF THE PRODUCTS OF DEGRADATION	The product itself and its products of degradation are not toxic.
SPECIAL REMARKS ON THE PRODUCTS OF DEGRADATION	Oxides of sulfur

**Section XIII. Disposal Considerations****WASTE DISPOSAL OR RECYCLING**

Recover and place material in a suitable container for intended use or disposal. Dispose of in accordance with all applicable federal, provincial, or state and local regulations.

**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**

No additional remark.

**DOT (U.S.A) (Pictograms)****Section XV. Other Regulatory Information and Pictograms****OTHER REGULATIONS**

TSCA (Toxic Substance Control Act): This product or its components are listed on the TSCA 8(b) Inventory of Existing Chemical Substances.

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA): This product or its components are on the Domestic Substances List (DSL), and are acceptable for use in Canada under the provisions of CEPA.

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.

**OTHER CLASSIFICATIONS****HCS (U.S.A.)**

Not controlled under the HCS (United States). Exempt under 1910.1200(b)(6)(x).

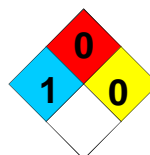
**DSCL (EEC)**

Not available.

**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)**

Not Available  
No Disponible  
Pas Disponible

**ADR (Europe) (Pictograms)**

Not Available  
No Disponible  
Pas Disponible

**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> (2007). 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. (2007); HSDB: Hazardous Substances Data Bank. National Library of Medicine, Bethesda, Maryland (2007); IRIS: Integrated Risk Information System. U.S. Environmental Protection Agency, Washington, D.C. (2007); NIOSH: Pocket Guide to Chemical Hazards. National Institute for Occupational Safety and Health, Cincinnati, Ohio (2007); OHM/TADS: Oil and Hazardous Materials Technical Assistance Data System. U.S. Environmental Protection Agency, Washington, D.C. (2007); REPROTOX®: Scialli A.R. Georgetown University Medical Center and Reproductive Toxicology Center, Columbia Hospital for Women Medical Center, Washington, D.C. (2007); RTECS®: Registry of Toxic Effects of Chemical Substances. National Institute for Occupational Safety and Health, Cincinnati, Ohio (2007); and SHEPARDS: Shepard T.H.: Shepard's Catalog of Teratogenic Agents (2007).  
 -The Fertilizer Institute Product Testing Program Results, March 2003  
 -Michigan Office of Regulatory Reform R325.51108

**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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