Cyan

HAZARDOUS, DANGEROUS GOODS

1. MATERIAL AND SUPPLY COMPANY IDENTIFICATION

Product name: Cyan

Recommended use: Plant growth regulator for increased budbreak and flowering of kiwifruit and flower synchronisation of apples.

Supplier: Grochem (AgriNova New Zealand Limited)

Company No.: 9429036821501

Street Address: 15 Sunlight Grove
Porirua
New Zealand

Telephone: +64 4 237 0905

Facsimile: +64 4 237 0906

Email: grochem@grochem.com

Emergency telephone: New Zealand
0800 CHEMCALL – 24 hours
(0800 243 6225)

Australia 1800 127 406
Other locations +64 4 917 9888

or
The National Poisons Centre
0800 POISON (0800 764 766)

2. HAZARDS IDENTIFICATION

This material is hazardous according to the criteria of EPA New Zealand GHS 7.

HSNO Approval Code: HRC000001

Signal Word: Danger

Hazard Classifications:
Acute Toxicity - Oral - Category 3
Acute Toxicity - Dermal - Category 4
Acute Toxicity - Inhalation - Category 4
Skin Corrosion/Irritation - Category 2
Serious Eye Damage/Irritation - Category 2
Sensitisation - Skin - Category 1
Toxic to Reproduction - Category 2
Specific Target Organ Toxicity following Repeated Exposure - Category 1
Long Term Hazards to the Aquatic Environment - Category 3
Hazardous to Terrestrial Vertebrates
Hazardous to Terrestrial Invertebrates

Hazard Statements:

H301 - Toxic if swallowed.
H312 - Harmful in contact with skin.
H315 - Causes skin irritation.
H317 - May cause an allergic skin reaction.
H319 - Causes serious eye irritation.
H332 - Harmful if inhaled.
H361 - Suspected of damaging fertility or the unborn child.
H372 - Causes damage to organs through prolonged or repeated exposure.
H412 - Harmful to aquatic life with long lasting effects.
H433 - Harmful to terrestrial vertebrates.
H443 - Harmful to terrestrial invertebrates.

Prevention Precautionary Statements:

P102 - Keep out of reach of children.
P103 - Read carefully and follow all instructions.
P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P260 - Do not breathe dust, fume, gas, mist, vapours or spray.
P264 - Wash hands, face and all exposed skin thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P271 - Use only outdoors or in a well-ventilated area.
P272 - Contaminated work clothing should not be allowed out of the workplace.
P273 - Avoid release to the environment.
P281 - Use personal protective equipment as required.

Response Precautionary Statements:

P101 - If medical advice is needed, have product container or label at hand.
P301+P310 - IF SWALLOWED: Immediately call a POISON CENTER/doctor.
P302+P352 - IF ON SKIN: Wash with plenty of water and soap.
P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P314 - Get medical advice/attention if you feel unwell.
P330 - Rinse mouth.
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.
P337+P313 - If eye irritation persists: Get medical advice/attention.
P362 - Take off contaminated clothing.
P363 - Wash contaminated clothing before reuse.

Storage Precautionary Statement: P405 - Store locked up.

Disposal Precautionary Statement: P501 - Dispose of contents/container in accordance with local, regional, national and international regulations.

DANGEROUS GOOD CLASSIFICATION: Classified as Dangerous Goods by the criteria of the "New Zealand NZS5433: Transport of Dangerous Goods on Land". - what about the Australian criteria that is usually included?

Dangerous Goods Class: 6.1

3. COMPOSITION INFORMATION

CHEMICAL ENTITY	CAS NO	PROPORTION
Cyanamide	420-04-2	>60 % (w/w)
Phosphoric acid	7664-38-2	to acidify %
Ingredients determined to be Non-Hazardous		Balance
		100%

4. FIRST AID MEASURES

If poisoning occurs, contact a doctor or Poisons Information Centre (Phone Australia 131 126, New Zealand 0800 764 766).

Inhalation: Remove victim from exposure - avoid becoming a casualty. Remove contaminated clothing and loosen remaining clothing. Allow patient to assume most comfortable position and keep warm. Keep at rest until fully recovered. If breathing laboured and patient cyanotic (blue), ensure airways are clear and have a qualified person give oxygen through a facemask. If breathing has stopped apply artificial respiration at once. In the event of cardiac arrest, apply external cardiac massage. Seek immediate medical advice.

Skin Contact:	Effects may be delayed. This material, or a component of the material, can be absorbed through the skin with resultant toxic effects. If skin or hair contact occurs, immediately remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre or a Doctor; or for 15 minutes and transport to Doctor or Hospital.
Eye contact:	If in eyes, hold eyelids apart and flush the eyes continuously with running water. Continue flushing until advised to stop by the Poisons Information Centre or a Doctor; or for at least 15 minutes and transport to Doctor or Hospital.
Ingestion:	Immediately rinse mouth with water. If swallowed, do NOT induce vomiting. Give a glass of water to drink. Never give anything by the mouth to an unconscious patient. If vomiting occurs give further water. Immediately call Poisons Centre or Doctor. Transport to a doctor or hospital quickly.
PPE for First Aiders:	Wear rubber boots, overalls, gloves, face shield, respirator. Use with adequate ventilation. If inhalation risk exists wear organic vapour/particulate respirator meeting the requirements of AS/NZS 1715 and AS/NZS 1716. Available information suggests that gloves made from nitrile rubber should be suitable for intermittent contact. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storing or re-using.
Notes to physician:	Treat symptomatically. Effects may be delayed.

5. FIRE FIGHTING MEASURES

Hazchem Code:	2X
Suitable extinguishing media:	If material is involved in a fire use water fog (or if unavailable fine water spray), alcohol resistant foam, standard foam, dry agent (carbon dioxide, dry chemical powder).
Specific hazards:	Non-combustible material.
Firefighting further advice:	Not applicable.

6. ACCIDENTAL RELEASE MEASURES

SMALL SPILLS:	Wear protective equipment to prevent skin and eye contamination. Avoid inhalation of vapours or dust. Wipe up with absorbent (clean rag or paper towels). Collect and seal in properly labelled containers or drums for disposal.
LARGE SPILLS:	Clear area of all unprotected personnel. Slippery when spilt. Avoid accidents, clean up immediately. Wear protective equipment to prevent skin and eye contamination and the inhalation of vapours. Work up wind or increase ventilation. Contain - prevent run off into drains and waterways. 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.

Dangerous Goods - Initial Emergency Response Guide No:
36

7. HANDLING AND STORAGE

Handling:	Do not handle until all safety precautions have been read and understood. Do not breathe mist/spray. Use only outdoors or in a well-ventilated area. Do not eat, drink or smoke when using this product. Wash hands and face thoroughly after use and before work breaks, eating, drinking, smoking and using the toilet. Do not drink alcohol for 24 hours before and up to 7 days after using Cyan.
Storage:	Store in a cool, dry, well-ventilated place and out of direct sunlight. Store away from foodstuffs. Store away from incompatible materials described in Section 10. Store away from sources of heat and/or ignition. Store locked up. Keep container standing upright. Keep containers closed when not in use - check regularly for leaks.

This material is classified as a class 6.1 Toxic Substance as per the criteria of the "New Zealand NZS5433: Transport of Dangerous Goods on Land" and must be stored in accordance with the relevant regulations.

Recommendations for consumer use: Do not allow animals to come into contact with spray mist or tank washings. Dogs are sensitive to Cyan poisoning and must be removed from the spraying operation. Non-grazing animals should not be exposed to residues on grass for 3 days. Grazing animals should not be exposed to residues on grass for 7 days.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

National occupational exposure limits:

	TWA		STEL		NOTICES
	ppm	mg/m3	ppm	mg/m3	
Cyanamide		2			
Phosphoric acid		1			

As published by WorkSafe New Zealand.

WES-TWA (Workplace Exposure Standard - Time-weighted average). The average airborne concentration of a substance calculated over an eight-hour working day.

WES-Ceiling (Workplace Exposure Standard - Ceiling). A concentration that should not be exceeded at any time during any part of the working day.

WES-STEL (Workplace Exposure Standard - Short-term exposure limit). The 15-minute time weighted average exposure standard. Applies to any 15-minute period in the working day and is designed to protect the worker against adverse effects of irritation, chronic or irreversible tissue change, or narcosis that may increase the likelihood of accidents. The WES-STEL is not an alternative to the WES-TWA; both the short-term and time-weighted average exposures apply. Exposures at concentrations between the WES-TWA and the WES-STEL should be less than 15 minutes, should occur no more than four times per day, and there should be at least 60 minutes between successive exposures in this range.

These Exposure Standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept too as low a level as is workable. These exposure standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity.

If the directions for use on the product label are followed, exposure of individuals using the product should not exceed the above standard. The standard was created for workers who are routinely, potentially exposed during product manufacture.

Biological Limit Values: As per the WorkSafe New Zealand the ingredients in this material do not have a Biological Limit Allocated.

Engineering Measures: Ensure ventilation is adequate to maintain air concentrations below Exposure Standards. Use only in well ventilated areas. Use with local exhaust ventilation or while wearing appropriate respirator.

Personal Protection Equipment: RUBBER BOOTS, OVERALLS, GLOVES, FACE SHIELD, RESPIRATOR.
Personal protective equipment (PPE) must be suitable for the nature of the work and any hazard associated with the work as identified by the risk assessment conducted.
Wear rubber boots, overalls, gloves, face shield, respirator, impermeable headwear.
Use with adequate ventilation. If inhalation risk exists wear organic vapour/particulate respirator meeting the requirements of AS/NZS 1715 and AS/NZS 1716. Available information suggests that gloves made from nitrile rubber should be suitable for intermittent contact. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storing or re-using.

Hygiene measures: Keep away from food, drink and animal feeding stuffs. When using do not eat, drink or smoke. Wash hands prior to eating, drinking or smoking. Avoid contact with clothing. Avoid eye contact and skin contact. Avoid inhalation of vapour, mist or aerosols. Ensure that eyewash stations and safety showers are close to the workstation location

9. PHYSICAL AND CHEMICAL PROPERTIES

Form:	Clear liquid	**Specific Gravity:**	1.06 - 1.09
Colour:	Blue	**Melting Point/Range (°C):**	- 16
Odour:	Offensive	**pH:**	4 - 6
Solubility:	Soluble in water		

10. STABILITY AND REACTIVITY

Chemical stability: Will gradually dimerise under ordinary conditions. Gradually hydrolyses to urea at pH <2 or pH >12

Conditions to avoid: Elevated temperatures and sources of ignition.

Incompatible materials: Oxidising agents, acids and alkalis.

Hazardous decomposition products: Oxides of carbon and nitrogen, smoke and other toxic fumes.

Hazardous reactions: Alkali causes violent exothermic polymerisation

11. TOXICOLOGICAL INFORMATION

No adverse health effects expected if the product is handled in accordance with this Safety Data Sheet and the product label. Symptoms or effects that may arise if the product is mishandled and overexposure occurs are:

ACUTE EFFECTS

Inhalation: Harmful if inhaled. Material may be an irritant to mucous membranes and respiratory tract.

Skin contact: Harmful in contact with skin. Can be absorbed through the skin with resultant toxic effects. Contact with skin will result in irritation. A skin sensitiser. Repeated or prolonged skin contact may lead to allergic contact dermatitis.

Ingestion: Toxic if swallowed. Swallowing can result in nausea, vomiting and irritation of the gastrointestinal tract.

Eye contact: An eye irritant.

ACUTE TOXICITY

Inhalation: This material has been classified as a Category 4 Hazard. Acute toxicity estimate (based on ingredients): $10.0 < LC_{50} \leq 20.0$ mg/L for vapours or $1.0 < LC_{50} \leq 5.0$ mg/L for dust and mist.

Skin contact: This material has been classified as a Category 4 Hazard. Acute toxicity estimate (based on ingredients): $1{,}000 < LD_{50} \leq 2{,}000$ mg/Kg bw

Ingestion: This material has been classified as a Category 3 Hazard. Acute toxicity estimate (based on ingredients): $50 < LD_{50} \leq 300$ mg/Kg bw

Corrosion/Irritancy: Eye: this material has been classified as a Category 2 Hazard (reversible effects to eyes). Skin: this material has been classified as a Category 2 Hazard (reversible effects to skin).

Sensitisation: Inhalation: this material has been classified as not a respiratory sensitiser.
Skin: this material has been classified as a Category 1 Hazard (skin sensitiser).

Aspiration hazard: This material has been classified as not an aspiration hazard.

Specific target organ toxicity (single exposure):
This material has been classified as not a specific hazard to target organs by a single exposure.

CHRONIC TOXICITY

Mutagenicity: This material has been classified as non-hazardous.

Carcinogenicity: This material has been classified as non-hazardous.

Reproductive toxicity (including via lactation):
This material has been classified as a Category 2 - Substances that are suspected human reproductive or developmental toxicants.

Specific target organ toxicity (repeat exposure):
This material has been classified as a Category 1 - Substances that are toxic to human target organs or systems.

12. ECOLOGICAL INFORMATION

Avoid contaminating waterways.

Acute aquatic hazard:	This material has been classified as not hazardous for acute aquatic exposure. Acute toxicity estimate (based on ingredients): > 100 mg/L
Chronic aquatic hazard:	This material has been classified as a Category Chronic 3 Hazard. Non-rapidly or rapidly degradable substance for which there are adequate chronic toxicity data available OR in the absence of chronic toxicity data, Acute toxicity estimate (based on ingredients): 10 - 100 mg/L, where the substance is not rapidly degradable and/or BCF ≥ 500 and/or log Kow ≥ 4.
Ecotoxicity in the soil environment:	This material has been classified as non-hazardous.
Ecotoxicity to terrestrial vertebrates:	This material has been classified as harmful to terrestrial vertebrates.
Ecotoxicity to terrestrial invertebrates:	This material has been classified as harmful to terrestrial invertebrates.
Ecotoxicity:	No information available.
Persistence and degradability:	No information available.
Bioaccumulative potential:	No information available.
Mobility:	No information available.

13. DISPOSAL CONSIDERATIONS

Persons conducting disposal, recycling or reclamation activities should ensure that appropriate personal protection equipment is used, see "Section 8. Exposure Controls and Personal Protection" of this SDS.

If possible, material and its container should be recycled. If material or container cannot be recycled, dispose in accordance with local, regional, national and international Regulations.

14. TRANSPORT INFORMATION

ROAD AND RAIL TRANSPORT

Classified as Dangerous Goods by the criteria of the "Australian Code for the Transport of Dangerous Goods by Road & Rail" and the "New Zealand NZS5433: Transport of Dangerous Goods on Land".

UN No:	2810
Dangerous Goods Class:	6.1
Packing Group:	III
Hazchem Code:	2X
Emergency Response Guide No:	36
Limited Quantities:	5L
Proper Shipping Name:	TOXIC LIQUID, ORGANIC, N.O.S.
Segregation Dangerous Goods:	Not to be loaded with explosives (Class 1), nitromethane, food and food packaging in any quantity. Note 1: Dangerous Goods of Class 6 which are fire risk substances are incompatible with dangerous goods of Class 1, Class 5.1 and Class 5.2. Note 2: Dangerous Goods of Class 6 which are cyanides are incompatible with acids. Exceptions may apply.

MARINE TRANSPORT

Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea. This material is classified as a Marine Pollutant (P) according to the International Maritime Dangerous Goods Code.

UN No:	2810
Dangerous Goods Class:	6.1
Packing Group:	III
Limited Quantities:	5L
Proper Shipping Name:	TOXIC LIQUID, ORGANIC, N.O.S.

AIR TRANSPORT

Classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air.

UN No:	2810
Dangerous Goods Class:	6.1
Packing Group:	III
Limited Quantities:	2 L
Proper Shipping Name:	TOXIC LIQUID, ORGANIC, N.O.S.

15. REGULATORY INFORMATION

This material/constituent(s) is covered by the following requirements:

NZ EPA Status: NZ EPA Status: All components of this product are listed on or exempt from the New Zealand Inventory of Chemical (NZIoC).

HSNO Approval Code: HRC000001

16. OTHER INFORMATION

Reason for issue: 5 Yearly Revision

This information was prepared in good faith from the best information available at the time of issue. It is based on the present level of research and to this extent we believe it is accurate. However, no guarantee of accuracy is made or implied and since conditions of use are beyond our control, all information relevant to usage is offered without warranty. The manufacturer will not be held responsible for any unauthorised use of this information or for any modified or altered versions.

If you are an employer, it is your duty to tell your employees, and any others that may be affected, of any hazards described in this sheet and of any precautions that should be taken.

Safety Data Sheets are updated frequently. Please ensure you have a current copy.