Athena Ag, Inc.
1300 Marsh Landing Parkway #106
Jacksonville Beach, FL, USA, 32250
Telephone: (844) 333 1818

SAFETY DATA SHEET

SECTION 1. IDENTIFICATION

Product identifier used on the label
: **Athena Grow A**

Other means of identification : None assigned.

Recommended use of the chemical and restrictions on use
: Hydroponic plant nutrient/fertilizer
Recommended restrictions: None known.

Chemical family : Mixture

Name, address, and telephone number of the supplier:

Athena Ag, Inc.

1300 Marsh Landing Parkway #106
Jacksonville Beach, FL, USA
32250

Name, address, and telephone number of the manufacturer:

Refer to supplier

Supplier's Telephone # : 1 (818) 333-1818

24 Hr. Emergency Tel # : INFOTRAC: (800) 535-5053 (US and Canada); + 001 (352) 323-3500 (International)

SECTION 2. HAZARDS IDENTIFICATION

Classification of the chemical

Dark red liquid. Semi-metallic, slightly sweet odour.

Most important hazards: Harmful if swallowed. For further information, please refer to section 11 of the SDS.

This material is classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015).

Hazard classification:
Acute toxicity, oral - Category 4

Physical Hazards Not Otherwise Classified (PHNOC) :Not applicable
Health Hazards Not Otherwise Classified (HHNOC) :Not applicable

Label elements

Hazard pictogram(s)



Signal Word

Warning!

Hazard statement(s)

Harmful if swallowed.

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Precautionary statement(s)

Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth.
Dispose of contents/container in accordance with local regulation.

Other hazards

Other hazards which do not result in classification:
Direct skin contact may cause slight or mild, transient irritation. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Ecological information:
Not expected to be harmful to aquatic organisms. Avoid release to the environment.
See Section 12 for more environmental information.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixture.

Chemical name	Common name and synonyms	CAS #	Concentration (% by weight)
Nitric acid, ammonium calcium salt	Calcium nitrate	15245-12-2	**10.0 - 30.0**
Potassium nitrate	Nitrate of potash	7757-79-1	**7.0 - 13.0**

The exact concentrations of the above listed chemicals are being withheld as a trade secret.

SECTION 4. FIRST-AID MEASURES

Description of first aid measures

Ingestion : Rinse mouth thoroughly. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. If vomiting occurs spontaneously, keep victim's head lowered (forward) to reduce the risk of aspiration. Get medical attention immediately.

Inhalation : Harmful effects are not expected under normal usage. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen by qualified medical personnel only.

Skin contact : Wash off with soap and plenty of water. Remove and wash contaminated clothing before re-use. Get medical attention if irritation develops and persists.

Eye contact : 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.

Most important symptoms and effects, both acute and delayed

: Harmful if swallowed. Direct skin contact may cause slight or mild, transient irritation. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Indication of any immediate medical attention and special treatment needed

: Provide general supportive measures and treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media

: Water spray, fog (flooding amounts).

Unsuitable extinguishing media

: Do not use a solid water stream as it may scatter and spread the fire.
Do not use carbon dioxide or other smothering agents, as they may be ineffective.

Special hazards arising from the substance or mixture / Conditions of flammability

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: Not considered flammable. Toxic fumes, gases or vapours may evolve on burning. May decompose to form toxic/corrosive gasses if exposed to high heat. Closed containers may rupture if exposed to excess heat or flame due to a build-up of internal pressure.

Flammability classification (OSHA 29 CFR 1910.106)

: Not flammable.

Hazardous combustion products

: Nitrogen oxides (NOx); Calcium oxides; Ammonia;and other irritating fumes and smoke.

Special protective equipment and precautions for firefighters

Protective equipment for fire-fighters

: Do not enter without wearing specialized protective equipment suitable for the situation. Firefighter's normal protective clothing (Bunker Gear) will not provide adequate protection. A full-body encapsulating chemical protective suit with positive pressure self-contained breathing apparatus (NIOSH approved or equivalent) may be necessary.

Special fire-fighting procedures

: Move containers from fire area if safe to do so. Contaminated surfaces may be slippery. Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water courses. Dike for water control.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

: Restrict access to area until completion of clean-up. Keep people away from and upwind of spill/leak. Contaminated surfaces may be slippery. All persons dealing with clean-up should wear the appropriate protective equipment including self-contained breathing apparatus.
Refer to protective measures listed in sections 7 and 8.

Environmental precautions : Do not allow material to contaminate ground water system. Prevent product from entering drains, sewers, waterways and soil.

Methods and material for containment and cleaning up

: Ventilate the area. Remove all sources of ignition. Prevent further leakage or spillage if safe to do so. Do not touch or walk through spilled material. Material can create slippery conditions. Contain and absorb spilled liquid with non-combustible, inert absorbent material (e.g. sand). Place in clean, dry and labeled containers.Clean surface thoroughly to remove residual contamination. After cleaning, flush away traces with water. Do not flush into surface water or sanitary sewer system. Refer to Section 13 for disposal of contaminated material. Contact the proper local authorities.

Special spill response procedures

: If a spill/release in excess of the EPA reportable quantity is made into the environment, immediately notify the National Response Center in the United States (phone: 1-800-424-8802).

EPA/CERCLA Reportable quantity (RQ): See section 15.

In Canada: Contact appropriate local and provincial environmental authorities for assistance and/or reporting requirements.

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling

: Keep container tightly closed when not in use. Wear appropriate protective equipment. Material can create slippery conditions. Avoid contact with skin, eyes and clothing. Do not eat, drink or smoke when using this product. Do not ingest. Wash thoroughly after handling. Keep away from incompatibles. Keep away from extreme heat and flame. Empty containers retain residue and can be dangerous.

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Conditions for safe storage : Store in a cool, dry, well ventilated area. Store away from incompatible materials. Keep away from heat and sources of ignition. Keep away from direct sunlight. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Do not store in open or unlabelled containers. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. No smoking. Inspect periodically for damage or leaks. Have appropriate fire extinguishers and spill clean-up equipment in or near storage area.

Incompatible materials : Acids; Bases; Reducing agents.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits:

Chemical Name	ACGIH TLV		OSHA PEL	
	TWA	STEL	PEL	STEL
Nitric acid, ammonium calcium salt	N/Av	N/Av	N/Av	N/Av
Potassium nitrate	N/Av	N/Av	N/Av	N/Av

Exposure controls

Ventilation and engineering measures : Use only in well-ventilated areas. Apply technical measures to comply with the occupational exposure limits. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. In case of insufficient ventilation wear suitable respiratory equipment.

Respiratory protection : If airbourne concentrations are above the permissible exposure limit or are not known, use NIOSH-approved respirators.Use a NIOSH approved dust respirator if dust levels exceed exposure limits. Respirators should be selected based on the form and concentration of contaminants in air, and in accordance with OSHA (29 CFR 1910.134) or CSA Z94.4-02.Advice should be sought from respiratory protection specialists.

Skin protection : Wear protective gloves. The suitability for a specific workplace should be discussed with the producers of the protective gloves. Depending on conditions of use, safety shoes and additional protective clothing may also be necessary.

Eye / face protection : Wear eye/face protection. Chemical goggles are recommended when there is a potential for splashing.

Other protective equipment : Emergency showers and eyewash facilities should be nearby. Other equipment may be required depending on workplace standards.

General hygiene considerations : Avoid contact with skin, eyes and clothing. Do not eat, drink or smoke when using this product. Wash hands thoroughly after using this product, and before eating, drinking or smoking. Remove and wash contaminated clothing before re-use. Handle in accordance with good industrial hygiene and safety practice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State : Liquid
Colour : Dark red.
Odour : Semi-metallic, slightly sweet.
Odour threshold : Not available.
pH : 5.5 ± 0.5
Melting Point/Freezing point : ~1 °C (30.2°F)

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Initial boiling point and boiling range
: Not available.

Flash point : Not available.
Flashpoint (Method) : Not available.
Evaporation rate (BuAe = 1) : Not available.
Flammability : Not considered flammable.
Lower explosion or flammability limit (% by vol.)
: Not available.
Upper explosion or flammability limit (% by vol.)
: Not available.
Oxidizing properties : Contains a mild oxidizer.
Explosive properties : Not explosive.
Vapour pressure : Not available.
Relative vapour density : Not available.
Relative density / Specific gravity
: 1.198 ± 0.005
Solubility in water : Soluble
Other solubility(ies) : Not available.
Partition coefficient: n-octanol/water or Coefficient of water/oil distribution
: Not available.
Auto-ignition temperature : Not available.
Decomposition temperature : Not available.
Viscosity : Not available.
Particle characteristics : Not applicable.
Volatiles (% by weight) : Not available.
Volatile organic Compounds (VOC's)
: Not available.
Absolute pressure of container
: Not applicable.
Flame projection length : Not applicable.
Other physical/chemical comments
: No additional information.

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Not normally reactive.
Chemical stability : Stable under normal conditions.
Possibility of hazardous reactions
: Hazardous polymerization does not occur. No dangerous reaction known under conditions of normal use.
Conditions to avoid : Avoid contact with incompatible materials. Keep away from extreme heat and flame.
Incompatible materials : Acids; Bases; Reducing agents.
Hazardous decomposition products
: Nitrogen oxides (NOx); Calcium oxides; Ammonia.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure:

Routes of entry inhalation : YES
Routes of entry skin & eye : YES

Routes of entry Ingestion : YES

Routes of exposure skin absorption : YES

Potential Health Effects:

Signs and symptoms of short-term (acute) exposure

Sign and symptoms Inhalation : Harmful effects are not expected under normal usage.

Sign and symptoms ingestion : Harmful if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Sign and symptoms skin : Direct skin contact may cause slight or mild, transient irritation.

Sign and symptoms eyes : Direct eye contact may cause slight or mild, transient irritation.

Potential Chronic Health Effects : Contains material which may cause adverse blood system effects.

Mutagenicity : Not expected to be mutagenic in humans.

Carcinogenicity : No component of this product present at levels greater than, or equal to, 0.1% is identified as a carcinogen or potential carcinogen by ACGIH, IARC, OSHA, or NTP.

Reproductive effects & Teratogenicity : Not expected to cause reproductive effects.

Sensitization to material : Not expected to be a skin or respiratory sensitizer.

Specific target organ effects : Not classified as a specific target organ toxicity - single exposure.
Not classified as a specific target organ toxicity - repeated exposure.

Medical conditions aggravated by overexposure : Not available.

Synergistic materials : Not available.

Toxicological data : There is no available data for the product itself, only for the ingredients. See below for individual ingredient acute toxicity data. The calculated ATE values for this mixture are: ATE oral = 1783.59 mg/kg

Chemical name	LC_{50}(4hr) inh, rat	LD_{50} (Oral, rat)	LD_{50} (Rabbit, dermal)
Nitric acid, ammonium calcium salt	N/Av	>300 - <2000 mg/kg	>2000 mg/kg (rat) (No mortality)
Potassium nitrate	N/Av	3540 mg/kg	> 5000 mg/kg

Other important toxicological hazards : Not applicable

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity : Not expected to be harmful to aquatic organisms. The product should not be allowed to enter drains or water courses, or be deposited where it can affect ground or surface waters. See the following tables for the substance's ecotoxicity data.

Ecotoxicity data:

Ingredients	CAS #	Toxicity to Fish		
		LC50 / 96h	NOEC / 21 day	M Factor
Nitric acid, ammonium calcium salt	15245-12-2	>100 mg/L Rainbow trout Read-across (Analogy)	157 mg/L (32 days) (Read-across)	None.
Potassium nitrate	7757-79-1	> 100 mg/L (Rainbow trout)	N/Av	None.

Ingredients	CAS #	Toxicity to Daphnia		
		EC50 / 48h	NOEC / 21 day	M Factor
Nitric acid, ammonium calcium salt	15245-12-2	>100 mg/L Daphnia magna (Water flea)	N/Av	None.
Potassium nitrate	7757-79-1	490 mg/L (Daphnia magna)	N/Av	None.

Ingredients	CAS #	Toxicity to Algae		
		EC50 / 96h or 72h	NOEC / 96h or 72h	M Factor
Nitric acid, ammonium calcium salt	15245-12-2	>100 mg/L/72hr Green algae	100 mg/L/72hr	None.
Potassium nitrate	7757-79-1	N/Av	N/Av	None.

Persistence and degradability

: No data is available on the product itself.

Bioaccumulation potential : Not expected to bioaccumulate.
See the following data for ingredient information.

Components	Partition coefficient n-octanol/water (log Kow)	Bioconcentration factor (BCF)
Nitric acid, ammonium calcium salt (CAS 15245-12-2)	N/Ap	Not expected to bioaccumula
Potassium nitrate (CAS 7757-79-1)	- 0.79	

Mobility in soil : There is no data available for this product.

Other Adverse Environmental effects

: No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

SECTION 13. DISPOSAL CONSIDERATIONS

Handling for Disposal : Handle in accordance with good industrial hygiene and safety practice. Since emptied containers may retain product residue, follow label warnings even after container is emptied. Refer to protective measures listed in sections 7 and 8.

Methods of Disposal : Dispose in accordance with all applicable federal, state, provincial and local regulations.

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RCRA : If this product, as supplied, becomes a waste in the United States, it may meet the criteria of a hazardous waste as defined under RCRA, Title 40 CFR 261. It is the responsibility of the waste generator to determine the proper waste identification and disposal method. For disposal of unused or waste material, check with local, state and federal environmental agencies.

SECTION 14. TRANSPORT INFORMATION

Regulatory Information	UN Number	UN proper shipping name	Transport hazard class(es)	Packing Group	Label
49CFR/DOT	None.	Not regulated.	not regulated	none	
49CFR/DOT Additional information	None.				
TDG	None.	Not regulated.	not regulated	none	
TDG Additional information	None.				
ICAO/IATA	None.	Not regulated.	not regulated	none	
ICAO/IATA Additional information	None.				
IMDG	None.	Not regulated.	not regulated	none	
IMDG Additional information	None.				

Special precautions for user : Appropriate advice on safety must accompany the package.
Environmental hazards : This substance does not meet the criteria for an environmentally hazardous substance according to the IMDG Code. See ECOLOGICAL INFORMATION, Section 12.

SECTION 15 - REGULATORY INFORMATION

US Federal Information:

Components listed below are present on the following U.S. Federal chemical lists:

Ingredients	CAS #	TSCA Inventory	CERCLA Reportable Quantity(RQ) (40 CFR 117.302):	SARA TITLE III: Sec. 302, Extremely Hazardous Substance, 40 CFR 355:	SARA TITLE III: Sec. 313, 40 CFR 372, Specific Toxic Chemical	
					Toxic Chemical	de Minimis Concentration
Nitric acid, ammonium calcium salt	15245-12-2	Yes	N/Ap	N/Ap	No	No
Potassium nitrate	7757-79-1	Yes	N/Ap	N/Ap	No	N/Ap

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SARA TITLE III: Sec. 311 and 312, SDS Requirements, 40 CFR 370 Hazard Classes: Acute toxicity

US State Right to Know Laws:

The following chemicals are specifically listed by individual States:

Ingredients	CAS #	California Proposition 65		State "Right to Know" Lists					
		Listed	Type of Toxicity	CA	MA	MN	NJ	PA	RI
Nitric acid, ammonium calcium salt	15245-12-2	No	N/Ap	No	No	No	No	No	No
Potassium nitrate	7757-79-1	No	N/Ap	No	Yes	No	Yes	Yes	No

Canadian Information:

Canadian Environmental Protection Act (CEPA) information: All ingredients listed appear on the Domestic Substances List (DSL).

International Information:

Components listed below are present on the following International Inventory list:

Ingredients	CAS #	European EINECs	Australia AICS	Philippines PICCS	Japan ENCS	Korea KECI/KECL	China IECSC	NewZealand IOC
Nitric acid, ammonium calcium salt	15245-12-2	239-289-5	Not listed	Not listed	Not listed	KE-25913	Not listed	May be used as a component in a product covered by a group standard, but is not approved for use as a chemical in its own right.
Potassium nitrate	7757-79-1	231-818-8	Present	Present	(1)-449	KE-29163	Present	HSR001338

SECTION 16. OTHER INFORMATION

Legend : ACGIH: American Conference of Governmental Industrial Hygienists
AICS: Australian Inventory of Chemical Substances
CAS: Chemical Abstract Services
CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CFR: Code of Federal Regulations
CSA: Canadian Standards Association
EC50: Effective Concentration 50%
ENCS: Existing and New Chemical Substances
EPA: Environmental Protection Agency
IECSC: Inventory of Existing Chemical Substances
Inh: Inhalation
IOC: Inventory of Chemicals
KECI: Korean Existing Chemicals Inventory
KECL: Korean Existing Chemicals List
LC: Lethal Concentration
LD: Lethal Dose

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N/Ap: Not Applicable
N/Av: Not Available
NIOSH: National Institute of Occupational Safety and Health
NOEC: No observable effect concentration
NTP: National Toxicology Program
OSHA: Occupational Safety and Health Administration
PEL: Permissible exposure limit
PICCS: Philippine Inventory of Chemicals and Chemical Substances
SARA: Superfund Amendments and Reauthorization Act
STEL: Short Term Exposure Limit
TDG: Canadian Transportation of Dangerous Goods Act & Regulations
TLV: Threshold Limit Values
TSCA: Toxic Substance Control Act
TWA: Time Weighted Average

References : 1. ACGIH, Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices
2. ECHA - European Chemical Agency
3. Canadian Centre for Occupational Health and Safety, CCInfoWeb databases
4. Safety Data Sheets from manufacturer.
5. US EPA Title III List of Lists
6. California Proposition 65 List
7. OECD - The Global Portal to Information on Chemical Substances - eChemPortal

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Revision No. : 4

Revision Information : (M)SDS sections updated 2. HAZARDS IDENTIFICATION 11. TOXICOLOGICAL INFORMATION 15. REGULATORY INFORMATION, 9.

Other special considerations for handling : Provide adequate information, instruction and training for operators.

Prepared for: Athena Ag, Inc. 1300 Marsh Landing Parkway #106 Jacksonville Beach, FL 32250, USA Telephone: 1 (818) 333-1818	ATHENA®
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