Magruder 240611 Calcium Nitrate

results due July 15, 2024

Important Note:
Because of its hygroscopic nature, this sample has not been ground in preparation for distribution. Prepare it as you would any normal sample received in your laboratory.

Guaranteed Analysis

Total Nitrogen (N) ..... 15.5 %

1.0 % Ammoniacal Nitrogen

14.5 % Nitrate Nitrogen

Calcium (Ca).....19.0%

Derived from: Ammonium Calcium Nitrate Double Salt

Also analyze for:
As (ppm), Cd (ppm), Cr (ppm), Co (ppm), Pb (ppm),
Hg (ppm), Mo (ppm), Ni (ppm), Se (ppm), Cu (%) and Zn (%)

The units above are those required for reporting data from this Magruder sample. They may not be the units required on a commercial fertilizer label.

Note: This Magruder Check Sample material is not to be used in the manufacture of products nor applied to any crops or for other fertilizer uses. It is intended for analytical testing purposes only.

SDS for this product can be found at:
http://www.magruderchecksample.org/SDS/240611GuarSDS.pdf

SDS for Magruder 240611

Section 1. Identification

GHS product identifier : YaraLiva Tropicote
Product type : Solid (granulates)
Product code : PA34HG

Uses

Area of application : Professional applications
Material uses : Fertilizers.

Supplier

Supplier's details : Yara North America, Inc.

Address

Street : 100 North Tampa Street, Suite 3200
Postal code : 33602
City : TAMPA
Country : United States

Telephone number : +1 813 222 5700
Fax no. : +1 813 875 5735
e-mail address of person responsible for this SDS : yna-hesq@yara.com
Emergency telephone number (with hours of operation) : US: Chemtrec 24-hours Emergency Response: 1-800-424-9300
Canada: 24 Hour Emergency Service, CHEMTREC 1-800-424-9300

National advisory body/Poison Center

Name : The National Poisons Emergency number
Telephone number : 1 800 222 1222

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture. : ACUTE TOXICITY (oral) - Category 4
SERIOUS EYE DAMAGE - Category 1

GHS label elements

Hazard pictograms :

Signal word : Danger

Hazard statements	:	H302	Harmful if swallowed.
		H318	Causes serious eye damage.

Precautionary statements

Prevention	:	P280	Wear protective gloves and eye protection.
		P270	Do not eat, drink or smoke when using this product.
		P264-a	Wash hands thoroughly after handling.
Response	:	P305	IF IN EYES:
		P351	Rinse cautiously with water for several minutes.
		P338	Remove contact lenses, if present and easy to do. Continue rinsing.
		P310	Immediately call a POISON CENTER or doctor/physician.
		P301	IF SWALLOWED:
		P312	Call a POISON CENTER or doctor/physician if you feel unwell.
		P330	Rinse mouth.

Hazards not otherwise classified	:	None known.
Additional information	:	Product forms slippery surface when combined with water.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Ingredient name	%	CAS number
Nitric acid, ammonium calcium salt	>= 90 - 100	15245-12-2

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.
Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact	:	Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Check for and remove any contact lenses. Get medical attention immediately.
Inhalation	:	If inhaled, remove to fresh air. Get medical attention immediately. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus.

Skin contact	:	Gently wash with plenty of soap and water. Do not rub affected area. Get medical attention if irritation develops.
Ingestion	:	Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if you feel unwell.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact	:	Causes serious eye damage.
Inhalation	:	May give off gas, vapor or dust that is very irritating or corrosive to the respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
Skin contact	:	No known significant effects or critical hazards.
Ingestion	:	Harmful if swallowed. May cause burns to mouth, throat and stomach.

Over-exposure signs/symptoms

Eye contact	:	Adverse symptoms may include the following: pain, watering, redness
Inhalation	:	No specific data.
Skin contact	:	Adverse symptoms may include the following: irritation, redness
Ingestion	:	Adverse symptoms may include the following: stomach pains

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician	:	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
Specific treatments	:	No specific treatment.
Protection of first-aiders	:	No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media	:	Use flooding quantities of water for extinction.
Unsuitable extinguishing media	:	Do NOT use chemical extinguisher or foam or attempt to smother the fire with steam or sand.
Specific hazards arising from the chemical	:	No specific fire or explosion hazard.
Hazardous thermal decomposition products	:	Decomposition products may include the following materials: nitrogen oxides, ammonia, Avoid breathing dusts, vapors or fumes from burning materials., In case of inhalation of decomposition products in a fire, symptoms may be delayed.

Special protective actions for fire-fighters	:	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.
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.
Remark	:	Non-flammable.
Remark	:	Non-explosive.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	:	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. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).
For emergency responders	:	If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
Environmental precautions	:	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill	:	Move containers from spill area. Avoid dust generation. Using a vacuum with HEPA filter will reduce dust dispersal. Place spilled material in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.
Large spill	:	Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, 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.

Section 7. Handling and storage

Precautions for safe handling

Not for human or animal consumption.

Protective measures : Put on appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing. Do not ingest. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : 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. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : 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.Store locked up.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 away from: organic materials, oil and grease.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Nitric acid, ammonium calcium salt	None.

Appropriate engineering controls : If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

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.

Individual protection measures

Hygiene measures : A washing facility or water for eye and skin cleaning purposes should be present. 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. Wash contaminated clothing before reusing.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. **Recommended:** Tightly-fitting goggles, Europe:, CEN: EN166,

Skin protection

Hand protection : 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. For general applications, we recommend gloves with a thickness typically greater than 0.35 mm. It should be emphasized that glove thickness is not necessarily a good predictor of glove resistance to a specific chemical, as the permeation efficiency of the glove will be dependent on the exact composition of the glove material.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : In case of inadequate ventilation wear respiratory protection. **Recommended** Filter P2 Europe: EN 143

Personal protective equipment (Pictograms) :

Section 9. Physical and chemical properties and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Appearance

Physical state : Solid [granulates]

Color : White.,

Odor : Odorless.

pH : 5 - 7 [Conc. (% w/w): 50 g/l]

Melting point/freezing point : 90 - 100 °C (194 - 212 °F)

Boiling point, initial boiling point, and boiling range : Not applicable.

Flash point : Not applicable.

Flammability	:	Non-flammable.
Lower and upper explosion limit/flammability limit	:	**Lower:** Not applicable. **Upper:** Not applicable.
Vapor pressure	:	Not applicable.
Relative vapor density	:	Not applicable.
Bulk density	:	1,050 - 1,150 kg/m3
Solubility(ies)	:	Easily soluble in the following materials: cold water
Solubility in water	:	> 1,000 g/l
Partition coefficient: n-octanol/water	:	Not applicable.
Auto-ignition temperature	:	Not applicable.
Decomposition temperature	:	Not applicable.
Viscosity	:	**Kinematic:** Not applicable.
Explosive properties	:	Non-explosive.
Oxidizing properties	:	Non-oxidizer.

Particle characteristics

Median particle size	:	3 mm

Section 10. Stability and reactivity

Reactivity	:	No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	:	The product is stable.
Possibility of hazardous reactions	:	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	:	Avoid contamination by any source including metals, dust and organic materials.
Incompatible materials	:	alkalis, combustible materials, reducing materials, organic materials, Acids
Hazardous decomposition products	:	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Method	Species	Result	Exposure
Nitric acid, ammonium calcium salt				
	OECD 423 LD50 Oral	Rat	500 mg/kg	Not applicable.
	OECD 402 LD50 Dermal	Rat	2,000 mg/kg	Not applicable.

Conclusion/Summary : Harmful if swallowed.

Irritation/Corrosion

Product/ingredient name	Method	Species	Result	Exposure
Nitric acid, ammonium calcium salt				
	OECD 405 Eyes	Rabbit	Damage	24 - 72 h

Conclusion/Summary

Skin : No known significant effects or critical hazards.

Eyes : Causes serious eye damage.

Respiratory : No known significant effects or critical hazards.

Sensitization

Conclusion/Summary

Skin : No known significant effects or critical hazards.

Respiratory : No known significant effects or critical hazards.

Mutagenicity

Conclusion/Summary : No known significant effects or critical hazards.

Carcinogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Reproductive toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Specific target organ toxicity (single exposure)

No known significant effects or critical hazards.

Aspiration hazard

No known significant effects or critical hazards.

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Causes serious eye damage.

Inhalation : May give off gas, vapor or dust that is very irritating or corrosive to the respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Skin contact : No known significant effects or critical hazards.

Ingestion : Harmful if swallowed. May cause burns to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following: pain, watering, redness

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following: irritation, redness

Ingestion : Adverse symptoms may include the following: stomach pains

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Product/ingredient name	Method	Species	Result	Exposure
Nitric acid, ammonium calcium salt				
	OECD 407 Sub-acute NOAEL Oral	Rat	> 1,000 mg/kg	28 days

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : No known significant effects or critical hazards.

Effects on or via lactation : No known significant effects or critical hazards.

Other effects : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following: pain, watering, redness

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following: irritation, redness

Ingestion : Adverse symptoms may include the following: stomach pains

Numerical measures of toxicity

Acute toxicity estimates

Product/ingredient name	Oral	Dermal	Inhalation (gases)	Inhalation (vapors)	Inhalation (dusts and mists)
YaraLiva Tropicote	502 mg/kg	2510 mg/kg	N/A	N/A	N/A
Nitric acid, ammonium calcium salt	500 mg/kg	2500 mg/kg	N/A	N/A	N/A

Section 12. Ecological information

Toxicity

Product/ingredient name	Method	Species	Result	Exposure
Nitric acid, ammonium calcium salt				
	Acute LC50 Fresh water	Fish	447 mg/l	48 h
	OECD 202 Acute EC50 Fresh water	Daphnia	> 100 mg/l	48 h
	OECD 201 Acute LC50 Fresh water	Algae	> 100 mg/l	72 h
	OECD 209 Acute EC50 Activated sludge	Activated sludge	> 1,000 mg/l	3 h

Conclusion/Summary : No known significant effects or critical hazards.

Persistence and degradability

Conclusion/Summary : Readily biodegradable in plants and soils.

Bioaccumulative potential

Conclusion/Summary : No known significant effects or critical hazards.

Mobility in soil

Soil/water partition coefficient (KOC) : Not available.

Mobility : This product may move with surface or groundwater flows because its water solubility is: high

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Product

Methods of disposal : The generation of waste should be avoided or minimized wherever possible. 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. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. 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. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	TDG Classification	DOT Classification	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	Not applicable.	Not applicable.	Not applicable.	Not applicable.
Transport hazard class(es)	Not applicable.	Not applicable.	Not applicable.	Not applicable.
Packing group	Not applicable.	Not applicable.	Not applicable.	Not applicable.
Environmental hazards	No.	No.	No.	No.

Additional information

14.6 Special precautions for user : Transport within user's premises: Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments

Proper shipping name : CALCIUM NITRATE FERTILIZER

Remarks : **Solid bulk cargoes** Harmful to the marine

environment with regard to MARPOL Annex V: No
Material is hazardous only in bulk according to the IMSBC: No
IMSBC shipping group: C

Section 15. Regulatory information

United States

U.S. Federal regulations : **TSCA 8(a) CDR Exempt/Partial exemption:** Not determined

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

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : ACUTE TOXICITY - oral - Category 4
SERIOUS EYE DAMAGE - Category 1

Composition/information on ingredients

Name	%	Classification
Nitric acid, ammonium calcium salt	>= 90 - 100	SERIOUS EYE DAMAGE - Category 1 ACUTE TOXICITY - oral - Category 4

State regulations

Massachusetts : None of the components are listed.

New York : None of the components are listed.

New Jersey : None of the components are listed.

Pennsylvania : None of the components are listed.

Inventory list

New Zealand Inventory of Chemicals (NZIoC): All components are listed or exempted.
Korea inventory: All components are listed or exempted.
Australia inventory (AIIC): All components are listed or exempted.
Taiwan Chemical Substances Inventory (TCSI): All components are listed or exempted.
United States inventory (TSCA 8b): All components are active or exempted.

EC INVENTORY (EINECS/ELINCS): All components are listed or exempted.
Canada: At least one component is not listed in DSL but all such components are listed in NDSL.
Turkey: All components are listed or exempted.
Viet Nam: All components are listed or exempted.

Section 16. Other information

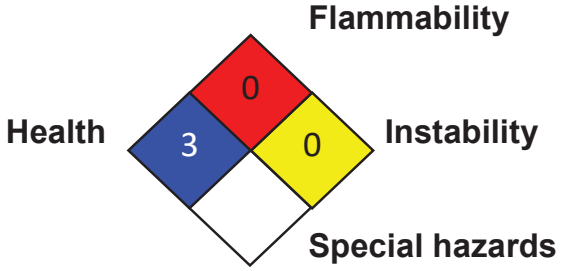
Hazardous Material Information System (U.S.A.)

Health	/	3
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 and the associated label are not required on MSDSs or products leaving a facility 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 trademark and service mark of the American Coatings Association, Inc.
The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

Chronic toxicity:
- : No data available.
*** :** Carcinogen, Target organs, Reproductive effects, Sensitizer to lungs

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



Procedure used to derive the classification

Classification	Justification
ACUTE TOXICITY (oral) - Category 4	Calculation method
SERIOUS EYE DAMAGE - Category 1	Calculation method

History

Date of printing	:	02/19/2024
Date of issue/Date of revision	:	02/05/2024
Date of previous issue	:	08/22/2018
Version	:	1.2
Prepared by	:	Product Stewardship and Compliance (PSC).
Key to abbreviations	:	ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association IBC = Intermediate Bulk Container IMDG = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition coefficient MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) N/A = Not available SGG = Segregation Group UN = United Nations
Key data sources	:	EU REACH ECHA/IUCLID5 CSR. National Institute for Occupational Safety and Health, U.S. Dept. of Health, Education, and Welfare, Reports and Memoranda Registry of Toxic Effects of Chemical Substances. Sphera Solutions Inc., 4777 Levy Street, St Laurent, Quebec HAR 2P9, Canada.

|| Indicates information that has changed from previously issued version.

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