PLANT MECHANICS

Original Root BOOSTER V2

Version: 1.0
Date of Issue: 25.03.2022
Date of Previous Issue: N/A
Revision Due:25.03.2027

Section 1. Identification

Product Identifier: **Root Booster**

Other names	:	Hydroponic fertiliser
Product code	:	not applicable
Chemical formula	:	Mixture
Recommended use	:	Plant fertiliser and root stimulant formulated for hydroponic applications
Supplier	:	**Plant Mechanics**
Address	:	P.O. Box 216 Seacliff Park South Australia, 5049
Telephone no.	:	+61 1800 072 151
Fax no.	:	+61 8 8186 3377
Web site	:	www.plantmechanics.co
Email	:	info@plantmechanics.co
Emergency phone	:	+61 1800 072 151 24 hours
Poisons Information Centre		
Australia	:	**13 11 26**
New Zealand	:	**0800 764 766**

Section 2. Hazard(s) Identification

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

GHS Classification

Hazard Categories	Not applicable
Signal Word	Not applicable
Hazard Statements	Not applicable
Hazard Pictogram	Not applicable

Precautionary Statements – General, Disposal

General	
P101 + P102 + P103	If medical advice is needed, have the product container or label on hand. Keep out of reach of children. Read label before use.
Disposal	
P501	Dispose of contents and container to an approved waste disposal plant in accordance with local regulations.

Section 3. Composition and Information on Ingredients

Product name	Root Booster	***Product Code***	
Product use	Hydroponic fertiliser		
Ingredients	***Name***	***CAS Number***	***Proportion w/w***
	Water	7732-18-5	70.0 – 80.0%
	Amino acids	Mixture	<10.0%
	Ascophyllum nodosum (Brown alga extract)	84775-78-0	<5.0%
	Fulvic acid powder	479-66-3	<5.0%
	Natural plant biostimulants	Mixture	<1.0%
	Vitamins	Mixture	<1.0%
	Proprietary surfactants	Mixture	<0.5%

Section 4. First Aid Measures

Description of necessary first aid measures

Inhalation If applicator feels drowsy, dizzy, tired, or experiencing headaches, remove oneself to fresh air. If symptoms develop or persist seek medical attention.

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

Eyes Rinse cautiously with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do so. Continue rinsing until all contaminants are washed out completely. Consult a doctor if any irritation occurs.

Skin and hair If skin contact occurs, wash skin and hair with soap and plenty of water. Consult a doctor if any skin or eye 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 (telephone Australia: 13 11 26; New Zealand: 0800 764 766). Have a copy of this safety data sheet or label available. Treat symptomatically.

Symptoms caused by exposure

Contact may cause mild irritation of the eyes. Other than mild irritation no acute, delayed, or aggravated medical conditions known. Ingestion may cause vomiting.

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. Consult a doctor if any irritation occurs.

Section 5. Firefighting Measures

General measures

Clear fire area of all non-emergency personnel. Stay upwind. Keep out of low areas. Eliminate ignition sources. Move fire exposed containers from the fire area if it can be done without risk. Do NOT allow fire-fighting water to reach waterways, drains or sewers. Store firefighting water for treatment. Exposure to decomposition products may cause a health hazard.

Suitable extinguishing equipment AS 2444:2001

Use water, water spray, foam, dry chemical, or carbon dioxide. Appropriate extinguishing media should be suitable for the surrounding fire and environment. No unsuitable extinguishing media identified.

Specific hazards arising from the chemical
In a fire or if heated, a pressure increase will occur, and the container may burst. Combustion and decomposition products may include the following materials: nitrogen oxides (NO_x), ammonia (NH_3), sulphur oxides(SO_x), carbon monoxide (CO), and carbon dioxide (CO_2). Gases generated in combustion may be corrosive, poisonous, or irritating. Avoid breathing dusts, vapours, or fumes from burning materials. In case of decomposition products in a fire, symptoms may be delayed.

Special protective equipment and precautions for firefighters
Wear self-contained breathing apparatus if necessary and normal protective firefighting clothing.
No HAZCHEM codes assigned.

Further information

Flash point	No data available
Lower explosion limit	No data available
Upper explosion limit	No data available
Auto ignition temperature	No data available

Section 6. Accidental Release Measures

Personal precautions, protective, and emergency procedures
Evacuate personnel from surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk-through spilled material. Use personal protective equipment. Ensure adequate ventilation. For personal protection see section 8.

Environmental precautions
Prevent from entering waterways, sewage, and drains. For any queries consult Local Statuary Authorities.

Methods and materials for containment and cleaning up
Cover drains. Contain spills and absorb onto absorbent material, dry sand, or earth. Sweep and shovel into suitably labelled, closed containers for disposal.

Section 7. Handling and Storage

Precautions for safe handling
Keep out of reach of children. Use personal protective equipment. For personal protection see section 8. Avoid contact with skin and eyes. Avoid formation of mists or sprays. After use and before eating, drinking, or smoking, wash all exposed skin and hair with soap and water.

Conditions of safe storage and incompatibilities
Containers must be clearly labelled. Keep container tightly closed in a cool, dry, and well-ventilated place. Store away from strong oxidising agents.

Specific end uses
Apart from uses mentioned in section 1., no other specific uses are stipulated.

Section 8. Exposure Controls and Personal Protection

Exposure standards TWA (8 hour)	There are no assigned exposure standards for this product. For dried 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.
Biological limited values	There are no known Biological Limited Values that have been assigned.
Engineering controls	Avoid inhalation of spray mist. Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practices. Wash hands before breaks and at the end of the workday.

Personal Protection

Inhalation/respiratory AS –NZS 1715/1716	If ventilation is inadequate use respiratory protection. Use respirators and components tested and approved under appropriate government standards.
Eye and face AS –NZS 1336/1337	It is advisable to wear safety glasses fitted with side shields.
Gloves AS –NZS 2161	It is advisable to handle 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 2919 AS-NZS3765	It is advisable to wear protective clothing during handling. Suitable cotton overalls buttoned up at neck and wrists recommended.
Hearing AS –NZS 1270	Not required
Thermal hazards	Not required

Other Requirements

The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. Avoid unnecessary contact with eyes, skin, and hair. After application, wash skin and hair thoroughly with soap and water.

Section 9. Physical and Chemical Properties

Physical state	Liquid
Appearance	Dark brown
Odour *(@ room temperature)*	Slight acrid odour
Odour threshold	No data available
pH *(@ 20^{O}C)*	7.00 – 7.50
Freezing point	No data available
Boiling point and boiling range	>100^{O}C
Melting point	No data available
Flash point	No data available
Evaporation rate	No data available
Flammability	Non-flammable
Upper/lower flammability or explosive limits	Not applicable
Auto-ignition temperature	Not applicable
Vapour pressure	No data available
Vapour density	No data available
Specific Gravity *(relative density)*	1.05 - 1.10
Solubility *(water @ 20^{O}C)*	Miscible
Partition coefficient: n-octanol/water	No data available
Decomposition temperature	No data available
Viscosity	No data available

Section 10. Stability and Reactivity

Chemical stability	Stable under recommended storage conditions.
Possibility of hazardous reactions	Will not polymerise. Under normal storage conditions and use, hazardous reactions will not occur.
Conditions to avoid	High temperatures (pressure increase may cause containers to burst).

Incompatible materials	Strong oxidising agents.
Hazardous decomposition products	May evolve toxic gases if heated to decomposition. Under normal use and storage conditions hazardous decomposition products should not be produced. In the event of fire: see section 5.

Section 11. Toxicological Information

Ingredient: Mixture non-hazardous organic compounds	Information Sources: No data available
Concentration	>25% by weight
Acute toxicity	No data available
Skin corrosion/irritation	No data available
Serious eye damage/irritation	No known significant effects or critical hazards. May cause irritation to eyes.
Respiratory or skin sensitisation	Not classified as causing skin or respiratory irritation.
Germ cell mutagenicity	No ingredients classified as a mutagen.
Carcinogenicity	No ingredients identified as a probable, possible, or confirmed human carcinogen by IARC.
Reproductive toxicity	No ingredients considered reproductive or developmental toxicants.
Specific Target Organ Toxicity STOT - single exposure	No data available
Specific Target Organ Toxicity STOT - repeated exposure	No ingredients classified as causing organ damage from repeated exposure.
Aspiration hazard	No data available
Possible routes of exposure	Inhalation, eye contact and ingestion.
Signs and Symptoms of exposure	Overexposure may cause irritation of the eyes. Ingestion may cause vomiting.
Health Effect from exposure	No data available
Other information	Excessive ingestion may cause abdominal pain, diarrhoea, and vomiting.
To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated.	

Section 12. Ecological Information

Ecotoxicity	No data available
Persistence and Degradability	No data available
Bioaccumulative potential	This mixture is not expected to bioaccumulate, organic ingredients will be metabolised by microflora.
Mobility in soil (Koc value)	No data available
Other adverse effects	Nutrients released to water ways may cause algal blooms, with potential for toxic effects on aquatic organisms.

Section 13. Disposal Considerations

Spills

Prevent spills from entering drains, surface water and ground water. Collect all residues with absorbent material. After removal of residues wash down area with water. Disposal must be carried out in accordance with Local Statuary Authorities.

Material

Handle and dispose of in compliance with current environmental waste legislation. If in doubt, contact Local Statuary Authorities.

Contaminated Material and Packaging
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. Disposal must be carried out in compliance with current environmental waste legislation. If in doubt seek professional advice or contact Local Statuary Authorities.
For the safety of persons conducting disposal, recycling, or reclamation activities, refer to the information in section 8.

Section 14. Transport Information

UN number	Not required under ADG Code		
Proper Shipping 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	Ensure packaging is not damaged and suitable for transport.		
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.		

Section 15. Regulatory Information

Hazard Category	The product is **Classified as Non-Hazardous** in accordance with Safe Work Australia - Hazardous Chemicals Information System (HCIS) Australia, Globally Harmonised System (GHS) of Classification and Labelling of Chemicals.

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.
MARPOL
NOT subject to Annexe III - Harmful Substances carried in Packaged Form.
Safety, health, and environmental regulations
SUSMP Classification - Not Classified as a Schedule Poison.
AICIS (formerly NICNAS) - All components are listed or exempted.

Section 16. Other Information

This Safety Data Sheet conforms with the "PREPARATION OF SAFETY DATA SHEETS FOR HAZARDOUS CHEMICALS Code of Practice, MAY 2018" 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 25h March 2022 version number 1.

Legend of Abbreviations and Acronyms

ADG - Australian Dangerous Goods Code for the Transport of Dangerous Goods by Road or Rail.
AS/NZS - Australian Standards and New Zealand Standards.
BCF - Bioconcentration Factor.
CAS Number or CASRN - Chemical Abstract Service Registry Number.
GHS - Globally Harmonised System.
HCIS - Hazardous Chemicals Information System.
HSDB - Hazardous Substances Data Bank.
ECHA-CLP - European Chemicals Agency - Classification Labelling Packaging.
NICNAS-IMAP - National Industrial Chemicals Notification and Assessment Scheme - Inventory Multi-tiered Assessment and Prioritisation.
IARC - International Agency for Research on Cancer.
IERG - Initial Emergency Response Guide.
IMDG - International Maritime Dangerous Goods.
MARPOL - International Convention for the Prevention of Pollution from Ships.
OECD - Organisation for Economic Co-operation and development (guidelines for testing of chemicals).
TWA – Time-Weighted Average.
SDS - Safety Data Sheet.
STEL -Short Term Exposure Limit.
STOT - Specific Target Organ Toxicity.
SUSMP - Standards for the Uniform Scheduling of Medicines and Poisons.
UN Number - United Nations Number, 4-digit number that identifies dangerous goods.
^{o}C - Degrees Celsius.
EC_3 - the effective concentration of the test substance required to produce a three-fold increase in the stimulation index compared to vehicle-treated control.
EC_{50} - Half maximal effective concentration.
LD_{50} - Median lethal dose; is the median dosage per unit bodyweight required to kill half the members of a tested population after specified test duration.
LD_{100} - The lowest dose of a substance that under defined conditions is lethal for 100% exposed animals.
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.
bw - Body weight
mg/kg - Milligrams per kilogram.
mg/L - Milligrams per litre.
g/mL - Grams per millilitre.
mg/m^3 - Milligrams per cubic metre.
Koc - organic carbon-water partition coefficient.
pH - Potential of hydrogen (numeric scale to specify the acidity or basicity of an aqueous solution).
w/w - Weight per weight.
% - Percent or percentage.
< - Less than.
> - Greater than.
@ - at.

Emergency Contact 24 hours	Plant Mechanics: Ph: +61 1800 072 151	Poisons Information Centre: Ph: 13 11 26 (Australia) Ph: 0800 764 766 (New Zealand)

Disclaimer

The data provided is to best of PLANT MECHANIC's knowledge and is believed to be accurate and reliable as of the date of issue. However, no expressed or implied warranties are given. PLANT MECHANC's 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

No other product codes

Safety Data Sheet Revision

Issue Date: 25th March 2022
Revision Number: Original version
Next Revision Due: Match 2027

End of Safety Data Sheet