## 1. Identification of Substance & Company

### Product

| | |
|---|---|
| **Product name** | Agrifert MicroNix 12 |
| **Product code** | SOIL-0226 |
| **HSNO approval** | HSR002512 |
| **Approval description** | Additives, Process Chemicals and Raw Materials (Carcinogenic) Group Standard 2020 |
| **UN number** | NA |
| **Proper Shipping Name** | NA |
| **DG Class** | NA |
| **Packaging group** | NA |
| **Hazchem code** | NA |
| **Uses** | Additive |

### Company Details

| | |
|---|---|
| **Company** | **Blue Pacific Minerals** |
| **Address** | 11-17 Huttloc Drive,<br>Tokoroa<br>3420<br>New Zealand |
| **Website** | www.bpmnz.co.nz |
| **Telephone** | +64 7 885 0550 |
| **Email** | info@bpmnz.co.nz |

**Emergency Telephone Number: 0800 678 444**

## 2. Hazard Identification

### Approval

This product has been approved under the Hazardous Substances and New Organisms Act (HSNO, Approval HSR002512, Additives, Process Chemicals and Raw Materials (Carcinogenic) Group Standard 2020). The substance has been classified as hazardous according to the criteria in the Hazardous substances (Hazard Classification) Notice 2020:

| GHS 7 Classes | Hazard Statements |
|---|---|
| Eye irritant category 2 | H319 - Causes serious eye irritation. |
| Respiratory sensitiser category 1 | H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled. |
| Skin sensitiser category 1 | H317 - May cause an allergic skin reaction. |
| Carcinogen category 2 | H341 - Suspected of causing cancer. |
| Reproductive toxicity category 2 | H361 - Suspected of damaging fertility or the unborn child. |
| STOT* repeated exposure category 2 | H373 - May cause damage to organs through prolonged or repeated exposure. |

*STOT – system target organ toxicity

**SYMBOLS**

**DANGER**

### Other Classifications

There are no other classifications that are known to apply.

### Precautionary Statements

| | |
|---|---|
| **Prevention** | P103 - Read label before use.<br>P201 - Obtain special instructions before use.<br>P202 - Do not handle until all safety precautions have been read and understood.<br>P260 - Do not breathe vapours.<br>P264 - Wash hands thoroughly after handling.<br>P270 - Do not eat, drink or smoke when using this product.<br>P271 - Use only outdoors or in a well-ventilated area.<br>P272 - Contaminated work clothing should not be allowed out of the workplace.<br>P273 - Avoid release to the environment.<br>P280 - Wear protective gloves/protective clothing/eye protection/face protection.<br>P285 - In case of inadequate ventilation wear respiratory protection. |
| **Response** | P304+P341 - IF INHALED: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing.<br>P342+P311 - If experiencing respiratory symptoms: Call a POISON CENTRE or doctor/physician.<br>P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.<br>P337+P313 - If eye irritation persists: Get medical advice/attention.<br>P302+P352 - IF ON SKIN: Wash with plenty of soap and water.<br>P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.<br>P363 - Wash contaminated clothing before reuse.<br>P308+P313 - IF exposed or concerned: Get medical advice/ attention. |
| **Storage** | P403+P233 - Store in a well-ventilated place. Keep container tightly closed.<br>P405 - Store locked up. |
| **Disposal** | P501 - Dispose of contents/container in accordance with local/regional/national/international regulation. |

## 3. Composition / Information on Ingredients

| Component | CAS/ Identification | Concentration |
|---|---|---|
| Boric acid | 10043-35-3 | 1-10% |
| Disodium Copper edetate | 14025-15-1 | 1-10% |
| Disodium Cobalt edetate | 15137-09-4 | 0.1-1% |
| Sulfuric acid, nickel(2+) salt (1:1), hexahydrate | 10101-97-0 | 0.1-≤1% |
| Ingredients not contributing to GHS 7 classes, includes Mg, Ca, Zn, Fe, Mo, Mn, Se and Iodine | 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).

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

### Exposure

**Swallowed** IF SWALLOWED: Call a POISON CENTRE or doctor/physician if you feel unwell. Rinse mouth. Do NOT induce vomiting. Give a glass of water to drink.

**Eye contact** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

**Skin contact** This product is non-irritating to skin. No further measures should be required.

**Inhaled** IF INHALED: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTRE or doctor/physician.

### 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:** | Self-contained breathing apparatus. Safety boots, non-flammable overalls, gloves, hat and eye protection. |
| **Hazchem code:** | NA |

## 6. Accidental Release Measures

| | |
|---|---|
| **Containment** | If greater than 1000L is stored, secondary containment and emergency plans to manage any potential spills must be in place. In all cases design storage to prevent discharge to storm water. |
| **Emergency procedures** | In the event of spillage alert the fire brigade to location and give brief description of hazard. Stop the source of the leak, if safe to do so. Wear protective equipment to prevent skin, eye and respiratory exposure. Clear area of any unprotected personnel. Contain using sand, earth or vermiculite. Prevent by whatever means possible any spillage from entering drains, sewers, or water courses. (If this occurs contact your regional council immediately). |
| **Clean-up method** | Use absorbent (soil, sand or other inert material). Rags are not recommended for the clean-up of spills, as they may create fire or environmental hazard. 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** | Wear protective equipment to prevent skin and eye contamination and the inhalation of vapours. Work up wind or increase ventilation. |

## 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. Avoid skin and eye contact and inhalation of vapour, mist or aerosols. |

## 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 | Ingredient | WES-TWA | WES-STEL |
|---|---|---|---|
| | Disodium Cobalt edetate | 0.02mg/m$^3$ (as Co) | Not established |
| | Boric acid | Not established | Not established |
| | Disodium Copper edetate | 0.01 mg/m$^3$ (as Cu) (respirable) | Not established |
| | Iron EDTA | 1mg/m$^3$ as Fe | Not established |
| | Sodium molybdate | 5mg/m$^3$ (as Mo) | Not established |
| | Sodium selenate | 0.1mg/m$^3$ (Se) | Not established |
| | Ethylenediamine dihydriodide | Not established | Not established |
| | Nickel sulphate as Ni | 0.005mg/m$^3$ (respirable, carc 2, sen) | Not established |
| | Manganese compounds as Mn | 0.02mg/m$^3$ (respirable, oto) | |

### 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

**General**

Personal Protective Equipment (PPE) should not be used as the primary means of exposure protection, except in the event of an accident or emergency situation or where all other means of protection have proven to inadequate.
Clean PPE after use or dispose of as appropriate. Store PPE for re-use in a clean place. Regular training on the correct use of PPE should be provided. In particular the correct fitting and use of respirators and where applicable the cleaning of respirators should be undertaken.

**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**

Avoid any skin contact. Wear overalls, rubber boots and impervious gloves. Nitrile or PVC 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. Protective clothing must comply with AS 2919, AS3765.1 or AS3765.2. PVC or rubber boots must comply with AS/NZS 2210.2 and selected and maintained in accordance with AS/NS2210.1. Remove protective clothing and wash exposed areas with soap and water prior to eating, drinking or smoking.

**Respiratory**

A respirator when airborne concentrations approach the WES (section 8). Respirators must have filters appropriate to the duty and comply with AS/NZS1716 and selected, used and maintained in accordance with AS/NS 1715. Use a respirator with a dust/mist filter. If using a respirator, ensure that the cartridges are correct for the potential air contamination and are in good working order. Fit testing and clear guidelines and training for use and maintenance of PPE are necessary.

### WES Additional Information

Not applicable

## 9. Physical & Chemical Properties

| | |
|---|---|
| **Appearance** | liquid |
| **Odour** | not specified |
| **Odour Threshold** | no data |
| **pH** | no data |
| **Freezing/melting point** | no data |
| **Boiling Point** | no data |
| **Flashpoint** | not flammable |
| **Flammability** | not flammable |
| **Upper & lower flammable limits** | no LEL or UEL |
| **Vapour pressure** | no data |
| **Vapour density** | no data |
| **Specific gravity/density** | 1.091 |
| **Solubility** | soluble in water |
| **Partition coefficient** | no data |
| **Auto-ignition temperature** | no data |
| **Decomposition temperature** | no data |
| **Viscosity** | no data |
| **Particle Characteristics** | no data |

## 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** | Oxidising agents |
| **Substance Specific Incompatibility** | none known |
| **Hazardous decomposition products** | Combustion products: Carbon oxides, Nitrogen oxides, Cobalt and Sodium oxides. |
| **Hazardous reactions** | none known |

## 11. Toxicological Information

### Summary

IF IN EYES: may cause eye irritation.
IF ON SKIN: sensitised individuals may experience an allergic skin reaction.
IF INHALED: dusts/mist may cause respiratory irritation. Sensitised individuals may cause breathing difficulties if inhaled.
CHRONIC TOXICITY: Cobalt and cobalt compounds are possible carcinogenic to humans (IARC Group 2B). Cobalt and cobalt compounds are considered suspected developmental toxicants.

### Supporting Data

| | | |
|---|---|---|
| **Acute** | **Oral** | Using $LD_{50}$'s for ingredients, the Acute Toxicity Estimate (ATE) (oral) for the mixture is >2,000 mg/kg. |
| | **Dermal** | Using $LD_{50}$'s for ingredients, the Acute Toxicity Estimate (ATE) (dermal) for the mixture is >2,000 mg/kg. |
| | **Inhaled** | Using $LD_{50}$'s for ingredients, the Acute Toxicity Estimate (ATE) (inhalation) for the mixture is >5mg/L/4h. |
| | **Eye** | The mixture is considered to be an eye irritant, because some of the ingredients (Boric acid, disodium copper edetate, Disodium Cobalt edetate) present are considered eye irritants in more concentrated form. |
| | **Skin** | The mixture is not considered to be a skin irritant. |
| **Chronic** | **Sensitisation** | The mixture is considered to be a contact and respiratory sensitizer, because at least cobalt and cobalt compounds are known to be contact and respiratory sensitizers. Copper compounds are considered contact sensitisers. |
| | **Mutagenicity** | No ingredient present at concentrations > 0.1% is considered a mutagen. |
| | **Carcinogenicity** | The mixture is considered to be a suspected carcinogen. Nickel, Cobalt and cobalt compounds are possible carcinogenic to humans (IARC Group 2B). |
| | **Reproductive / Developmental** | Cobalt and cobalt compounds are considered suspected developmental toxicants (Embryotoxic, reduced pup weight), boric acid is classed as reproductive toxicant cat 2. |
| | **Systemic** | The mixture is considered to be a suspected target organ toxicant. (Disodium Copper edetate) |
| | **Aggravation of existing conditions** | None known. |

## 12. Ecological Data

### Summary

This mixture is not considered ecotoxic to aquatic life with long lasting effects. In all cases prevent run-off to drains, sewers and waterways.

### Supporting Data

| | |
|---|---|
| **Aquatic** | Using EC50's for ingredients, the calculated EC50 for the mixture is > 1mg/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 EELs are available for this mixture or ingredients |

## 13. Disposal Considerations

| | |
|---|---|
| **Restrictions** | There are no product-specific restrictions, however, local council and resource consent 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

**Land Transport Rule: Dangerous Goods 2005 - NZS 5433:2007**
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 |

**IMDG**

| | | | |
|---|---|---|---|
| **UN number:** | NA | **Proper shipping name:** | Not regulated |
| **Class(es)** | NA | **Packing group:** | NA |
| **Precautions:** | NA | **EmS** | NA |

**IATA**

| | | | |
|---|---|---|---|
| **UN number:** | NA | **Proper shipping name:** | Not regulated |
| **Class(es)** | NA | **Packing group:** | NA |
| **Precautions:** | NA | **ERG Guide** | NA |

## 15. Regulatory Information

This product is an approved substance under the Hazardous Substances and New Organisms Act (HSNO). Approval code: HSR002512, Additives, Process Chemicals and Raw Materials (Carcinogenic) Group Standard 2020. All ingredients appear on the New Zealand Inventory of Chemicals 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 | Required if > 1000L is stored. |
| Certified handler | Not required. |
| Tracking | Not required. |
| Bunding & secondary containment | Required if > 1000L is stored. |
| Signage | Required if > 1000L is stored. |
| 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.

## 16. Other Information

### Abbreviations

| | |
|---|---|
| **Approval Code** | Approval HSR002512, Additives, Process Chemicals and Raw Materials (Carcinogenic) Group Standard 2020 Controls, EPA. www.epa.govt.nz |
| **CAS Number** | Unique Chemical Abstracts Service Registry Number |
| **$EC_{50}$** | Ecotoxic Concentration 50% – concentration in water which is fatal to 50% of a test population (e.g. daphnia, fish species) |
| **EPA** | Environmental Protection Authority (New Zealand) |
| **GHS** | Globally Harmonised System of Classification and Labelling of Chemicals, 7th revised edition, 2017, published by the United Nations. |
| **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** | Lower 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) |
| **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 |
| **STOT RE** | System Target Organ Toxicity – Repeated Exposure |
| **STOT SE** | System Target Organ Toxicity – Single Exposure |
| **TWA** | Time Weighted Average – generally referred to WES averaged over typical work day (usually 8 hours) |
| **UEL** | Upper Explosive Limit |
| **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. |
| **Other References:** | Suppliers SDS |

### Review

| **Date** | **Reason for review** |
|---|---|
| February 2025 | Not applicable – new SDS |

### Disclaimer