

1. Identification

Product identifier:	V ¹² -Fruit	
Synonyms:	None	
Company product code or Supplier code:	N/A	
Fertiliser Group:	2	
RSA Reg. No. (Act No. 36 of 1947):	B4511	
Supplier:	Andermatt Madumbi (Pty) Ltd Suite 105, 24 Hilton Ave, Hilton KZN 3245, South Africa Telephone: +27 (0) 33 342 3984 (09:00 to 16:00) Email address (technical): support@andermatt.co.za	
Recommended use:	Foliar fertiliser	
Restrictions on use:	Do not use for any other purpose than described on the product label	
Emergency numbers:	+27 (0) 33 342 3984 +27 (0) 82 446 8946	(09:00 to 16:00) (24 H)

2. Hazards identification

V¹²-Fruit is a liquid mixture.

Classification according to the GHS: Reproductive toxicity, Category 1B.

Signal word: DANGER

Hazard statements: MAY DAMAGE FERTILITY OR THE UNBORN CHILD H360



Precautionary statements:

Obtain, read, and follow all safety instructions before use.	P203
Wear protective gloves/protective clothing/eye protection.	P280
Do not eat, drink, or smoke when using this product.	P270
If exposed or concerned, get medical advice.	P318
Store locked-up.	P405
Dispose of contents and/or container in accordance with regulations.	P501

3. Composition/information on ingredients

Ingredient	CAS number	%
Disodium octaborate tetrahydrate	12280-03-4	8 to 10
Non-hazardous substances	Various	6 to 8
24-epi-brassinolide	78821-43-9	< 0.1
Other metal ions	Various	< 0.5
Water	7732-18-5	81 to 85

4. First aid measures

Inhalation:	Most important acute symptoms/effects: irritation of the upper airway, coughing may occur if mist or spray is directly inhaled. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Get medical help if the casualty feels unwell.
Eye contact:	Most important acute symptoms/effects: slight eye irritation, redness may occur. IF IN THE 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 help.
Skin contact:	Most important acute symptoms/effects: slight skin irritation, redness may occur. IF ON SKIN: Wash with soap and water. If skin irritation occurs, get medical help.
Ingestion:	Most important acute symptoms/effects: may cause gastrointestinal problems. IF SWALLOWED: Rinse mouth cautiously with water for several minutes. Drink water and get medical help.
Most important delayed symptoms/effects after exposure:	Damage to fertility or the unborn child may occur. Seek medical attention.
Indication of immediate medical attention:	If skin irritation or rash occurs, or if eye irritation persists, get medical help. Treat symptomatically. Pre-existing conditions may be aggravated, such as eye disorders or skin disorders.
Protection of first responders:	Avoid undue contact with the mixture. Wear gloves and a mask to prevent transmission of pathogens.

5. Firefighting measures

Appropriate/suitable extinguishing media:	The product is an aqueous mixture and does not burn. Water spray, foam, carbon dioxide (CO ₂) or dry powder may be used but select extinguishing media that is appropriate for local circumstances and the surroundings.
Inappropriate extinguishing media:	None known.
Nature of hazardous combustion products:	None expected.
Other hazards arising from the mixture:	None known. (There is no direct explosion hazard and no sensitivity to mechanical impact or to static discharge for this mixture).
Special protective equipment:	Avoid breathing dust, vapours, and combustion by-products from other chemicals in the vicinity of the fire. Use self-contained breathing apparatus and complete protective clothing. Do not attempt to act without suitable protective equipment.
Precautions and/or protective actions:	Move containers from the fire area if it can be done without risk. Water spray may be used to cool down the containers, but only after considering other material in the vicinity that may pose a hazard. Stay upwind and keep out of low areas. Take precautions to prevent extinguishing media contaminating surface water or ground water.

6. Accidental release measures

Distinguish between large or small spills, leaks, or releases.

Personal precautions:	Avoid contact with skin and eyes. Wash hands after handling. Do not touch eyes. Do not eat, drink, or smoke during clean-up operations.
Protective equipment:	Wear protective gloves/protective clothing/eye protection.
Emergency actions and procedures:	No special emergency actions or procedures are required.
Environmental precautions:	Excessive amounts of boron may damage sensitive vegetation. Avoid release to the environment. Prevent spills from entering storm sewers or drains. Report any large release to the appropriate authorities and advise them that none of the affected water should be used for irrigation or for the abstraction of potable water until natural dilution returns the boron value to its normal environmental background level.
Methods and materials for containment and cleaning up:	Move intact containers from the spill area. The product is a water miscible liquid. Stop leaks if it can be done safely and prevent run-off as far as possible.

Small spills: Dilute spills with water, if necessary, and mop up. Place in an appropriate waste disposal container.

Large spills: Prevent entry into sewers, water courses, basements, or confined areas by diking if possible. Wash the spillage into an effluent treatment plant. Alternatively contain and collect the spillage, either by mopping up or with absorbent material like dry sand or saw dust, and transfer to containers for disposal. Flush the area with water if appropriate.

Dispose of via a licensed waste disposal contractor.

7. Handling and storage

Precautions for safe handling: Wear protective gloves/protective clothing/eye protection, such as nitrile rubber gloves, safety glasses and long-sleeved clothing. Do not eat, drink, or smoke when using this product. Do not touch eyes. Wash hands and face after handling.

Conditions for safe storage: Keep containers closed and upright to prevent leakage. Store out of direct sunlight. Store locked up in a facility designed to contain liquid spills. Store separately from any food, feed, or drinks. Keep out of reach of children and uninformed persons.



Any incompatibilities: The mixture is compatible with most agricultural remedies.

8. Exposure controls/personal protection

No occupational exposure limit values have been established on this mixture.

No biological limit values are available for this mixture. Guideline values for individual essential elements such as B, Fe and Mn in drinking water are less than 5 mg/litre, while the maximum allowable levels for hazardous elements (As, Hg, Pb, Co, Cd, Cr, Ni, Al, Cu, Zn, Se) are much lower.

Appropriate engineering controls include good general ventilation. No other control parameters are considered necessary.

Wear personal protective equipment (protective gloves/protective clothing/eye protection/appropriate footwear) when handling the mixture.



9. Physical and chemical properties

Physical state	Liquid
Clarity:	Not reported
Colour:	Dark brown
Odour:	Slight
Odour threshold:	Not known
Melting point/freezing point:	< 0 °C *
Boiling point (or initial point and range):	> 100 °C *
Flammability (gases, liquids, solids):	Non-flammable
Lower and upper explosion limits:	None
Lower and upper flammability limits:	None
Flash point:	Non-combustible
Autoignition temperature:	Not applicable
Decomposition temperature:	Not known
pH, neat:	7.3
pH, aqueous dilution (10%):	Not reported
Dissociation in water, pKa:	When dissolved in water disodium octaborate tetrahydrate is converted into boric acid and borate. At pH 7.3 boric acid is the predominant entity. pKa of boric acid is 9.0 at 25 °C in dilute solutions.
Kinematic viscosity (of liquids) in mm ² /s:	Not known
Solubility in water:	Miscible with water
Solubility in a specified non-polar solvent:	Not miscible with non-polar solvents
Partition coefficient (n-octanol/water):	Not known
Vapour pressure (at 25 °):	< 23.8 torr (mmHg) or < 3.17 kPa *
Density and/or relative density:	1.09 @ 20°C
Relative vapour density:	Not known
Particle characteristics:	Not applicable
Evaporation rate:	Similar* to water

* Based on the values for water, which is the main component of the mixture.

10. Stability and reactivity

Chemical stability:	The mixture is chemically stable and not reactive when handled or stored at ambient temperatures and below. It is not combustible.
Safety significance of any change in physical appearance:	The mixture is not expected to change in physical appearance over time, except for reversible settling, which has no safety significance.
Possibility of hazardous reactions:	There is no possibility of hazardous reactions such as polymerisation.

Conditions to avoid:	Do not allow the mixture to heat up excessively. Pressure, shock, static discharge, and vibrations have no known effect.
Incompatible materials:	There are no known incompatible materials apart from strong reducing agents.
Hazardous decomposition products:	The mixture is not expected to produce hazardous decomposition products when used and stored properly, but may decompose when heated, producing oxides of carbon and nitrogen.

11. Toxicological information

Routes of exposure: Exposure to the mixture predominantly occur through skin and eye contact. Accidental ingestion of the liquid or inhalation of the vapours can occur through negligence.

Symptoms related to the physical, chemical, and toxicological characteristics of the mixture include irritation and redness upon skin contact, and gastrointestinal discomfort when large amounts (more than 250 ml) is ingested. Eye contact can cause irritation and redness.

Effects of exposure: Chronic exposure may damage fertility or the unborn child.

Hazard class	Hazard category	Rationale for classification
Acute toxicity, oral:	Not classified	Based on available ingredient data.
Acute toxicity, dermal:	Not classified	Based on available ingredient data.
Acute toxicity, inhalation:	Not classified	Based on available ingredient data.
Skin corrosion/irritation:	Not classified	Based on available ingredient data.
Serious eye damage/irritation:	Not classified	Based on available ingredient data.
Respiratory or skin sensitisation:	Not classified	Based on available ingredient data.
Germ cell mutagenicity:	Not mutagenic	Based on available ingredient data.
Carcinogenicity:	Not carcinogenic	Based on available ingredient data.
Reproductive toxicity:	Category 1 B – may damage fertility or the unborn child	Based on the data for Solubor.
STOT single exposure:	Classification not possible	No data available
STOT repeated exposure:	Not classified	Based on available ingredient data.
Aspiration hazard:	Classification not possible	No data available

12. Ecological information

Acute toxicity for freshwater algae:	Not classified	Based on available ingredient data.
Chronic toxicity for freshwater algae:	Not classified	Based on available ingredient data.
Toxicity for other aquatic plants:		No data available
Acute (short-term) toxicity for fish:	Not classified	Based on available ingredient data.
Acute toxicity for crustaceans:	Not classified	Based on available ingredient data.
Chronic (long-term) toxicity for fish:	Not classified	Based on available ingredient data.
Chronic toxicity for crustaceans:	Not classified	Based on available ingredient data.
Toxicity for birds:	LD ₅₀ > 527 mg B/kg	Based on tests with disodium tetraborate.
Toxicity for earthworms:	14-day LC ₅₀ 473 mg B/kg	Based on tests with boric acid.
Toxicity for terrestrial plants:	120-day NOEC root/shoot ratio 2 mg B/kg dwt soil	Based on available data for Solubor.
Toxicity for honeybees:		No information available.
Toxicity for soil micro-organisms:	20-day EC ₁₀ 54 mg B/kg dwt soil	Based on tests with boric acid (nitrogen mineralisation).
Possible impact on sewage treatment:	No risk expected	Based on available ingredient data.
Persistence and degradability:	Non-degradable and persistent	Based on available data for boron.
Bio-accumulative potential:	Not bio-accumulative	Based on available data for boron.
Mobility in soil and environmental fate:	Boron occurs naturally	Range 45 to 124 mg/kg worldwide
Ozone depletion potential:	None	Does not contain halocarbon molecules
Photochemical ozone creation potential:		No data available
Endocrine disrupting potential:	None expected	Based on available ingredient data.
Climate change potential:	None expected	Based on available ingredient data.
Other adverse effects:	None expected	

13. Disposal considerations

Avoid release to the environment. Dispose of waste residues responsibly as low-hazard chemical waste through a licensed waste removal company.

Dispose of the container by rinsing it properly. Do not re-use. Destroy mechanically and dispose of as ordinary waste through a licensed waste removal company.

Refer to the manufacturer or supplier for information on recovery or recycling, for options on reclamation, and on disposal of unused material.

The physical/chemical properties of the product should have no significant effect on disposal procedures.

The product consists mainly of water and no special precautions for incineration are necessary.

There are no special precautions for landfill.

There is no other relevant information.

14. Transport information

UN number:	None. Not classified as dangerous in the context of transport regulations.
UN proper shipping name:	Not applicable.
UN packing group number:	Not applicable.
UN transport hazard class(es):	Not applicable.
A known marine pollutant (IMDG Code)?	Not a marine pollutant.
A known severe marine pollutant?	Not a marine pollutant.
Environmentally hazardous, ADR?	Not classified as dangerous in the context of transport regulations.
Environmentally hazardous, RID?	Not classified as dangerous in the context of transport regulations.
Environmentally hazardous, ADN?	Not classified as dangerous in the context of transport regulations.
Transport in bulk by sea, IMO?	Not classified as dangerous in the context of transport regulations.
There are no special precautions which a user needs to be aware of or needs to comply with.	

15. Regulatory information

Relevant safety regulations:	Regulations for hazardous chemical agents 2021, Department of Employment and Labour (March 2021).
Relevant health regulations:	Occupational Health and Safety Act, 1993 (Act No. 85 of 1993).
Relevant environmental regulations:	The National Environmental Management Act, 107 of 1998 (NEMA). Guidelines on the administration of incidents, as described in section 30 of the NEMA, Department of Environmental Affairs (2019).
Subject to the Montreal Protocol?	No.
Subject to the Stockholm Convention?	No.
Subject to the Rotterdam Convention?	No.
Subject to any prohibitions?	No.
Subject to any restrictions?	No.

16. Other information

SDS identification or reference number: 010

Date of the previous revision of this SDS: Not dated. Previous revision number: Not numbered.

There is no additional information relevant to the material's nature or use, or any other relevant information.

Abbreviations that may have been used:

AND means European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways.

ADR means Agreement concerning the International Carriage of Dangerous Goods by Road.

CAS means Chemical Abstract Service.

Cat. Means Category.

dwt means dry weight.

GHS means Globally Harmonised System of Classification and Labelling of Chemicals.

IMDG Code means International Maritime Dangerous Goods Code.

IMO means International Maritime Organisation.

NEMA means National Environmental Management Act.

RID means Regulations concerning the International Carriage of Dangerous Goods by Rail.

SDS means safety data sheet.

STOT means specific target organ toxicity.

UN means United Nations.

This safety data sheet was compiled in compliance with the following regulations and guidelines:

- a. Regulations for hazardous chemical agents 2021, Department of Employment and Labour (March 2021).
- b. The globally harmonised system of classification and labelling of chemicals (GHS), 9th Revised Edition, United Nations (2021).
- c. Globally harmonised system of classification and labelling of chemicals (GHS), SANS 10234:2019, Ed. 2.00 (2019).