

# Safety Data Sheet

Issue Date: 21-Aug-2013

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Version 1

## 1. IDENTIFICATION

### Product Identifier

**Product Name** Leaf-MAX II

### Other means of identification

**SDS #** VLS-003

**Other Information** Product Number: 0-0-0 3.5 Mg 2.5 Zn  
Factory Formula: 01190.

### Recommended use of the chemical and restrictions on use

**Recommended Use** Fertilizer. Micronutrient.

### Details of the supplier of the safety data sheet

#### Supplier Address

Verdesian Life Sciences, U.S., LLC.  
12222 Ave 352  
Visalia, CA 93291

### Emergency Telephone Number

**Company Phone Number** Business Phone: (800) 868-6446  
Fax Phone: (559) 625-9255  
**Emergency Telephone (24 hr)** INFOTRAC 1-352-323-3500 (International)  
1-800-535-5053 (North America)

## 2. HAZARDS IDENTIFICATION

**Appearance** Clear, colorless liquid      **Physical State** Liquid      **Odor** Faint to slight odor

### Classification

Skin corrosion/irritation	Category 1 Sub-category C
Serious eye damage/eye irritation	Category 1

### Hazards Not Otherwise Classified (HNOC)

May be harmful if swallowed

### Signal Word

**Danger**

### Hazard Statements

Causes severe skin burns and eye damage



**Precautionary Statements - Prevention**

Do not breathe dust/fume/gas/mist/vapors/spray  
 Wash face, hands and any exposed skin thoroughly after handling  
 Wear protective gloves/protective clothing/eye protection/face protection

**Precautionary Statements - Response**

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
 Immediately call a poison center or doctor/physician  
 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower  
 Wash contaminated clothing before reuse  
 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing  
 Immediately call a poison center or doctor/physician  
 IF SWALLOWED: rinse mouth. Do NOT induce vomiting

**Precautionary Statements - Storage**

Store locked up

**Precautionary Statements - Disposal**

Dispose of contents/container to an approved waste disposal plant

**Other Hazards**

Harmful to aquatic life with long lasting effects

**Unknown Acute Toxicity**

17% of the mixture consists of ingredient(s) of unknown toxicity

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%
Proprietary Phosphorous Compounds	Proprietary	Proprietary
Organic Acid Salt	Proprietary	Proprietary
Organic Acid	Proprietary	5-10
Inorganic Salt	Proprietary	>1

\*\*If Chemical Name/CAS No is "proprietary" and/or Weight-% is listed as a range, the specific chemical identity and/or percentage of composition has been withheld as a trade secret.\*\*

### 4. FIRST-AID MEASURES

**First Aid Measures**

<b>General Advice</b>	Individuals experiencing a chemical exposure must be taken for medical attention if any adverse effect occurs. Rescuers should be taken for medical attention, if necessary. Take a copy of the label and SDS to a health professional with the exposed individual.
<b>Eye Contact</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. "Roll" eyes to expose more surface. Seek immediate medical attention/advice.
<b>Skin Contact</b>	Wash off immediately with plenty of water for at least 15 minutes. Take off contaminated clothing. Wash contaminated clothing before reuse.
<b>Inhalation</b>	Remove to fresh air. Oxygen or artificial respiration if needed. Call a physician immediately.
<b>Ingestion</b>	Do not induce vomiting without medical advice. Never give anything by mouth to a person who is unconscious or convulsing. If patient is conscious and alert, dilute by drinking milk, egg whites or large quantities of water.

**Most important symptoms and effects**

**Symptoms** Inhalation of vapors and/or aerosols in high concentration may cause irritation of respiratory system. Coughing. Contact will cause irritation and redness to exposed areas. Irritating to mouth, throat, and stomach if ingested.

**Indication of any immediate medical attention and special treatment needed**

**Notes to Physician** Treat symptomatically.

**5. FIRE-FIGHTING MEASURES****Suitable Extinguishing Media**

Water spray (fog). Foam. Halon. Carbon dioxide (CO<sub>2</sub>). Dry chemical. ABC-powder.

**Unsuitable Extinguishing Media** Not determined.

**Specific Hazards Arising from the Chemical**

Thermal decomposition can lead to release of irritating and toxic gases and vapors.

**Hazardous Combustion Products** Phosphorus oxides. Phosphine gas. Carbon oxides. Ammonia.

**Sensitivity to Mechanical Impact** Not Applicable.

**Sensitivity to Static Discharge** Not Applicable.

**Protective equipment and precautions for firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply.

**6. ACCIDENTAL RELEASE MEASURES****Personal precautions, protective equipment and emergency procedures**

**Personal Precautions** In case of a spill, clear the affected area and protect people. Uncontrolled releases should be responded to by appropriately trained personnel in proper personal protective equipment, using pre-planned procedures. In terms of small, incidental releases (e.g. 1 gallon from a leaking container), the minimum personal protective equipment should be as follows: gloves, goggles, and appropriate body protection (e.g. boots, Tyvek suit). For large releases (e.g. 55 gallon drum), the minimum personal protective equipment should be Level C. In the event of a spill in which excessive amounts of mists are generated, or one in which the level of oxygen is below 19.5% or is unknown, the minimum equipment should be Level B.

**Environmental Precautions** See Section 12 for additional Ecological Information.

**Methods and material for containment and cleaning up**

**Methods for Containment** Prevent further leakage or spillage if safe to do so.

**Methods for Clean-Up** Absorb spilled liquid with polypads or other suitable absorbent materials. Rinse area thoroughly. Decontaminate the area thoroughly. Place all spill residue in an appropriate container and seal. Reuse or dispose of this product in accordance with all regulations.

## 7. HANDLING AND STORAGE

### Precautions for safe handling

#### **Advice on Safe Handling**

Use personal protection recommended in Section 8. Wash thoroughly after handling. Do not breathe dust/fume/gas/mist/vapors/spray. Do not eat, drink, smoke, or apply cosmetics while handling this product. Use only in well-ventilated areas. Always open containers slowly to allow any excess pressure to vent. Ensure containers are properly labeled. Emptied container retains product residue. Observe all labeled safeguards until container is cleaned, reconditioned or destroyed. Inspect all incoming containers before storage to ensure that containers are properly labeled and are not damaged.

### Conditions for safe storage, including any incompatibilities

#### **Storage Conditions**

Keep containers tightly closed in a dry, cool and well-ventilated place. Store locked up. Protect from direct sunlight. Keep away from heat. Keep from freezing. Store away from incompatible materials.

#### **Incompatible Materials**

Strong bases. Strong oxidizing agents. Strong reducing agents. Water-reactive materials.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Organic Acid Salt	-	TWA: 15 mg/m <sup>3</sup> total dust TWA: 5 mg/m <sup>3</sup> respirable fraction (vacated) TWA: 15 mg/m <sup>3</sup> total dust (vacated) TWA: 5 mg/m <sup>3</sup> respirable fraction	TWA: 10 mg/m <sup>3</sup> total dust TWA: 5 mg/m <sup>3</sup> respirable dust
Organic Acid	STEL: 15 ppm TWA: 10 ppm	TWA: 10 ppm TWA: 25 mg/m <sup>3</sup> (vacated) TWA: 10 ppm (vacated) TWA: 25 mg/m <sup>3</sup>	IDLH: 50 ppm TWA: 10 ppm TWA: 25 mg/m <sup>3</sup> STEL: 15 ppm STEL: 37 mg/m <sup>3</sup>
Water and other components	-	TWA: 15 mg/m <sup>3</sup> mist, total particulate TWA: 5 mg/m <sup>3</sup> mist, respirable fraction (vacated) TWA: 10 mg/m <sup>3</sup> mist, total particulate (vacated) TWA: 5 mg/m <sup>3</sup> mist, respirable fraction	-

### Appropriate engineering controls

#### **Engineering Controls**

Local exhaust ventilation to maintain mist concentrations. Showers. Eyewash stations.

### Individual protection measures, such as personal protective equipment

#### **Eye/Face Protection**

Splash goggles or safety glasses. Wear face shield for operations involving more than 5 gallons of this solution in which splashes or sprays can be generated.

#### **Skin and Body Protection**

Wear protective Neoprene™ gloves. Use triple gloves for spill response. Wear protective clothing appropriate for task (coveralls, apron, Tyvek suit).

**Respiratory Protection**

None required under normal circumstances of use. If operations generate aerosols, mists, or sprays which cause exposures in excess of the guidelines listed above, respiratory protection may be needed (e.g. air-purifying respirator with a high efficiency particulate filter) and must comply with the U.S. Federal OSHA Standard (29 CFR 1910.134), applicable U.S. state regulations, or the appropriate standards of Canada and its Provinces.

**General Hygiene Considerations** Handle in accordance with good industrial hygiene and safety practice.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

<b>Physical State</b>	Liquid	<b>Odor</b>	Faint to slight odor
<b>Appearance</b>	Clear, colorless liquid	<b>Odor Threshold</b>	Not Established
<b>Color</b>	Colorless		
<b><u>Property</u></b>	<b><u>Values</u></b>	<b><u>Remarks • Method</u></b>	
<b>pH</b>	2.056		
<b>Melting Point/Freezing Point</b>	< 0 °C / <32 °F		
<b>Boiling Point/Boiling Range</b>	> 100 °C / >212 °F		
<b>Flash Point</b>	Not applicable		
<b>Evaporation Rate</b>	< 1.0	(butyl acetate = 1)	
<b>Flammability (Solid, Gas)</b>	n/a-liquid		
<b>Upper Flammability Limits</b>	Not applicable		
<b>Lower Flammability Limit</b>	Not applicable		
<b>Vapor Pressure</b>	Not established		
<b>Vapor Density</b>	Not established		
<b>Specific Gravity</b>	Not determined		
<b>Water Solubility</b>	Completely soluble		
<b>Solubility in other solvents</b>	Not determined		
<b>Partition Coefficient</b>	Not available		
<b>Auto-ignition Temperature</b>	Not applicable		
<b>Decomposition Temperature</b>	Not determined		
<b>Kinematic Viscosity</b>	Not determined		
<b>Dynamic Viscosity</b>	Not determined		
<b>Explosive Properties</b>	Not determined		
<b>Oxidizing Properties</b>	Not determined		
<b>Density</b>	11.49 lb/gal (1.3767 g/L)		

## 10. STABILITY AND REACTIVITY

### Reactivity

Not reactive under normal conditions.

### Chemical Stability

Stable under recommended storage conditions.

### Possibility of Hazardous Reactions

None under normal processing.

#### **Hazardous Polymerization**

Hazardous polymerization does not occur.

### Conditions to Avoid

Extreme temperatures. Contact with incompatible materials.

### Incompatible Materials

Strong bases. Strong oxidizing agents. Strong reducing agents. Water-reactive materials.

### Hazardous Decomposition Products

Phosphorous oxides. Phosphine. Carbon oxides. Ammonia.

## 11. TOXICOLOGICAL INFORMATION

### Information on likely routes of exposure

#### Product Information

<b>Eye Contact</b>	Causes severe eye damage.
<b>Skin Contact</b>	Causes severe skin burns.
<b>Inhalation</b>	Avoid breathing vapors or mists.
<b>Ingestion</b>	May be harmful if swallowed.

### Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Proprietary Phosphorous Compounds	= 1500 mg/kg ( Rat )	-	-
Organic Acid	= 3310 mg/kg ( Rat )	= 1060 mg/kg ( Rabbit )	= 11.4 mg/L ( Rat ) 4 h
Inorganic Salt	= 10 g/kg ( Rat )	-	-
Water and other components	= 12600 mg/kg ( Rat )	> 10 g/kg ( Rabbit )	> 570 mg/m <sup>3</sup> ( Rat ) 1 h
Trade Secret	= 1850 mg/kg ( Rat )	> 5 g/kg ( Rabbit )	-

### Information on physical, chemical and toxicological effects

**Symptoms** Please see section 4 of this SDS for symptoms.

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

**Carcinogenicity** This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.

### Numerical measures of toxicity

Not determined

**Unknown Acute Toxicity** 17% of the mixture consists of ingredient(s) of unknown toxicity.

## 12. ECOLOGICAL INFORMATION

### Ecotoxicity

Harmful to aquatic life with long lasting effects.

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Proprietary Phosphorous Compounds		6980 - 9784: 96 h Brachydanio rerio mg/L LC50 static		
Organic Acid		79: 96 h Pimephales promelas mg/L LC50 static 75: 96 h Lepomis macrochirus mg/L LC50 static	EC50 = 8.8 mg/L 15 min EC50 = 8.8 mg/L 25 min EC50 = 8.8 mg/L 5 min	47: 24 h Daphnia magna mg/L EC50 65: 48 h Daphnia magna mg/L EC50 Static

Inorganic Salt	1.01: 72 h <i>Desmodesmus subspicatus</i> mg/L EC50	41: 96 h <i>Lepomis macrochirus</i> mg/L LC50 static 59.8: 96 h <i>Pimephales promelas</i> mg/L LC50 static	610: 24 h <i>Daphnia magna</i> mg/L EC50
Water and other components		51 - 57: 96 h <i>Oncorhynchus mykiss</i> mL/L LC50 static	

**Persistence/Degradability**

The components of this solution are relatively stable, but will decompose over time to generate other inorganic compounds.

**Bioaccumulation**

Not determined.

**Mobility**

Chemical Name	Partition Coefficient
Organic Acid	-0.31

**Other Adverse Effects**

Not determined

### 13. DISPOSAL CONSIDERATIONS

**Waste Treatment Methods**

- Disposal of Wastes** Disposal should be in accordance with applicable regional, national and local laws and regulations.
- Contaminated Packaging** Disposal should be in accordance with applicable regional, national and local laws and regulations.

**California Hazardous Waste Status**

Chemical Name	California Hazardous Waste Status
Organic Acid	Toxic Corrosive Ignitable

### 14. TRANSPORT INFORMATION

- Note** Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances.
- DOT** Not regulated
- IATA** Not regulated
- IMDG** Not regulated

### 15. REGULATORY INFORMATION

**International Inventories**

**TSCA** Listed

**Legend:**

*TSCA - United States Toxic Substances Control Act Section 8(b) Inventory*

*DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List*

*EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances*

*ENCS - Japan Existing and New Chemical Substances*

*IECSC - China Inventory of Existing Chemical Substances*

*KECL - Korean Existing and Evaluated Chemical Substances*

*PICCS - Philippines Inventory of Chemicals and Chemical Substances*

**US Federal Regulations****CERCLA**

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Organic Acid	5000 lb		RQ 5000 lb final RQ RQ 2270 kg final RQ

**SARA 313**

Chemical Name	CAS No	Weight-%	SARA 313 - Threshold Values %
Trade Secret -		3 - 7	1.0

**CWA (Clean Water Act)**

Component	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Organic Acid ( 5-10 )	5000 lb			X

**US State Regulations****U.S. State Right-to-Know Regulations**

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Proprietary Phosphorous Compounds	X		
Organic Acid Salt	X	X	
Organic Acid	X	X	X
Trade Secret	X	X	X
Water and other components	X	X	X

**16. OTHER INFORMATION**

<b><u>NFPA</u></b>	<b>Health Hazards</b>	<b>Flammability</b>	<b>Instability</b>	<b>Special Hazards</b>
	3	0	0	Not determined
<b><u>HMIS</u></b>	<b>Health Hazards</b>	<b>Flammability</b>	<b>Physical Hazards</b>	<b>Personal Protection</b>
	3	0	0	D

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**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

**End of Safety Data Sheet**