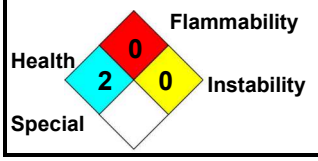
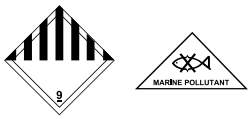
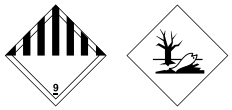
Agrium Advanced Technologies

Material Safety Data Sheet

NFPA	HMIS	WHMIS	TDG	DOT
	Health 2 Flammability 0 Physical hazards 0 Suggested PPE E		 See Section 14	 See Section 14

1 . Product and Company Identification

Product name **Zink Gro Maxi-Granular Zinc Sulphate Monohydrate w/ 35.5% Zinc**

Synonym Zinc Sulphate (Monohydrate)

Material uses Fertilizer.

MSDS Number 54113, 54172, 54181, 54209

MSDS prepared by the Environment, Health & Safety Department on: **2/7/2012.**

Version 1.01

In Case of Emergency

Transportation: 1-800-792-8311
Medical: 1-888-615-0015

Manufacturer
Agrium Advanced Technologies
Fairbury Micronutrients
71025 569th Avenue
Fairbury, Nebraska

For more information on Agrium AT or our products, please go to:
http://www.agriumat.com
or contact us at Toll-Free:800-461-6471

2 . Hazards Identification

Physical state Solid.

Odor Odorless.

OSHA/HCS status While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this MSDS contains valuable information critical to the safe handling and proper use of the product. This MSDS should be retained and available for employees and other users of this product.

Routes of entry Ingestion.
Inhalation.
Dermal

Potential acute health effects

Inhalation May irritate the respiratory tract if inhaled.

Ingestion May be harmful if swallowed.

Skin May cause skin irritation.

Eyes May cause severe eye irritation.

Potential chronic health effects

Chronic effects No known significant effects or critical hazards.

Carcinogenicity No known significant effects or critical hazards.

Mutagenicity No known significant effects or critical hazards.

Teratogenicity No known significant effects or critical hazards.

Developmental effects No known significant effects or critical hazards.

Fertility effects No known significant effects or critical hazards.

2 . Hazards Identification

Over-exposure signs/symptoms

Inhalation	No specific data.
Ingestion	No specific data.
Skin	No specific data.
Eyes	No specific data.
Medical conditions aggravated by over-exposure	None known.

See toxicological information (Section 11)

3 . Composition / Information on Ingredients

United States

Name	CAS number	%
Sulfuric acid, zinc salt (1:1), monohydrate	7446-19-7	99

Canada

Name	CAS number	%
Sulfuric acid, zinc salt (1:1), monohydrate	7446-19-7	99

Mexico

					Classification			
Name	CAS number	UN number	%	IDLH	H	F	R	Special
Sulfuric acid, zinc salt (1:1), monohydrate	7446-19-7	Not available.	99	-	0	0	0	

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

4 . First Aid Measures

Eye contact	Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention if symptoms occur.
Skin contact	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention if symptoms occur.
Inhalation	Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms occur.
Ingestion	Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.
Protection of first-aiders	No action shall be taken involving any personal risk or without suitable training.
Notes to physician	No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

5 . Fire-fighting Measures

Flammability of the product	No specific fire or explosion hazard.
Extinguishing media	
Suitable	Use an extinguishing agent suitable for the surrounding fire.
Not suitable	None known.
Special exposure hazards	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
Hazardous thermal decomposition products	Decomposition products may include the following materials: sulfur oxides metal oxide/oxides
Special protective equipment for fire-fighters	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6 . Accidental Release Measures

Personal precautions	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment (see Section 8).
Environmental precautions	Avoid dispersal of spilled material and runoff into waterways, drains, and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers or waterways).
Methods for cleaning up	
Small spill	Move containers from spill area. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.
Large spill	Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see section 1 for emergency contact information and section 13 for waste disposal.

7 . Handling and Storage

Handling	Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas.
Storage	Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. Keep out of reach of children.

8 . Exposure Controls / Personal Protection

Canada

Occupational exposure limits		TWA (8 hours)			STEL (15 mins)			Ceiling			
Ingredient	**List name**	**ppm**	**mg/m³**	**Other**	**ppm**	**mg/m³**	**Other**	**ppm**	**mg/m³**	**Other**	**Notations**
No exposure limit value known.											

Consult local authorities for acceptable exposure limits.

Recommended monitoring procedures

If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

Engineering measures

No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protection

Respiratory

Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Hands

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Eyes

Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to dusts.

Skin

Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Personal protective equipment (Pictograms)

Environmental exposure controls

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

9 . Physical and Chemical Properties

Physical state	Solid.
Flash point	Non-flammable.
Flammable limits	Non-flammable.
Color	White. [Light]
Odor	Odorless.
Molecular weight	179.47 g/mol
Molecular formula	ZnSO4 - H2O
Boiling/condensation point	740 C (Decomposes)
Vapor density	Not applicable
VOC	0 % (w/w)
Viscosity	Not applicable
Solubility	Not soluble in alcohol.

10 . Stability and Reactivity

Chemical stability	The product is stable.
Possibility of hazardous reactions	Under normal conditions of storage and use, hazardous reactions will not occur.
Hazardous polymerization	Under normal conditions of storage and use, hazardous polymerization will not occur.
Conditions to avoid	No specific data.
Materials to avoid	No specific data.
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11 . Toxicological Information

United States

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
None identified.				

Conclusion/Summary Not considered hazardous

Chronic toxicity

Product/ingredient name	Result	Species	Dose	Exposure
None identified.				

Conclusion/Summary No known significant effects or critical hazards.

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
None identified.					

11 . Toxicological Information

Conclusion/Summary Not available.

Skin May be irritating to the skin.

Eyes Possible eye irritant.

Respiratory May be a respiratory irritant

Sensitizer

Product/ingredient name	Route of exposure	Species	Result
None identified.			

Conclusion/Summary Not available.

Skin Not considered a sensitizer

Respiratory Not considered a sensitizer

Carcinogenicity

Product/ingredient name	Result	Species	Dose	Exposure
None identified.				

Conclusion/Summary Not classified as carcinogenic, teratogenic and mutagenic

Mutagenicity

Product/ingredient name	Test	Experiment	Result
None identified.			

Conclusion/Summary Not classified as carcinogenic, teratogenic and mutagenic

Teratogenicity

Product/ingredient name	Result	Species	Dose	Exposure
None identified.				

Conclusion/Summary Not classified as carcinogenic, teratogenic and mutagenic

Canada

Acute toxicity

Conclusion/Summary Not considered hazardous

Chronic toxicity

Conclusion/Summary No known significant effects or critical hazards.

Irritation/Corrosion

Conclusion/Summary Not available.

Skin May be irritating to the skin.

Eyes Possible eye irritant.

Respiratory May be a respiratory irritant

Sensitizer

Conclusion/Summary Not available.

Skin Not considered a sensitizer

Respiratory Not considered a sensitizer

Carcinogenicity

11 . Toxicological Information

Conclusion/Summary Not classified as carcinogenic, teratogenic and mutagenic

Mutagenicity

Conclusion/Summary Not classified as carcinogenic, teratogenic and mutagenic

Teratogenicity

Conclusion/Summary Not classified as carcinogenic, teratogenic and mutagenic

Mexico

Acute toxicity

Conclusion/Summary Not considered hazardous

Chronic toxicity

Conclusion/Summary No known significant effects or critical hazards.

Irritation/Corrosion

Conclusion/Summary Not available.

Skin May be irritating to the skin.

Eyes Possible eye irritant.

Respiratory May be a respiratory irritant

Sensitizer

Conclusion/Summary Not available.

Skin Not considered a sensitizer

Respiratory Not considered a sensitizer

Carcinogenicity

Conclusion/Summary Not classified as carcinogenic, teratogenic and mutagenic

Mutagenicity

Conclusion/Summary Not classified as carcinogenic, teratogenic and mutagenic

Teratogenicity

Conclusion/Summary Not classified as carcinogenic, teratogenic and mutagenic

12 . Ecological Information

Environmental effects No known significant effects or critical hazards.

United States

Conclusion/Summary Not available.

Canada

Mexico

12 . Ecological Information

13 . Disposal Considerations

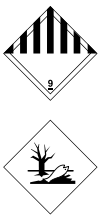
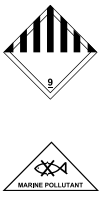
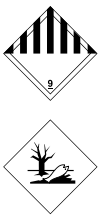
Waste disposal

The generation of waste should be avoided or minimized wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

14 . Transport Information

Regulatory information	UN number	Shipping name	Classes	PG*	Label	Additional information
DOT Classification	3077	Zinc Sulphate (Hydrous). Marine pollutant	9	III		**Special provisions** Regulated if greater than the Reportable Quantity: 1,000 LBS (454 KG)
TDG Classification	3077	Zinc Sulphate (Hydrous). Marine pollutant	9	III		**Special provisions** Regulated if greater than the Reportable Quantity: 1,000 LBS (454 KG)
Mexico Classification	3077	Zinc Sulphate (Hydrous). Marine pollutant	9	III		-

PG* : Packing group

15 . Regulatory Information

United States

HCS Classification

Not regulated.

U.S. Federal regulations

TSCA 8(a) IUR Exempt/Partial exemption: Not determined
United States inventory (TSCA 8b): All components are listed or exempted.

SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: No products were found.
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: No products were found.

Clean Water Act (CWA) 307: Sulfuric acid, zinc salt (1:1), monohydrate

Clean Air Act (CAA) 112 accidental release prevention: No products were found.

Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs)

Not listed

Clean Air Act Section 602 Class I Substances

Not listed

Clean Air Act Section 602 Class II Substances

Not listed

DEA List I Chemicals (Precursor Chemicals)

Not listed

DEA List II Chemicals (Essential Chemicals)

Not listed

State regulations

Connecticut Carcinogen Reporting: None of the components are listed.
Connecticut Hazardous Material Survey: None of the components are listed.
Florida substances: None of the components are listed.
Illinois Chemical Safety Act: None of the components are listed.
Illinois Toxic Substances Disclosure to Employee Act: None of the components are listed.
Louisiana Reporting: None of the components are listed.
Louisiana Spill: None of the components are listed.
Massachusetts Spill: None of the components are listed.
Massachusetts Substances: None of the components are listed.
Michigan Critical Material: None of the components are listed.
Minnesota Hazardous Substances: None of the components are listed.
New Jersey Hazardous Substances: The following components are listed: ZINC compounds
New Jersey Spill: None of the components are listed.
New Jersey Toxic Catastrophe Prevention Act: None of the components are listed.
New York Acutely Hazardous Substances: None of the components are listed.
New York Toxic Chemical Release Reporting: None of the components are listed.
Pennsylvania RTK Hazardous Substances: The following components are listed: ZINC COMPOUNDS
Rhode Island Hazardous Substances: None of the components are listed.

United States inventory (TSCA 8b)

All components are listed or exempted.

Canada

WHMIS (Canada)

Not controlled under WHMIS (Canada).

15 . Regulatory Information

Canadian lists

CEPA Toxic substances: None of the components are listed.
Canadian ARET: None of the components are listed.
Canadian NPRI: The following components are listed: Zinc
Alberta Designated Substances: None of the components are listed.
Ontario Designated Substances: None of the components are listed.
Quebec Designated Substances: None of the components are listed.

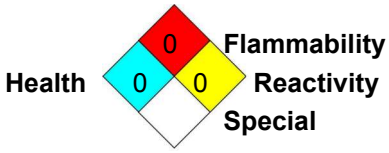
Canada inventory

All components are listed or exempted.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

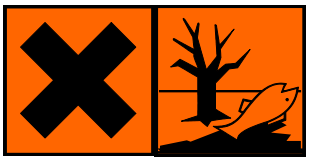
Mexico

Classification



EU regulations

Hazard symbol or symbols



Risk phrases

R22- Harmful if swallowed.
R41- Risk of serious damage to eyes.
R50/53- Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety phrases

S2- Keep out of the reach of children.
S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S29- Do not empty into drains.
S39- Wear eye/face protection.
S46- If swallowed, seek medical advice immediately and show this container or label.
S61- Avoid release to the environment. Refer to special instructions/safety data sheet.

International regulations

International lists

Australia inventory (AICS): All components are listed or exempted.
China inventory (IECSC): All components are listed or exempted.
Japan inventory: All components are listed or exempted.
Korea inventory: All components are listed or exempted.
New Zealand Inventory of Chemicals (NZIoC): All components are listed or exempted.
Philippines inventory (PICCS): All components are listed or exempted.

Chemical Weapons Convention List Schedule I Chemicals

Not listed

Chemical Weapons Convention List Schedule II Chemicals

Not listed

Chemical Weapons Convention List Schedule III Chemicals

Not listed

16 . Other information

Label requirements NOT EXPECTED TO PRODUCE SIGNIFICANT ADVERSE HEALTH EFFECTS WHEN THE RECOMMENDED INSTRUCTIONS FOR USE ARE FOLLOWED.

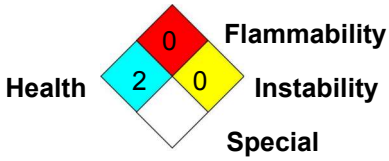
Hazardous Material Information System (U.S.A.)

Health	2
Flammability	0
Physical hazards	0

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material. Suggested protective clothing might not be adequate. Consult a specialist before handling this product.

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



Date of issue 2/7/2012.

Version 1.01

Indicates information that has changed from previously issued version.

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