

SECTION 1 - IDENTIFICATION OF CHEMICAL PRODUCT AND COMPANY

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Substance: Cyanamide is a cyanide derivative.
Trade Name: DUOMAX HC520 Plant Growth Regulator
Product Use: Plant growth regulator for use as described on the product label.
Creation Date: Nov, 2021
Revision Date: Nov, 2026

Section 2 - Hazards Identification

GHS Hazard Class	Acute Toxicity (Dermal) Category 4 Acute Toxicity (Oral) Category 3 Skin Corrosion/Irritation Category 1 Serious Eye Damage Category 1 Skin Sensitizer Category 1 Acute Aquatic Hazard Category 2
GHS Pictograms	
Signal word	DANGER
Hazard Statements	H301: Toxic if swallowed. H312: Harmful in contact with skin. H314: Causes severe skin burns and eye damage. H318: Causes serious eye damage. H317: May cause an allergic skin reaction. H401: Toxic to aquatic life.
Precautionary Statements	P264 – Wash hands thoroughly after handling. P270 – Do not eat, drink or smoke when using this product. P301 + P310 – IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. P321 – Treat Symptomatically P330 – Rinse mouth. P405 – Store locked up. P501 – Dispose of contents/container in accordance with local regulations. P280 – Wear protective gloves/protective clothing/eye protection/face protection. P302 + P352 – IF ON SKIN: Wash with plenty of soap and water. P312 – Call a POISON CENTER or doctor/physician if you feel unwell. P362 + P364 – Take off contaminated clothing and wash it before reuse. P260 – Do not breathe dust/fume/gas/mist/vapours/spray. P301 + P330 + P331 – IF SWALLOWED: rinse mouth. Do NOT induce vomiting. P303 + P361 + P353 – IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. P363 – Wash contaminated clothing before reuse. P304 + P340 – IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. P310 – Immediately call a POISON CENTER or doctor/physician. P305 + P351 + P338 – IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P261 – Avoid breathing dust/fume/gas/mist/vapours/spray. P272 – Contaminated work clothing should not be allowed out of the workplace. P333 + P313 – If skin irritation or rash occurs: Get medical advice/attention. P273 – Avoid release to the environment.

SUSDP Classification: S6

ADG Classification: Class 8, Sub risk 6.1 (CORROSIVE LIQUID, TOXIC, N.O.S.)

UN Number: 2922

MATERIAL SAFETY DATA SHEET

Issued by: Duomax Agro Development Pty Ltd

Phone: 03 5274 2500

Emergency Overview

Physical Description & colour: Clear, blue liquid.

Odour: No odour.

Major Health Hazards: toxic if swallowed, causes burns, may cause serious damage to eyes, harmful in contact with skin, skin irritant, possible skin sensitiser.

Potential Health Effects

Inhalation

Short term exposure: Significant inhalation exposure is considered to be unlikely. Available data indicates that this product is not harmful. In addition product is unlikely to cause any discomfort or irritation.

Long Term exposure: No data for health effects associated with long term inhalation.

Skin Contact:

Short term exposure: Available data shows that this product is harmful, but symptoms are not available. In addition product is a severe skin irritant. Symptoms may include extreme itchiness and reddening of contacted skin. Other symptoms such as blisters may also become evident, and may last long after exposure has ceased.

Long Term exposure: No data for health effects associated with long term skin exposure.

Eye Contact:

Short term exposure: Exposure via eyes is considered to be unlikely. This product is a severe eye irritant. Symptoms may include stinging and reddening of eyes and watering which may become copious. Other symptoms such as swelling of eyelids and blurred vision may also become evident. If exposure is brief, symptoms should disappear once exposure has ceased. However, lengthy exposure or delayed treatment is likely to cause permanent damage.

Long Term exposure: No data for health effects associated with long term eye exposure.

Ingestion:

Short term exposure: Available data shows that this product is toxic, but further symptoms are not available. This product is corrosive to the gastrointestinal tract. Capable of causing moderate to severe burns with ulceration. Can penetrate to deeper layers of skin, resulting in third degree burns. Corrosion will continue until product is removed or neutralised. Severity depends on concentration and duration of exposure.

Long Term exposure: No data for health effects associated with long term ingestion.

Carcinogen Status:

NOHSC: No significant ingredient is classified as carcinogenic by NOHSC.

NTP: No significant ingredient is classified as carcinogenic by NTP.

IARC: No significant ingredient is classified as carcinogenic by IARC.

Section 3 - Composition/Information on Ingredients

Ingredients	CAS No	Conc, %	TWA (mg/m ³)	STEL (mg/m ³)
Cyanamide	420-04-2	49	2	not set
Phosphoric acid	7664-38-2	>1	1	3
Other non hazardous ingredients	secret	to 100	not set	not set

This is a commercial product whose exact ratio of components may vary slightly. Minor quantities of other non hazardous ingredients are also possible.

The TWA exposure value is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week. The STEL (Short Term Exposure Limit) is an exposure value that should not be exceeded for more than 15 minutes and should not be repeated for more than 4 times per day. There should be at least 60 minutes between successive exposures at the STEL. The term "peak" is used when the TWA limit, because of the rapid action of the substance, should never be exceeded, even briefly.

Section 4 - First Aid Measures

General Information:

You should call The Poisons Information Centre if you feel that you may have been poisoned, burned or irritated by this product. The number is 13 1126 from anywhere in Australia (0800 764 766 in New Zealand) and is available at all times. Have this MSDS with you when you call.

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Inhalation: First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

Skin Contact: If significant skin contact occurs, quickly contact a Poisons Information Centre, or call a doctor.

Gently blot or brush away excess chemical. Remove contaminated clothing, shoes and leather goods.(e.g. watchbands, belts). Flush contaminated area with lukewarm , gently flowing water for at least 20-30 minutes, by the clock. If irritation persists, continue flushing. DO NOT INTERRUPT FLUSHING. If necessary, keep emergency vehicle waiting (show paramedics this MSDS and take their advice).

Eye Contact: Quickly and gently blot or brush away product. Immediately flush the contaminated eye(s) with lukewarm, gently flowing water until the product is removed or until a few minutes after irritation has ceased, while holding the eyelid(s) open. Take care not to rinse contaminated water into the unaffected eye or onto the face. Obtain medical advice if irritation becomes painful or lasts more than a few minutes.

Ingestion: If swallowed, rinse mouth thoroughly with water and contact a Poisons Information Centre. Urgent hospital treatment is likely to be needed. Give activated charcoal if instructed.

Section 5 - Fire Fighting Measures

Fire and Explosion Hazards: There is a slight risk of an explosion from this product if commercial quantities are involved in a fire. Vapours from this product are heavier than air and may accumulate in sumps, pits and other low-lying spaces, forming potentially explosive mixtures. They may also flash back considerable distances.

Fire decomposition products from this product may be toxic if inhaled. Take appropriate protective measures.

Extinguishing Media: Preferred extinguishing media are carbon dioxide, dry chemical, foam, water fog. Water fog or fine spray is the preferred medium for large fires.

Fire Fighting: When fighting fires involving significant quantities of this product, wear a splash suit complete with self contained breathing apparatus.

Flash point: Not flammable - combustible.

Upper Flammability Limit: Does not burn.

Lower Flammability Limit: Does not burn.

Autoignition temperature: Does not burn.

Flammability Class: Does not burn.

Section 6 - Accidental Release Measures

Accidental release: In the event of a major spill, prevent spillage from entering drains or water courses. Evacuate the spill area and deny entry to unnecessary and unprotected personnel. Immediately call the Fire Brigade. Wear full protective chemically resistant clothing including eye/face protection, gauntlets and self contained breathing apparatus. See above under Personal Protection regarding Australian Standards relating to personal protective equipment. Suitable materials for protective clothing include rubber, PVC. Eye/face protective equipment should comprise as a minimum, protective goggles. If there is a significant chance that vapours or mists are likely to build up in the cleanup area, we recommend that you use a respirator. It should be fitted with a type G cartridge, suitable for agricultural chemicals.

Stop leak if safe to do so, and contain spill. Absorb onto sand, vermiculite or other suitable absorbent material. If spill is too large or if absorbent material is not available, try to create a dike to stop material spreading or going into drains or waterways. Because of the toxicity of this product, special personal care should be taken in any cleanup operation. Because of the corrosiveness of this product, special personal care should be taken in any cleanup operation. Sweep up and shovel or collect recoverable product into labelled containers for recycling or salvage, and dispose of promptly. After spills, wash area preventing runoff from entering drains. If a significant quantity of material enters drains, advise emergency services. Contaminated area may be neutralised by washing with weak or dilute alkali. Baking soda, washing soda and limestone are suitable. Full details regarding disposal of used containers, spillage and unused material may be found on the label. If there is any conflict between this MSDS and the label, instructions on the label prevail. Ensure legality of disposal by consulting regulations prior to disposal. Thoroughly launder protective clothing before storage or re-use. Advise laundry of nature of contamination when sending contaminated clothing to laundry.

Section 7 - Handling and Storage

Handling: Keep exposure to this product to a minimum, and minimise the quantities kept in work areas. Check Section 8 of this MSDS for details of personal protective measures, and make sure that those measures are followed. The measures detailed below under "Storage" should be followed during handling in order to minimise risks to persons using the product in the workplace. Also, avoid contact or contamination of product with incompatible materials listed in Section 10.

Storage: This product is a Scheduled Poison. Observe all relevant regulations regarding sale, transport and storage of this class of poison. Store in a cool, well ventilated area. Check containers periodically for corrosion and leaks. Containers should be kept closed in order to minimise contamination. Make sure that the product does not come into contact with substances listed under "Materials to avoid" in Section 10. If you keep more than 1000kg or 1000L of Corrosive Substances of Packaging Group III, you will require a license to do so. If you have any doubts, we suggest you contact your licensing authority in order to clarify your obligations. Check packaging - there may be further storage instructions on the label.

Section 8 - Exposure Controls and Personal Protection

The following Australian Standards will provide general advice regarding safety clothing and equipment:

Respiratory equipment: **AS/NZS 1715**, Protective Gloves: **AS 2161**, Industrial Clothing: **AS2919**, Industrial Eye Protection: **AS1336** and **AS/NZS 1337**, Occupational Protective Footwear: **AS/NZS2210**.

Exposure Limits	TWA (mg/m ³)	STEL (mg/m ³)
Cyanamide	2	not set
Phosphoric acid	1	3

The ADI for Cyanamide is set at 0.002mg/kg/day. The corresponding NOEL is set at 0.2mg/kg/day. ADI means Acceptable Daily Intake and NOEL means No-observable-effect-level. Values taken from Australian ADI List, Aug 2003.

Ventilation: This product should only be used in a well ventilated area. If natural ventilation is inadequate, use of a fan is suggested.

Eye Protection: Protective glasses or goggles must be worn when this product is being used. Failure to protect your eyes may lead to severe harm to them or to general health. Emergency eye wash facilities must also be available in an area close to where this product is being used.

Skin Protection: It is essential that all skin areas are adequately covered by impermeable gloves, overalls, hair covering, apron and face shield. See below for suitable material types.

Protective Material Types: We suggest that protective clothing be made from the following materials: rubber, PVC.

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Respirator: If there is a significant chance that vapours or mists are likely to build up in the area where this product is being used, we recommend that you use a respirator. It should be fitted with a type G cartridge, suitable for agricultural chemicals.

Eyebaths or eyewash stations and safety deluge showers should be provided near to where this product is being used.

Section 9 - Physical and Chemical Properties:

Physical Description & colour:	Clear, blue liquid.
Odour:	No odour.
Boiling Point:	Approximately 106°C at 100kPa.
Freezing/Melting Point:	Approximately -15°C.
Volatiles:	Water component.
Vapour Pressure:	Approx 0.5Pa at 20°C
Vapour Density:	No data.
Specific Gravity:	1.06 at 20°C
Water Solubility:	Completely soluble in water.
pH:	Corrosive. pH about 4.5
Volatility:	No data.
Odour Threshold:	No data.
Evaporation Rate:	No data.
Coeff Oil/water distribution:	No data
Autoignition temp:	Does not burn.

Section 10 - Stability and Reactivity

Reactivity: Most strong acids react with inorganic and organic bases such as amines to form salts. They also react with many metals liberating hydrogen gas. These reactions are often rapid and sometimes liberate much heat. They can also decompose many organic materials such as esters, in a reaction called hydrolysis.

Conditions to Avoid: This product should be kept in a cool place, preferably below 30°C.

Incompatibilities: Reacts with acids and bases. Elevated temperatures can lead to violent exothermic reactions.

Fire Decomposition: Carbon dioxide, and if combustion is incomplete, carbon monoxide and smoke. Nitrogen and its compounds, and under some circumstances, oxides of nitrogen. Occasionally hydrogen cyanide gas. Water. Carbon monoxide poisoning produces headache, weakness, nausea, dizziness, confusion, dimness of vision, disturbance of judgment, and unconsciousness followed by coma and death.

Polymerisation: This product is unlikely to undergo polymerisation processes.

Section 11 - Toxicological Information

Local Effects:

Target Organs: There is no data to hand indicating any particular target organs.

Classification of Hazardous Ingredients

Ingredient	Risk Phrases
Cyanamide	Conc≥25%: T; R25; R21; R36/38; R43

Section 12 - Ecological Information

This product is biodegradable. It will not accumulate in the soil or water or cause long term problems.

Toxic to aquatic organisms.

96hr LC₅₀ (rainbow trout): 180 mg/L.

48hr EC₅₀ (*Daphnia magna*): 6.5 mg/L.

Log P_{ow} is -0.82.

Risk of bioaccumulation in an aquatic species is negligible.

FOR CYANAMIDE:

AQUATIC TOXICITY

96hr LC₅₀ (bluegill sunfish): 44 mg/L.

96hr LC₅₀ (carp): 87 mg/L.

96hr LC₅₀ (rainbow trout): 90 mg/L.

48hr LC₅₀ (*Daphnia magna*): 3.2 mg/L.

TERRESTRIAL TOXICITY

Toxic to bees.

Oral LD₅₀ (bobwhite quail): 350 mg/kg.

No residue problems in soil.

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Section 13 - Disposal Considerations

Disposal: Instructions concerning the disposal of this product and its containers are given on the product label. These should be carefully followed.

Section 14 - Transport Information

ADG Code: 2922, CORROSIVE LIQUID, TOXIC, N.O.S.

Hazchem Code: 2X

Special Provisions: SP109, SP129, SP274

Dangerous Goods Class: Class 8, Corrosive Substances.

Sub Risk: Class 6.1, Toxic Substances.

Packaging Group: III

Packaging Method: 3.8.8

Class 8 Corrosive Substances shall not be loaded in the same vehicle or packed in the same freight container with Classes 1 (Explosives), 4.3 (Dangerous When Wet Substances), 5.1 (Oxidising Agents), 5.2 (Organic Peroxides), 6 (Toxic Substances where the Toxic Substances are cyanides and the Corrosives are acids), 7 (Radioactive Substances), Foodstuffs and foodstuff empties. They may however be loaded in the same vehicle or packed in the same freight container with Classes 2.1 (Flammable Gases), 2.2 (Non-Flammable, Non-Toxic Gases), 2.3 (Poisonous Gases), 3 (Flammable liquids), 4.1 (Flammable Solids), 4.2 (Spontaneously Combustible Substances), 6 (Toxic Substances except where the Toxic Substances are cyanides and the Corrosives are acids) and 9 (Miscellaneous Dangerous Goods).

Section 15 - Regulatory Information

AICS: All of the significant ingredients in this formulation are to be found in the public AICS Database. The following ingredients: Cyanamide, Phosphoric acid, are mentioned in the SUSDP.

Section 16 - Other Information

This MSDS contains only safety-related information. For other data see product literature.

Acronyms:

ADG Code	Australian Code for the Transport of Dangerous Goods by Road and Rail
AICS	Australian Inventory of Chemical Substances
CAS number	Chemical Abstracts Service Registry Number
Hazchem Number	Emergency action code of numbers and letters that provide information to emergency services especially firefighters
IARC	International Agency for Research on Cancer
NOHSC	National Occupational Health and Safety Commission
NOS	Not otherwise specified
NTP	National Toxicology Program (USA)
R-Phrase	Risk Phrase
SUSDP	Standard for the Uniform Scheduling of Drugs & Poisons
UN Number	United Nations Number

THIS MSDS SUMMARISES OUR BEST KNOWLEDGE OF THE HEALTH AND SAFETY HAZARD INFORMATION OF THE PRODUCT AND HOW TO SAFELY HANDLE AND USE THE PRODUCT IN THE WORKPLACE. EACH USER MUST REVIEW THIS MSDS IN THE CONTEXT OF HOW THE PRODUCT WILL BE HANDLED AND USED IN THE WORKPLACE.

IF CLARIFICATION OR FURTHER INFORMATION IS NEEDED TO ENSURE THAT AN APPROPRIATE RISK ASSESSMENT CAN BE MADE, THE USER SHOULD CONTACT THIS COMPANY SO WE CAN ATTEMPT TO OBTAIN ADDITIONAL INFORMATION FROM OUR SUPPLIERS. OUR RESPONSIBILITY FOR PRODUCTS SOLD IS SUBJECT TO OUR STANDARD TERMS AND CONDITIONS, A COPY OF WHICH IS SENT TO OUR CUSTOMERS AND IS ALSO AVAILABLE ON REQUEST.

Please read all labels carefully before using product.

This SDS has been prepared according to the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) 7th revised edition

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