1. Identification of Substance & Company

Product

Product name	Organic Mycorrcin
Other names	no other names
Product codes	NA
HSNO approval	HSR002571
Approval description	Fertilisers (Subsidiary Hazard) Group Standard 2017
UN number	NA
DG class	NA
Proper Shipping Name	NA
Packaging group	NA
Hazchem code	NA
Uses	Soil mycorrhizal fungi activator

Company Details

Company	**Biostart LTD**	**Biostart Brands PTY Ltd**
Address	216 Lake Road Hauraki Auckland 0622 New Zealand	L1/109 Jessie St Armidale NSW 2350 Australia
Telephone	+64 9 488 0180	1800 359 555
Website	biostart.co.nz	Biostart.com.au

Emergency Telephone Number: 0800 764 766
Australian Emergency Number: 13 11 26

2. Hazard Identification

Approval in New Zealand

This product is an approved substance under the Hazardous Substances and New Organisms Act (HSNO, Approval HSR002571, Fertilisers (Subsidiary Hazard) Group Standard 2017): The substance has been classified as hazardous according to the criteria in the Hazardous substances (Minimum Degrees of Hazard) Notice 2017.

Classes	Hazard Statements
6.3B	H316 - Causes mild skin irritation.
6.4A	H320 - Causes eye irritation.

SYMBOLS

WARNING

Australian GHS Classification

Eye irritation cat 2	H320 - Causes eye irritation.

Precautionary Statements

P103 - Read label before use.
P264 - Wash hands thoroughly after handling.
P280 - Wear protective gloves/eye protection.
P332+P313 - If skin irritation occurs: Get medical advice/ attention.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313 - If eye irritation persists: Get medical advice/attention.

3. Composition / Information on Ingredients

Component	CAS/ Identification	Conc (%)
Nonviable fermentation products	proprietary	30-60%
Citric acid	77-92-9	1-10%
Potassium sulfate	7778-80-5	1-10%
Ingredients not contributing to HSNO classes	Mixture	1-10%
Water	7732-18-5	balance

This is a commercial product whose exact ratio of components may vary. Trace quantities of impurities are also likely.

4. First Aid

General Information

If medical advice is needed, have product container or label at hand. You should call the National Poisons Centre if you feel that you may have been harmed or irritated by this product. The number is 0800 764 766 (0800 POISON) (24 hr emergency service) – New Zealand or 13 1126 (24 hr emergency service) – Australia.

Recommended first aid facilities Ready access to running water is required. Accessible eyewash is required.

Exposure

Swallowed Do NOT induce vomiting. Give a glass of water to drink. Contact a doctor if experiencing any symptoms.

Eye contact If product gets in eyes, wash material from them with running water for several minutes. If symptoms persist, seek medical advice.

Skin contact Flush immediately with large amounts of water. Remove all contaminated clothing. If skin irritation occurs: Get medical advice/ attention.

Inhaled Generally, inhalation of fumes is unlikely to result in adverse health effects. If coughing, dizziness or shortness of breath is experienced, remove the patient to fresh air immediately. If patient is unconscious, place in the recovery position (on the side) for transport and contact a doctor.

Advice to Doctor

Treat symptomatically

5. Firefighting Measures

Fire and explosion hazards: There are no specific risks for fire/explosion for this chemical. It is non-flammable.

Suitable extinguishing substances: Carbon dioxide, extinguishing powder or water jet. Fight larger fires with water jet or alcohol resistant foam.

Unsuitable extinguishing substances: Unknown.

Products of combustion: Carbon dioxide, and if combustion is incomplete, carbon monoxide and smoke. Water. May form toxic mixtures in air and may accumulate in sumps, pits and other low-lying spaces, forming potentially explosive mixtures.

Protective equipment: No special measures are required.

Hazchem code: NA

6. Accidental Release Measures

Containment There is no current legal requirement for containment of this product. In all cases design storage to prevent discharge to storm water.

Emergency procedures If a significant spill occurs:
Stop leak if safe/necessary; Isolate area. Collect spill – see below; Transfer to container for disposal. Dispose of according to guidelines below (Section 13).

Clean-up method Use absorbent (soil, sand or other inert material). Collect and seal in properly labelled containers or drums for disposal. If contamination of crops, sewers or waterways has occurred advise local emergency services.

Disposal Mop up and collect recoverable material into labelled containers for recycling or salvage. Recycle containers wherever possible. This material may be suitable for approved landfill. Dispose of only in accord with all regulations.

Precautions No special protective clothing is normally necessary.

7. Storage & Handling

Storage Avoid storage of harmful substances with food. Store out of reach of children. Containers should be kept closed in order to minimise contamination. Keep from extreme heat and open flames. Avoid contact with incompatible substances as listed in Section 10.

Handling Keep exposure to a minimum, and minimise the quantities kept in work areas. See section 8 with regard to personal protective equipment requirements.

8. Exposure Controls / Personal Protective Equipment

Workplace Exposure Standards

A workplace exposure standard (WES) has not been established by WorkSafe NZ for this product. There is a general limit of 3mg/m^3 for respirable particulates and 10mg/m^3 for inhalable particulates when limits have not otherwise been established.

NZ Workplace Exposure Stds (2016)	Ingredient	WES-TWA*	WES-STEL
	No ingredients listed		

Exposure Standards - Australia

Australian Exposure Standards	Ingredient	ES-TWA	ES-STEL
	No ingredients listed		

Engineering Controls

In industrial situations, it is expected that employee exposure to hazardous substances will be controlled to a level as far below the WES as practicable by applying the hierarchy of control required by the Health and Safety at Work Act (2015) and the Health and Safety at Work (General Risk and Workplace Management) Regulations 2016. Exposure can be reduced by process modification, use of local exhaust ventilation, capturing substances at the source, or other methods. If you believe air borne concentrations of mists, dusts or vapours are high, you are advised to modify processes or increase ventilation.

Personal Protective Equipment

Eyes  Avoid contact with eyes. Use safety glasses and or chemical splash goggles if splashes are possible. Select eye protection in accordance with AS/NZS 1337.

Skin If discomfort is felt (e.g., if pre-existing conditions exist, such as dermatitis, cuts or sensitive skin), gloves may be helpful. If you suffer from dermatitis type skin conditions, use gloves. Nitrile gloves are recommended. Protective gloves or suitably resistant material must comply with AS 2161. Replace frequently. Gloves should be checked for tears or holes before use.

Respiratory Respirator is not required under normal use. Ensure adequate natural ventilation. If product is being used in confined conditions, the use of a mask or respirator may be preferred.

WES Additional Information

Not applicable

9. Physical & Chemical Properties

Appearance	brown liquid
Odour	mild characteristic odour
pH	3.8-4.0
Vapour pressure	no data
Viscosity	no data
Boiling point	100°C
Volatile materials	no data
Freezing / melting point	no data
Solubility	completely soluble in water
Specific gravity / density	1.05-1.07
Flash point	no data
Danger of explosion	not explosive
Auto-ignition temperature	no data
Upper & lower flammable limits	no data
Corrosiveness	non corrosive

10. Stability & Reactivity

Stability	Stable
Conditions to be avoided	Containers should be kept closed in order to avoid contamination. Keep from extreme heat and open flames.
Incompatible groups	Strong acids and bases, oxidisers.
Substance Specific Incompatibility	none known
Hazardous decomposition products	Oxides of carbon, sulphur
Hazardous reactions	none known

11. Toxicological Information

Summary

IF SWALLOWED: may cause gastrointestinal irritation.
IF IN EYES: may be irritating to the eye.
IF ON SKIN: may cause mild skin irritation.
IF INHALED: no effect known.

Supporting Data

Acute	**Oral**	Using LD_{50}'s for ingredients, the calculated LD_{50} (oral, rat) for the mixture is >5,000 mg/kg. Data considered includes: Citric acid 5040mg/kg (mouse), 3000mg/kg (rat).
	Dermal	No evidence of dermal toxicity.
	Inhaled	No evidence of inhalation toxicity.
	Eye	The mixture is considered to be an eye irritant.
	Skin	The mixture is considered to be a mild skin irritant.
Chronic	**Sensitisation**	No ingredient present at concentrations > 0.1% is considered a sensitizer.
	Mutagenicity	No ingredient present at concentrations > 0.1% is considered a mutagen.
	Carcinogenicity	No ingredient present at concentrations > 0.1% is considered a carcinogen.
	Reproductive / Developmental	No ingredient present at concentrations > 0.1% is considered a reproductive or developmental toxicant or have any effects on or via lactation.
	Systemic	No ingredient present at concentrations > 1% is considered a target organ toxicant.
	Aggravation of existing conditions	None known.

12. Ecological Data

Summary

This mixture is not considered ecotoxic.

Supporting Data

Aquatic	Using EC_{50}'s for ingredients, the calculated EC_{50} for the mixture is > 100 mg/L. Data considered includes: Citric acid 1516mg/L (96hr, fish), >440-760 mg/L (96hr, fish), ~120mg/l (72hr, Daphnia magna), , potassium sulfate >100mg/L.
Bioaccumulation	No data
Degradability	No data
Soil	No evidence of soil toxicity.
Terrestrial vertebrate	See acute toxicity.
Terrestrial invertebrate	No evidence of toxicity towards terrestrial invertebrates.
Biocidal	no data
Environmental effect levels	No data

13. Disposal Considerations

Restrictions	There are no product-specific restrictions, however, local council, resource consent and state disposal conditions may apply, including requirements of trade waste consents.
Disposal method	Disposal of this product must comply with the Hazardous Substances (Disposal) Notice 2017 and the requirements of the Resource Management Act for which approval should be sought from the Regional Authority. The substance must be treated and therefore rendered non-hazardous before discharge to the environment.
Contaminated packaging	Disposal of contaminated packaging must comply with the Hazardous Substances (Disposal) Notice 2017 clause 12. Ensure that the package is rendered incapable of containing any substance and is disposed in a manner that is consistent with the requirements of the substance it contained and the material of the package. If possible reuse or recycle packaging.

14. Transport Information

There are no specific restrictions for this product (not a dangerous good).

UN number:	NA	**Proper shipping name:**	NA
Class(es)	NA	**Packing group:**	NA
Precautions:	NA	**Hazchem code:**	NA

15. Regulatory Information

This product is an approved substance under the Hazardous Substances and New Organisms Act (HSNO). Approval code: HSR002571, Fertilisers (Subsidiary Hazard) Group Standard 2017.
All ingredients appear on the NZIoC.

Specific Controls

Key workplace requirements are:	
SDS	To be available within 10 minutes in workplaces storing any quantity.
Inventory	An inventory of all hazardous substances must be prepared and maintained.
Packaging	All hazardous substances should be appropriately packaged including substances that have been decanted, transferred or manufactured for own use or have been supplied
Labelling	Must comply with the Hazardous Substances (Labelling) Notice 2017.
Emergency plan	Not required.
Certified handler	Not required.
Tracking	Not required.
Bunding & secondary containment	Not required.
Signage	Not required.
Location compliance certificate	Not required.
Flammable zone	Not required.
Fire extinguisher	Not required.

Note: The above workplace requirements apply if only this particular substance is present. The complete set of controls for a location will depend on the classification and total quantities of other substances present in that location.

Other Legislation

In New Zealand, the use of this product may come under the Resource Management Act and Regulations, the Health and Safety at Work Act 2015 and the Health and Safety at Work (General Risk and Workplace Management) Regulations 2016, local Council Rules and Regional Council Plans.

Australian regulations

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP)	Not scheduled
Applicable prohibitions and notifications/licensing requirements	Not listed
Agricultural and Veterinary Chemicals Act	Not listed
Listing in the Australian Inventory of Chemical Substances (AICS)	Citric acid - IMAP - Tier II - Human Health Potassium sulphate - IMAP - Tier I - Human Health
Additional information	Not applicable

16. Other Information

Abbreviations

Approval Code	Approval HSR002571, Fertilisers (Subsidiary Hazard) Group Standard 2017 Controls, EPA. www.epa.govt.nz
AICS	Australian Inventory of Chemical Substances
CAS Number	Unique Chemical Abstracts Service Registry Number
Ceiling	Ceiling Exposure Value: The maximum airborne concentration of a biological or chemical agent to which a worker may be exposed at any time.
Controls Matrix	List of default controls linking regulation numbers to Matrix code (e.g. T1, I16).
EC_{50}	Ecotoxic Concentration 50% – concentration in water which is fatal to 50% of a test population (e.g. daphnia, fish species)
ES	Exposure Standard - The airborne concentration of a biological or chemical agent to which a worker may be exposed in a work day.
EPA	Environmental Protection Authority (New Zealand)
GHS	Globally Harmonised System of Classification and Labelling of Chemicals
HAZCHEM Code	Emergency action code of numbers and letters that provide information to emergency services, especially fire fighters
HSNO	Hazardous Substances and New Organisms (Act and Regulations)
IARC	International Agency for Research on Cancer
LEL/UEL	Lower Explosive Limit/ Upper Explosive Limit
LD_{50}	Lethal Dose 50% – dose which is fatal to 50% of a test population (usually rats).
LC_{50}	Lethal Concentration 50% – concentration in air which is fatal to 50% of a test population (usually rats)
MSDS (SDS)	Material Safety Data Sheet (or Safety Data Sheet)
NICNAS	National Industrial Chemicals Notification and Assessment Scheme
NZIoC	New Zealand Inventory of Chemicals
STEL	Short Term Exposure Limit - The maximum airborne concentration of a chemical or biological agent to which a worker may be exposed in any 15 minute period, provided the TWA is not exceeded
TWA	Time Weighted Average – generally referred to WES averaged over typical work day (usually 8 hours)
UN Number	United Nations Number
WES	Workplace Exposure Standard - The airborne concentration of a biological or chemical agent to which a worker may be exposed during work hours (usually 8 hours, 5 days a week). The WES relates to exposure that has been measured by personal monitoring using procedures that gather air samples in the worker's breathing zone.

References

Data	Unless otherwise stated comes from the EPA HSNO chemical classification information database (CCID).
Controls	EPA notices, www.epa.govt.nz, Health and Safety at Work (Hazardous Substances) Regulations 2017, www.legislation.govt.nz
WES	The latest NZ Workplace Exposure Standards, published by WorkSafe NZ and available on their web site – www.worksafe.govt.nz.
ES	Workplace Exposure standards for airborne contaminants – Safework Australia.
Other References:	Suppliers SDS, EU ECHA, ingredients SDS's, ChemIDplus

Review

Date	**Reason for review**
June 2019	Not applicable – new SDS
January 2020	Review of approval

Disclaimer