1. PRODUCT IDENTIFIER and CHEMICAL IDENTITY

Product Name: **NutriMAX Guano Granules**

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Emergency Contact	LawrieCo Technical Manager: 0408 268 058	Poisons Information Centre: (Australia) 13 11 26

CAS Number	Mixture	Product Code	GUANOG

Product description, recommended use and restrictions on use: A naturally occurring fertiliser of mineral oxides, carbonates, silicates, and phosphates granulated to 2-4mm. Use in agriculture as a solid fertiliser applied by air seeders or spreaders. Only recommended use as a fertiliser in horticulture, viticulture, broadacre or turf applications.

2. HAZARD IDENTIFICATION

Classified as a Non-Hazardous Substance in accordance with Safe Work Australia - Hazardous Substances Information System (HSIS) Australia, Globally Harmonised System of Classification and Labelling of Chemicals (GHS) and Not a Scheduled Poison in accordance with the Standard for the Uniform Scheduling of Medicines and Poison (SUSMP).
Not Classified as Dangerous Goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG).

GHS Classification **Non-Hazardous**
SUSMP **Not Classified as a Scheduled Poison**
ADG **Not Classified as Dangerous Goods**

Precautionary Statements (GHS)

General
P101 If medical advice is needed, have the product container or label on hand
P102 Keep out of reach of children.
P103 Read label before use.
Prevention
P261 Avoid breathing dust.
P264 Wash skin thoroughly after handling.
Disposal
P501 Dispose of contents/container to an approved waste disposal plant.

Additional Non-GHS Hazard Statements
None

3. COMPOSITION / INFORMATION ON INGREDIENTS

Product name NutriMAX Guano Granules **CAS Number** Mixture **Product Code** GUANOG

Ingredients	***Name***	***CAS Number***	***Proportion w/w***
	Guano	Mixture	>95.0%
	Magnesium sulphate heptahydrate (epsomite)	10034-99-8	<3.0%
	Proprietary granule coating	Not applicable	<2.0%

4. FIRST AID MEASURES

Description of necessary first aid measures

Inhalation If applicator feels difficulty breathing, remove victim from exposure to fresh air. If not breathing apply artificial respiration. If breathing is difficult, give oxygen. Seek medical advice if effects persist

Ingestion Never give anything by mouth to an unconscious person. Rinse mouth out with water and give plenty of water to drink. Do NOT induce vomiting. Consult a doctor if any symptoms occur.

Eyes If in eyes, hold eye lids apart and flush continuously with running water. Remove contact lenses, if present and easy to do so. Continue flushing for at least 15 minutes. If eye irritation persists get medical advice/attention.

Skin and hair Wash hands thoroughly after use. If any skin or hair contact occurs wash thoroughly with water and soap. Consult a doctor if any skin irritation occurs.

First aid facilities Clean water supply, soap or skin cleaner and eyewash.

Advice to doctor If poisoning occurs, consult with the Poisons Information Centre (phone **13 11 26**). Have a copy of this safety data sheet or label available. Treat symptomatically.

Symptoms caused by exposure

May cause irritation of the mucous membranes, respiratory system, and eyes. Symptoms may include irritation, diarrhea, and vomiting.
For more information see section 11- Toxicological Information.

Medical attention and special treatment

Wash exposed skin and hair with water and soap. If swallowed give plenty of water. If in eyes flush continuously with running water for at least 15 minutes. Inhalation may aggravate asthma. If any symptoms occur get medical advice/attention. No special treatment required.

5. FIRE FIGHTING MEASURES

Suitable extinguishing equipment Appropriate extinguishing media include water, water spray, foam, dry chemical or carbon dioxide. Use suitable extinguishing agent for the surrounding fire. Product is a non-flammable granules.

Specific hazards arising from the chemical fire Combustion may produce irritants and toxic gases including - CO_x, PO_x, and SO_x. Do not breathe smoke or fumes. For more information see section 10- Stability and Reactivity.

Special protective equipment and precautions for fire fighters Fire fighters should wear a positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots and gloves).No HAZCHEM Code assigned.

Further information	Clear fire area of all non-emergency personnel. Stay upwind. Keep out of low areas. Eliminate ignition sources. Move fire exposed containers from fire area if it can be done without risk. Do NOT allow fire fighting water to reach waterways, drains or sewers. Store fire fighting water for treatment.
Flash Point	No data available
Lower Explosion Limit	No data available
Upper Explosion Limit	No data available
Auto Ignition Temperature	No data available
Hazchem Code	No Hazchem code assigned.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Product is non-hazardous. Avoid creating and breathing dust. For personal protection see section 8- Exposure Controls and Personal Protection.

Environmental precautions
Prevent product from entering waterways, sewage and drains. Collect all residues immediately. If product does enter a waterway, advise the Environmental Protection Authority or your local Waste Management. For any queries consult Local Statuary Authorities.

Methods and materials for containment and cleaning up
Unless contaminated, use spilled product as it's intended use as a fertiliser. Sweep up and shovel into suitable containers for reuse or store labelled in suitable, closed containers for the safety of persons conducting disposal, recycling or reclamation activities. For any queries consult the local council and/or state environment authorities.

7. HANDLING and STORAGE

Pecuations for safe handling	Avoid contact with eyes. Avoid breathing dust. Ensure eyewash and clean water available and ready for use. For personal protection see section 8- Exposure Controls and Personal Protection. Normal measures for preventative fire protection. Avoid spills. Handle in accordance with good industrial hygiene and safety practices. After use and before eating, drinking or smoking, remove contaminated clothing and wash hands before breaks and at the end of the work day. Keep out of reach of children.
Conditions of safe storage and incompatabilities	Containers must be clearly labelled. Store at room temperature. Keep container tightly closed out of direct sunlight. Inspect regularly for deficiencies such as damage or leaks. Protect against physical damage. Store away from incompatible materials as listed in section 10- Stability and Reactivity.
Specific end uses	Apart from uses mentioned in section 1- Product Identifier and Chemical Identity, no other specific uses are stipulated.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Occupational Exposure Standards

Exposure standards TWA (8 hour)	There are no assigned exposure standards for this product. TWA = No data available for this mixture, however the HSIS specifies 10mg/m3 (for inspirable dust) and 3mg/m3 (for respirable dust).
Exposure standards STEL (15 min)	There are no assigned exposure standards for this product. STEL = No data available for this mixture, however the HSIS specifies 10mg/m3 (for inspirable dust) and 3mg/m3 (for respirable dust).
Biological limited values	There are no known Biological Limited Values that have been assigned.
Engineering controls	Handle in accordance with good industrial hygiene and safety practices. Wash hands before breaks and at the end of the work day. Keep unused product in a sealed container. Reduce creation of dust. A system of local and/or general exhaust is recommended to keep employee exposures as low as possible.

Personal Protection

Inhalation ***AS –NZS 1715/1716***	If dust may be inhaled wear a class P1 or P2 particle respirator. Use respirators and components tested and approved under appropriate government standards.
Eye ***AS –NZS 1336/1337***	Safety glasses fitted with side shields should be worn at all times during the handling and application period. Do NOT wear contact lenses. Use equipment tested and approved under appropriate government standards.
Gloves ***AS –NZS 2161***	Not required but recommend handling with impervious gloves. Gloves must be inspected prior to use. Wash and dry hands after use.
Footwear ***AS –NZS 2210***	It is advisable to wear enclosed footwear during handling.
Clothing ***AS –NZS 3765***	It is advisable to wear protective clothing during handling.
Hearing	Hearing protection not required.
Other Requirements	The type of protective equipment must be selected according to the concentration and amount of substance at the specific workplace. Avoid unnecessary contact with eyes and after application, wash skin thoroughly with soap and water.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance *(physical state,colour, etc)*	Brown/grey granules
Odour	Odourless
Odour threshold	No data available
pH *(1:5 in water @ 20°C)*	8.3
Melting point	No data available
Freezing point	No data available
Boiling point and boiling range	No data available
Flash point	No data available
Evaporation rate	No data available
Flammability *(solid, gas)*	No data available
Upper/lower flammability or explosive limits	No data available
Vapour pressure	No data available
Vapour density	No data available
Relative Density	1.72 – 1.77
Solubility	Very slightly soluble in water
Partition coefficient: n-octonal/water	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity	No data available
Specific heat value	No data available
Saturated vapour concentration	No data available
Release of invisible flammable vapours and gases	No data available
Particle size *(average and range)*	average: 2-4mm range: 2-4mm >90%, 1-2mm ≤5%, <1mm ≤5%
Size Distribution	No data available
Shape and aspect ratio	No data available
Crystallinity	No data available
Dustiness	No data available
Surface area	No data available

Degree of aggregation or agglomeration, and dispersibility	No data available
Redox Potential	No data available
Biodurability or biopersistence	No data available
Surface coating or chemistry	No data available
Volatile organic compounds	No data available
% volatile	No data available

10. STABILITY AND REACTIVITY

Reactivity	No data available - recommend avoiding strong oxidisers.
Chemical stability	Stable under recommended storage conditions. Decomposes under high temperature.
Possibility of hazardous reactions	Will not polymerise.
Conditions to avoid	Avoid excessive temperatures (70^{O}C). Contact with incompatible materials.
Incompatible materials	Strong oxidising agents.
Hazardous decomposition products	In the event of combustion or high temperatures carbon oxides (CO_x), sulphur oxides (SO_x), and phosphorous oxides (PO_x) may be formed. In the event of fire see section 5-Fire Fighting Measures.

11. TOXICOLOGICAL INFORMATION

Ingredient: Guano	***Information Sources:*** No data available
Concentration	>95% by weight.
Acute oral toxicity	OECD Test Guidline 420, 423 or 425 No data available
Acute dermal toxicity	OECD Test Guidline 402 No data available
Acute inhalation toxicity	OECD Test Guidline 403, 436 No data available
Specific Target Organ Toxicity STOT - repeated exposure	No data available
Specific Target Organ Toxicity STOT - single exposure	No data available
Skin corrosion/irritation	May cause mild skin irritation.
Serious eye damage/irritation	May cause mild eye irritation
Respiratory or skin sensitisation	Not a skin sensitiser. Respiratory, no data available.
Germ cell mutagenicity	OECD Test Guideline 474 No data available
Carcinogenecity	Not identified as a probable, possible or confirmed human carcinogen by IARC. OECD Test Guideline 451 - no data available
Reproductive Toxicity	No data available
Aspiration hazard	No data available
Possible routes of exposure	Inhalation, eye contact and ingestion.
Signs and Symptoms of exposure	Irritation of the mucous membranes, respiratory system, and eyes.
Other information	Ingestion may cause diarhhea and vomiting.

To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated.

12. ECOLOGICAL INFORMATION

Ingredient	Guano
Ecotoxicity	No data available
Bioaccumulative potential	No data available
Persistence and degradability	Assessment biodegradation and elimination (H2O) No data available. Will likely persist in soil, but is a plant nutrient.
Mobility in soil	No data available. This product is very slightly soluble and unlikely to spread in soil.

Other adverse effects	Do NOT let reach product reach waterways, drains or sewers. The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. Fertilisers containing high phosphorous levels can stimulate weed and algal growth in static surface waters.

13. DISPOSAL CONSIDERATIONS

Physical/Chemical Properties that may affect disposal
Contains high levels of phosphorous fertiliser and must be kept out of biological systems other than its intended use as a fertiliser.
Disposal Containers and Methods
Empty containers may be suitable for reuse or recycling after cleaning and appropriate disposal of the cleaning agents. Disposal method dependent upon degree and nature of contaminated material. Handle and dispose of in compliance with current environmental waste legislation. If in doubt contact Local Statuary Authorities.
Effects of Sewage Disposal
Do NOT dispose of into sewage systems. Fertilisers containing high phosphorous levels can stimulate algal and bacterial growth.
Special Precautions for Incineration or Landfill
Incineration may produce toxic gases (CO_x, SO_x, and PO_x). Handle and dispose of in compliance with current environmental waste legislation. If in doubt contact local council and/or state environment authority. Offer surplus and non-recyclable material to a licensed disposal company.

14. TRANSPORT INFORMATION

UN number	Not required under ADG Code		
Proper shipping or technical name	NOT CONSIDERED DANGEROUS GOODS		
Transport hazard class	Not required under ADG Code	***Subsidiary risk***	Not required under ADG Code
Packing Group	Not required under ADG Code.		
Environmental hazards for transport purposes	Not a known marine pollutant according to IMDG Code. Not an Annexe I chemical according to MARPOL.		
Special precautions for user	No known special precautions for transportation. Containers must be clearly labelled, rigid and strong. Store in dry well ventilated place out of direct sunlight. Keep away from strong oxidising agents.		
Additional Information	No additional information required by overseas regulatory agencies or regulations for the transport of goods by other modes.		
HAZCHEM	Not required according to ADG Code.		
IMDG	Not required according to IMDG Code.		

15. REGULATORY INFORMATION

Hazard Category	The product is classified as a **Non-Hazardous Substance** in accordance with Safe Work Australia in accordance with Hazardous Substances Information System (HSIS) Australia and Global Harmonised System (GHS)

Montreal Protocol
Not an ozone depleting substance.
The Stockholm Convention
Not a persistent organic pollutant.
The Rotterdam Convention
Not a banned pesticide or industrial chemical.
Basal Convention
Not a hazardous waste.

International Convention for the Prevention of Pollution from Ships (MARPOL)
Not subject to Annexe III

Safety, health and environmental regulations	SUSMP Classification	Not Classified as a Schedule Poison.
	NICNAS	No data available

16. OTHER INFORMATION

This Safety Data Sheet conforms with the "PREPARATION OF SAFETY DATA SHEETS FOR HAZARDOUS CHEMICALS Code of Practice, DECEMBER 2011" by Safe Work Australia. To meet the GHS requirements under the WHS regulations in relation to the preparation of safety data sheets for hazardous chemicals.

SDS prepared 7th November, 2017 version number 1.

Legend of Abbreviations and Acronyms

HSIS - Hazardous Substances Information System
GHS - Globally Harmonised System
ADG - Australian Dangerous Goods Code for the Transport of Dangerous Goods by Road or Rail
IERG - Initial Emergency Response Guide
SDS - Safety Data Sheet
CAS Number - Chemical Abstract Service Number
< - Less than
> - Greater than
w/w - Weight per weight
AS/NZS - Australian Standards and New Zealand Standards
OEL - Occupational Exposure Limit
STEL - Short Term Exposure Limit
@ - at
pH - Potential of hydrogen
^{O}C - Degrees celcius
STOT - Specific Target Organ Toxicity
BCF - Bioconcentration Factor
MARPOL - International Convention for the Prevention of Pollution from Ships
IMDG - International Maritime Dangerous Goods
UN Number - United Nations Number
SUSMP - Standards for the Uniform Scheduling of Medicines and Poisons
LD_{50} - Median lethal dose, is the median dosage per unit bodyweight required to kill half the members of a tested population after a specified test duration
LD_{Lo} - Lethal dose low, is the lowest dosage per unit of bodyweight known to have resulted in a fatality in a particular animal species
LC_{50} - Median lethal concentration, is the median dosage per unit body weight required to kill half the members of a tested population after a specified test duration
EC_{50} - Half maximal effective concentration
mg/kg - Milligrams per kilogram
mg/L - Milligrams per litre
mg/m^3 - Milligrams per cubic metre
IARC - International Agency for Research on Cancer
OECD - Organisation for Economic Co-operation and development (guidelines for testing of chemicals)
% - Percent or percentage

Emergency Contact	Lawrie Co Technical Manager: 0408 268 058	Poisons Information Centre: (Australia) 13 11 26

Disclaimer *The data provided is to best of LAWRIE CO's knowledge and is believed to be accurate and reliable as of the date of issue. However no expressed or implied warranties are given. LAWRIE CO cannot anticipate or control the conditions under which this information may be used. Therefore, it is the user's responsibility to satisfy themselves as to the suitability and completeness of such information for their particular use. It is the responsibility of the user to ensure that the issue is current. This information given is a non-controlled document.*

Related Product Codes
GUANOG-25
GUANOG-1T
GUANOG-1.25T

Safety Data Sheet Revision

Issue Date:	7th November, 2017
Version No:	1
Revision Number:	Original version
Reason for Revision:	Not applicable
Preceding Versions:	Not applicable
Next Revision Due:	October, 2022

End of Safety Data Sheet