

Section 1: Product and Company Identification

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Product Name: Heavy 16 Professional Foliar Enhancer
Product Description: Foliage enhancing plant food

Date of Revision: 9 February 2013

Section 2: Hazard Identification

Emergency Overview: Dark green viscous liquid. Contact causes irritation to eyes, skin and respiratory tract. Ingestion impairs blood function and may cause kidney damage.

HMI S HEALTH	1
HMI S FLAMMABILITY	0
HMI S REACTIVITY	0
PERSONAL PROTECTION	C

OSHA Regulatory Status: This material is considered hazardous under the OSHA standard.

Canadian WHMIS Classification: C, D2B

Potential Health Effects:

Inhalation: Inhalation of spray or mist causes irritation of respiratory tract. Symptoms may include coughing and shortness of breath.

Ingestion: Large doses may cause dizziness, abdominal pain, vomiting, bloody diarrhea, weakness, convulsions, and collapse. May cause methemoglobinemia, an interference with the blood's capability to carry oxygen, with symptoms of bluish tint to skin and lips.

Skin Contact: Causes irritation to skin. Symptoms may include redness, itching and pain.

Eye Contact: Causes irritation and burns to eyes. Symptoms may include redness itching and pain.

Chronic Exposure: Chronic oral ingestion of nitrates may cause weakness, depression, headache, and mental impairment. Potassium poisoning may occur with prolonged exposure.

Aggravation of Pre-existing Conditions: No information found.

Target Organs: Blood, eyes, skin, respiratory tract

Section 3: Composition / Information On Ingredients

Component	Common Names, Synonyms	CAS #	Weight %
Potassium nitrate	Nitric acid, potassium salt	7757-79-1	0.5 – 1.5
Calcium nitrate	Nitric acid, calcium salt	13477-34-4	1 – 5
Magnesium nitrate	Nitric acid, magnesium salt	13446-18-9	1 – 5
Calcium chloride		10043-52-4	0.5 – 1.5
Calcium gluconate		18016-24-5	1 – 5
Calcium acetate		127-08-2	1 – 5
Magnesium chloride		7786-30-3	0.5 – 1.5

Non-hazardous components may or may not be listed. Carcinogens are listed when present at 0.1% or more; components which are otherwise hazardous according to OSHA are listed when present at 1.0% or more. This is not intended to be complete compositional disclosure. See Section 15 for applicable states right to know and other regulatory information.

Section 4: First Aid Measures

Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion: Give large amounts of water to drink. Never give anything by mouth to an unconscious person. Get medical attention.

Skin: Immediately flush skin with plenty of water for at least 15 minutes. Get medical attention if irritation develops.

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

Note to Physician: IV administration of calcium gluconate will partially reverse the effects of acute magnesium toxicity. Ventricular support with calcium chloride infusion and mannitol-forced diuresis has also been successful. Treat symptomatically and supportively.

Section 5: Fire Fighting Measures

Fire: Flash point: Not flammable. Strong oxidizer! Solution itself does not burn, but solution applied to paper, fabric, cardboard or other absorbent flammables may catch fire on drying.

Explosion: Not considered an explosion hazard.

Extinguishing Media: Use any suitable media for the surrounding fire. Water spray may be used to keep fire exposed containers cool.

Special Precautions: In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

NFPA Rating: Health - 1 Flammability - 0 Reactivity - 0 Other - NA

Section 6: Accidental Release Measures

Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer.

Section 7: Handling and Storage

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage and moisture. Separate from incompatibles, combustibles, organic or other readily oxidizable materials. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.

Section 8: Exposure Control / Personal Protection

Exposure Guidelines:

Component	CAS #	OSHA PEL	ACGIH TLV	NIOSH TLV
Potassium nitrate	7757-79-1	Not established	Not established	Not established
Calcium nitrate	13477-34-4	Not established	Not established	Not established
Magnesium nitrate	13446-18-9	Not established	Not established	Not established
Calcium chloride	10043-52-4	Not established	Not established	Not established
Calcium gluconate	18016-24-5	Not established	Not established	Not established
Calcium acetate	127-08-2	Not established	Not established	Not established
Magnesium chloride	7786-30-3	Not established	Not established	Not established

Personal Protective Equipment:

Skin Contact: Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Eye Contact: Use chemical safety goggles and/or full face shield where misting or splashing of solutions is possible. Maintain eye wash fountain and quick-drench facilities in work area.

Inhalation: Use NIOSH-approved vapor respirator if exposure is unknown or exceeds permissible limits. A respiratory protection program that meets OSHA's 29 CFR 1910.134, European standard EN 149 or ANSI Z88.2 requirements must be followed whenever workplace conditions warrant respirator use. **WARNING:** Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

Engineering Controls: A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

Section 9: Physical and Chemical Properties			
Appearance	Dark green viscous liquid	Specific Gravity (g/mL)	1.37
Odor	Mild	pH	8 - 9
Odor Threshold	Not determined	Solubility in water	Complete
Melting Point	Not determined	% Volatiles	87%
Boiling Point	> 100°C (212°F)	Evaporation Rate	Not determined
Flash Point	Does not burn	Vapor Pressure	Not determined

Section 10: Stability and Reactivity

Chemical Stability: This product is stable in closed containers at room temperature.

Hazardous Decomposition Products: Nitrogen oxides (NO, N₂O, NO₂), phosphorus oxides (PO₃, PO₄, P₂O₅)

Incompatibilities: Reducing agents, combustibles, strong acids or bases

Conditions to Avoid: Incompatible materials, combustible materials.

Section 11: Toxicological Information

Acute Dose Effects: Eye: Calcium nitrate: Draize Rabbit: 500 mg/24hour, Mild; Magnesium nitrate: Draize Rabbit: 500 mg/24hour, Mild;

Oral: Potassium nitrate: Rat LD₅₀: 3750 mg/kg; Calcium nitrate: Rat LD₅₀: 3900 mg/kg; Magnesium nitrate: Rat LD₅₀: 5440 mg/kg; Calcium chloride: Rat LD₅₀: 1 g/kg, Rabbit LD₅₀: 1384 mg/kg; Calcium gluconate: Rat LD₅₀: > 5000 mg/kg; Calcium acetate: Rat LD₅₀: 3250 mg/kg; Calcium chloride: Rat LD₅₀: 1 g/kg, Rabbit LD₅₀: 1384 mg/kg; Calcium gluconate: Rat LD₅₀: > 5000 mg/kg; Magnesium chloride: Rat LD₅₀: 2800 mg/kg

Inhalation: No information found.

Skin: Calcium nitrate: Draize Rabbit: 500 mg/24 hour, Mild; Rabbit LD₅₀: >5000 mg/kg; Magnesium nitrate: Draize Rabbit: 500 mg/24 hour, Mild;

Section 12: Ecological Information

Environmental Fate: This product is not expected to bioaccumulate.

Ecotoxicity: Potassium nitrate: 96 hour LC₅₀ *Gambusia affinis* (Mosquito fish): 22.5 mg/L; 72 hour EC₅₀ *Daphnia magna* (water flea): 226 mg/L;

Section 13: Disposal Considerations

As a waste, this material in its raw form IS NOT considered a HAZARDOUS WASTE under RCRA (29 CFR 261).

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

Section 14: Transport Information

U.S. Domestic Ground **Proper Shipping Name:** Not regulated for transport
DOT Hazard Class: Not applicable
UN Number: Not applicable
Packing Group: Not applicable

U.S. Domestic Air **Proper Shipping Name:** Not regulated for transport
DOT Hazard Class: Not applicable
UN Number: Not applicable
Packing Group: Not applicable

Canadian TDG **Proper Shipping Name:** Not regulated for transport
DOT Hazard Class: Not applicable
UN Number: Not applicable
Packing Group: Not applicable

International Air **Proper Shipping Name:** Not regulated for transport

DOT Hazard Class: Not applicable

UN Number: Not applicable

Packing Group: Not applicable

CERCLA Reportable Quantity (RQ): N/A

Releases exceeding the reportable quantity (RQ) must be reported to the National Response Center (800) 424-8802.

This data provided for information only. The description shown may not apply to all shipping situations.

Consult 49 CFR, or appropriate regulations to properly classify your shipment for transportation.

Section 15: Regulatory Information

TSCA Chemical Inventory: All of the chemicals in this product are listed on the TSCA Inventory.

TSCA Sec 4 Chemical Test Rule: None of the components in this product are on this list.

TSCA Sec 8(d): None of the components in this product are on the Health and Safety Reporting List.

TSCA Sec 12(b) Notices of Export: None of the components of this product are on this list.

TSCA Significant New Use Rule (SNUR): None of the components of this product are on this list.

SARA Sec 302 (EHS) TPQ: None of the components in this product have a TPQ.

SARA Sec 302 (EHS) RQ: None of the components in this product have a RQ.

SARA Sec 311/312: Acute – YES; Chronic – YES; Fire – NO; Release of Pressure – NO; Reactivity – NO

SARA 313 List: Potassium nitrate, Calcium nitrate and Magnesium nitrate in this product are reportable under Section 313 Title III and 40 CFR Part 372.

CERCLA Hazardous Substances and corresponding RQs: N/A

RCRA: None of the components in this product are on this list.

Clean Air Act: Hazardous Air Pollutants? NO **Class 1 Ozone Depletors?** NO **Class 2 Ozone Depletors?** NO

Clean Water Act: Hazardous Substance? NO **Priority Pollutant?** NO **Toxic Pollutant?** NO

Chemical Weapons Convention: None of the components in this product are on this list.

Drug Enforcement Agency (DEA) CDTA: None of the components in this product are on this list.

OSHA: None of the components in this product are considered Highly Hazardous by OSHA.

State Right-to-Know Lists: Potassium nitrate is found on the Right-to-Know lists of Massachusetts, New Jersey and Pennsylvania. Calcium nitrate is found on the Right-to-Know list of New Jersey. Magnesium nitrate is found on the Right-to-Know lists of Massachusetts, New Jersey and Pennsylvania.

California Proposition 65 WARNING: None of the components in this product are on this list.

Canadian DSL/NDSL: Ammonium nitrate is listed on Canada's DSL List.

Canadian WHMIS: This product has a WHMIS classification of C, D2B.

Canadian Ingredient Disclosure List: is listed on the Canadian Ingredient Disclosure List. Potassium nitrate is not listed on the Canadian Ingredient Disclosure List.

Section 16: Other Information

Abbreviations and acronyms used:

ACGIH	American Conference of Governmental Industrial Hygienists	NA	not applicable, not available
ANSI	American National Standards Institute	NIOSH	National Institute for Occupational Safety and Health
atm	atmosphere (pressure unit)	ND	not determined
BOD	biological oxygen demand	NFPA	National Fire Prevention Association
CAS	Chemical Abstracts Service	NTP	National Toxicology Program
CC	closed cup	OC	open cup
CDTA	Chemical Drug and Trafficking Act	OSHA	Occupational Safety and Health Administration
COC	Cleveland Open Cup	Part	partition
COD	chemical oxygen demand	PEL	permissible exposure limits
coeff.	coefficient	ppb	parts per billion
CFR	Code of Federal Regulations	PPE	personal protective equipment
CPR	cardio-pulmonary resuscitation	ppm	parts per million
DEA	Drug Enforcement Agency	psi	pounds per square inch
DOT	Department of Transportation	RCRA	Resource Conservation and Recovery Act
FDA	Food and Drug Administration	RQ	Reportable quantity
IARC	Internat'l Agency for Research on Cancer	RTK	Right to Know
IDLH	immediate danger to life and health	SARA	Superfund Amendments and Reauthorization Act
kg	kilogram	STEL	short-term exposure limit
L	liter	TCC	Tagliabue Closed Cup
LC50	median lethal concentration	TPQ	threshold planning quantity
LD50	median lethal dose	TQ	threshold quantity
LEL	lower explosive limit	TSCA	Toxic Substances Control Act
mg	milligram	TWA	time-weighted average
mL	milliliter	UEL	upper explosive limit

This document was prepared in accordance with 29 CFR 1910.1200 and ANSI Z400.1-2010.
Prepared by Douglas R. Chrisope on 9 February 2013.

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