

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Product name: Nucleon liquid fertilizer enzyme additive
Other means of identification: liquid fertiliser
Uses of the substance: enhances the uptake of water and broad nutrient acquisition by plant roots with resultant improvements in soil and plant health, growth and yield
Information on supplier
Supplier: Elemental Enzymes ag & turf, llc
Address: 1685 Galt Industrial blvd., Saint Louis, Mo
USA 63132
Telephone: 1800 691 440
Emergency telephone NO: +1 314 429 2885

SECTION 2: HAZARDS IDENTIFICATION

Signal word: Danger



Classification: Respiratory Sensitisation Category 1
Skin Sensitisation Category 1

Hazard statements: May cause an allergic skin reaction.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Precautionary statements:
P285: In case of inadequate ventilation wear respiratory protection.
P280: Wear protective gloves.
P264: Avoid breathing mist/spray.
P272: Contaminated work clothing should not be allowed out of the workplace.
P363: Wash contaminated clothing before reuse.
P304 +341: IF INHALED: if breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing.
P342 + 311: If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.
P302 + 352: IF ON SKIN: Wash with plenty of soap and water.
P333 + 313: If skin irritation or rash occurs: Get medical advice/attention.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Components	Chemical Name	CAS Number	Proportion (w/w)
Lipase	Lipase	NA	>60%
Mannanase	Mannanase	NA	10 - <30%
1,2-Benzisothiazol-3(2H)-one	1,2-Benzisothiazol-3(2H)-one	2634-33-5	<10%
Other ingredients determined not to be hazardous			to 100%

SECTION 4: FIRST AID MEASURES

Description of first aid measures:

Inhalation: remove from exposure area to fresh air immediately. If breathing is difficult keep at rest and in a position comfortable for breathing. If experiencing respiratory symptoms call a poison centre or doctor/physician.
Eyes: rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and safe to do so. Continue rinsing. Seek immediate medical attention is required.
Skin: remove contaminated clothing and wash affected skin with soap and water. If persistent irritation occurs, obtain medical attention.
Ingestion: treat symptomatically and supportively. Seek medical attention if you feel unwell. Rinse mouth. Do not induce vomiting.
Advice to doctor: Treat symptomatically

SECTION 5: FIREFIGHTING MEASURES

Suitable extinguishing media:	Determined by surrounding material. In case of fire, use water fog, dry chemical, CO ₂ , or "alcohol" foam. Firefighting should be attempted only by those who are adequately trained and equipped with proper protective equipment
Hazchem code:	NA
Special protective equipment and Precautions for fire fighter's:	In case of fire and/or explosion do not breathe fumes. Wear self-contained breathing apparatus and chemical-protective clothing. Keep containers cool by spraying with water if exposed to fire. Collect contaminated extinguishing water separately. Do not allow contaminated water to reach sewage or effluent systems. Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.
Explosion hazard:	NA
Reactivity:	Combustion may yield carbon dioxide, carbon monoxide, nitrogen oxides, sulfur oxides, ammonia, or hydrogen chloride gas

SECTION 6: ACCIDENTAL RELEASE MEASURES

Emergency procedures/ Environmental precautions:	Collect the spillage. Prevent further spillage and product from entering waterways. Prevent the product or spilled material from entering water bodies. Wipe up spilled material and place in sealable waste container labelled for disposal. Wash down affected area with water and detergent. Absorb and collect washings and place in sealable waste container. Dispose of safely.
Personal precautions/ Protective equipment: Methods and materials for containment and cleaning up:	Slippery when spilt. Avoid accidents, clean up immediately. Wear protective equipment to prevent skin and eye contact and breathing in vapours. Ventilate spillage area. Contain - prevent run off into drains and waterways. Procedure for spill: (1) Keep all bystanders away (2) Wear full length clothing and PVC gloves (3) Reposition any leaking containers to minimise leakage (4) Sweep spilt material into a pile (5) Shovel into drums (6) Disposal of material will depend upon the extent of the spill: <ul style="list-style-type: none">• For quantities up to 50 kg of product bury in a secure landfill site.• For quantities greater than 50 kg seek advice from the manufacturer (use emergency contact number below) before attempting disposal. Contain in a secure location until disposal method is established. (7) Decontaminate spill area with detergent and water and rinse with the smallest volume of water practicable.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling:	No special measures necessary if stored and handled correctly. Keep containers closed at all times - check regularly for leaks or spills. Transport and store upright. Avoid skin and eye contact. Keep out of reach of children. Do not eat, drink, or smoke in contaminated areas. Always remove contaminated clothing and wash hands before eating, drinking, smoking, or using the toilet. Wash contaminated clothing and other protective equipment before storage or re-use.
Hygiene measures:	Remove Personal Protective Equipment (PPE) immediately after handling. Wash hands and other exposed areas with soap and water after handling before drinking, eating, smoking, or applying cosmetics and when leaving work.
Storage:	Store in the original container, in a cool dry well-ventilated, locked place out of the reach of children. DO NOT store in direct sunlight. DO NOT store at temperatures below 0°C or exceeding 35°C. Keep containers closed when not in use - check regularly for leaks.
Incompatible materials:	Acids, bases, oxidizing agents, reducing agents and disinfectants may inactivate.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Component exposure limits:	No occupational exposure limit values under normal use conditions.
Engineering controls:	Ensure adequate ventilation and maintain good industrial hygiene and safety practices.
Respiratory protection:	None is needed under adequate ventilation conditions.
Eye protection:	Wear approved safety glasses with side shields.
Skin protection:	Wear suitable protective clothing, wear protective nitrile, neoprene, or rubber protective gloves. Wash hands after use.
Other information:	Follow manufacturer's instructions for cleaning/maintaining PPE. Wear clothing appropriate to for all working conditions and all chemicals being handled. Do not eat, drink or smoke during use.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Amber liquid
Odour:	Minimal; yeasty, earthy
Odour threshold:	No data available
Physical state:	Liquid
ph as supplied:	5.0-10.0
Boiling point:	No data available
Melting point:	No data available
Freezing point:	No data available
Vapor pressure (mmHg):	No data available
Specific gravity (H₂O = 1):	1.0
Evaporation rate:	No data available
Solubility in water:	Dispersible in water
Decomposition temperature:	No data available
Density:	8.35 lbs/gal (Bottle Method)
Percent volatile:	No data available
Viscosity:	No data available
Flash point:	No data available
Auto-ignition temperature:	No data available
Lower explosion limit:	No data available
Upper explosion limit:	No data available
Explosivity:	No data available
Other information:	Further safety related physical-chemical data are not known.

SECTION 10: STABILITY AND REACTIVITY

Reactivity:	None under normal conditions.
Stability:	Stable under normal conditions Susceptible to extreme conditions and prolonged or excessive heat.
Conditions to avoid:	Prolonged or excessive heat and open flame, direct sunlight, and freezing.
Incompatibility (material/conditions to avoid):	Strong oxidizing agents, strong reducing agents, acids, bases, direct sunlight, nitrates.
Possibility of hazardous reactions:	No hazardous polymerization will occur.
Hazardous decomposition or by-products:	Hazardous oxides may form with decomposition. Under extreme conditions, irritating gases may form.

SECTION 11: TOXOLOGICAL INFORMATION

Acute toxicity:	No toxicity data for this specific product, however toxicity data for the hazardous ingredient is listed below.
Ingestion:	Available information indicates that it is not considered toxic by ingestion.
Inhalation:	Available information indicates that it is not considered an inhalation risk.
Skin corrosion/irritation:	Not considered a skin irritant.
Eye irritation:	Not considered a skin irritant.
Respiratory or skin sensitisation:	May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction.
Germ cell mutagenicity:	Not suspected to cause genetic defects.
Carcinogenicity:	Not considered to be carcinogenic
Reproductive:	Not considered to be toxic to reproduction.
Specific target organ toxicity:	Not expected to cause toxicity to specific target organ from single or repeat exposure.
Aspiration hazard:	Not expected to be an aspiration hazard.
Other information:	

SECTION 12: ECOLOGICAL INFORMATION

Ecological information:	Do not empty into drains.
Persistence and degradability:	Persistence is unlikely based on available information.
Bioaccumulative potential:	No additional information available.
Mobility in soil:	Likely to be mobile in the environment due to water solubility.
Other adverse effects:	No additional information available.

SECTION 13: DISPOSAL CONSIDERATIONS

Disposal method:	Triple rinse containers before disposal. Add rinsings to spray tank. DO NOT reuse this container for any other purpose. If recycling, replace cap and return clean containers to recycler or designated collection point. If not recycling, break, crush, or puncture and deliver to an approved waste management facility. If an approved waste management facility is not available bury the empty packaging 500 mm below the surface in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation, and tree roots. Do not burn empty containers or product. Do not dispose of undiluted chemicals on site. Dispose of this product only by using according to the label, or at an approved landfill. DO NOT contaminate water supply with chemical or empty container.
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SECTION 14: TRANSPORT INFORMATION

Road and Rail Transport:	Not classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for transport by Road and Rail; NON-DANGEROUS GOODS.
Marine Transport:	Not classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea; NON- DANGEROUS GOODS.
Air Transport:	Not classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air; NON- DANGEROUS GOODS.

SECTION 15: REGULATORY INFORMATION

AICIS Inventory:	All the constituents of this material are either listed on the Australian Inventory of Industrial Chemicals (Inventory), not required due to the nature of the chemical, or have been assessed under the Industrial Chemicals Act 2019 as amended.
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SECTION 16: OTHER INFORMATION

General Information:	None
Issue Number:	001
Issue Date:	17 March 2021
Key abbreviations or acronyms used:	ADG Code - Australian Code for the Transport of Dangerous Goods by Road and Rail (7th edition) AIIIC - Australian Inventory of Industrial Chemicals. Preparation of Safety Data Sheets for Hazardous Chemicals Code of Practice (December 2016) CAS – Chemical Abstracts Service. GHS – Globally Harmonized System.

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