SAFETY DATA SHEET

AgStar Boron

1. IDENTIFICATION

Product name	AgStar Boron
Other names	Nil
Recommended uses	For the correction of boron deficiency
Restrictions on supply	Nil
Supplier details	AgStar New Zealand Pty Limited 4 Putakitaki Street, Lincoln, Christchurch 7608
Distributor details	Farmlands Co-operative Society Limited 535 Wairakei Road, Burnside, Christchurch 8053 0800 200 600
24-hour emergency contact	**0800 CHEMCALL (0800 243 6225)**
National Poison Centre	**0800 POISON (0800 764 766)**

2. HAZARD IDENTIFICATION

Hazard classification

skin irritation Category 2

eye irritation Category 2

reproductive toxicity Category 2

specific target organ toxicity – single exposure Category 3

Signal word **WARNING**

Hazard statements

H315	Causes skin irritation
H319	Causes serious eye irritation
H335	May cause respiratory irritation
H361	Suspected of damaging fertility or the unborn child

Pictograms

Precautionary statements

General	**P101**	If medical advice is needed, have product container or label at hand.
	P102	Keep out of reach of children.
Prevention	**P201**	Obtain special instructions before use.
	P202	Do not handle until all safety precautions have been read and understood.
	P261	Avoid breathing mist or spray.
	P264	Wash face, hands and any exposed skin thoroughly after handling.
	P271	Use only outdoors or in a well-ventilated area.
	P280	Wear protective gloves and eye protection.
Response	**P312**	Call a POISON CENTER or doctor if you feel unwell.
	P302 + P352	IF ON SKIN: Wash with plenty of water.
	P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
	P308 + P313	IF exposed or concerned: Get medical advice.
	P332 + P313	If skin irritation occurs: Get medical advice.
	P337 + P313	If eye irritation persists: Get medical advice.
	P362 + P364	Take off contaminated clothing and wash it before reuse.
	P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Storage	**P405**	Keep locked up.
Disposal	**P501**	Dispose of contents/container to in accordance with the Hazardous Substances (Disposal) Notice 2017.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical identity	CAS Number	Concentration
Boron-monoethanolamine complex (reaction products of monoethanolamine and boric acid (1:3))	26038-87-9	>60 %
Boric acid (residual)	10043-35-3	<10%

4. FIRST-AID MEASURES

Description of first aid measures

Inhalation Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTRE or doctor if they feel unwell.

Skin contact Take off contaminated clothing and wash it before reuse. Wash with plenty of water. If skin irritation persists: Get medical advice.

Eye contact 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.

Ingestion Rinse mouth. Do NOT induce vomiting. Call a POISON CENTRE or doctor if you feel unwell.

Most important symptoms and effects, both acute and delayed

Inhalation Cough, sore throat, shortness of breath. May cause respiratory tract irritation.

Skin contact Redness, mild burning sensation.

Eye contact Redness, pain, tearing, blurred vision.

Ingestion Nausea, abdominal discomfort.

Suspected of damaging fertility or the unborn child (prolonged or repeated exposure).

Indication of any immediate medical attention and special treatment needed

Treat symptomatically and supportively. No specific antidote. For reproductive concerns, obtain medical advice from a specialist if pregnancy is possible or planned.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

Water spray or fog, carbon dioxide (CO_2), dry chemical powder, foam.

Specific hazards arising from the chemical

The product is not flammable and does not support combustion. Wear protective gloves and eye protection. Hazardous combustion products: Oxides of nitrogen, carbon and boron.

Special protective equipment and precautions for fire-fighters

Wear self-contained breathing apparatus and full protective clothing for firefighting if necessary. Cool closed containers exposed to fire with water spray to prevent pressure build-up. Prevent fire-fighting water from entering drains or watercourses.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment, and emergency procedures

Avoid breathing vapours, mist or dust. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing. Wear protective gloves and eye protection (see section 8). Evacuate unnecessary personnel from the spill area. If ventilation is insufficient or irritation occurs, wear respiratory protection.

For emergency responders: Wear appropriate personal protective equipment as indicated in section 8.

Environmental precautions from accidental spills and release

No special environmental precautions are required for this product. Prevent spilled material from entering drains, sewers or watercourses.

Methods and material for containment and cleaning up

Contain and absorb spill with inert, absorbent material (e.g. sand, earth, vermiculite, universal absorbent pads) or collect by pumping (for larger quantities). Small spills may simply be flushed away with plenty of water or wiped up with absorbent material.

Place collected material in suitable labelled containers for disposal (see section 13).

After cleaning, flush area with water.

7. HANDLING AND STORAGE

Precautions for safe handling

Avoid contact with skin and eyes. Wear gloves and eye protection (see section 8).

Use only with adequate general or local exhaust ventilation. Avoid generation of mists or aerosols.

Do not handle until all safety precautions have been read and understood. Suspected of damaging fertility or the unborn child — obtain special instructions before use.

Wash hands and exposed skin thoroughly after handling. Do not eat, drink or smoke when using this product. Contaminated work clothing should be removed immediately and washed before reuse.

Conditions for safe storage

Storage conditions	Store in a well-ventilated place. Keep container tightly closed. Protect from freezing and direct sunlight. Store locked up.
Incompatible materials	Strong acids, strong oxidising agents, aluminium, copper, magnesium and zinc.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational exposure limits

Boric acid (CAS 10043-35-3)	No workplace exposure standard established in New Zealand
Monoethanolamine (CAS 141-43-5)	TWA 0.5 mg/m^3; STEL 0.5 mg/m^3 (WorkSafe NZ). Not applicable to the complexed form.

Engineering controls

Ensure adequate ventilation, especially in confined spaces during mixing or transfer. Use local exhaust ventilation if mist/aerosol is generated.

Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection	Safety glasses/googles or face shield.
Hand protection	Impermeable gloves. Wash hands after handling.
Skin protection	Protective clothing to prevent skin contact.
Respiratory protection	Not normally required; use P2/N95 respirator if ventilation is inadequate or irritation occurs.

9. PHYSICAL AND CHEMICAL PROPERTIES

Property	Value
Physical state	Liquid
Colour	Thick yellow/brown
Odour	Amine
Melting point/freezing point	No data available
Boiling point or initial boiling point and boiling range	No data available
Flammability	Not applicable
Lower and upper explosion limit/flammability limit	Not applicable
Flash point	Not applicable
Auto-ignition temperature	Not applicable
Decomposition temperature	No data available
pH	7.6 (typical)

Property	Value
Kinematic viscosity	No data available
Solubility	Miscible
Partition coefficient n-octanol/water (log value)	No data available
Vapour pressure	No data available
Density and/or relative density	1.375
Relative vapour density	No data available
Particle characteristics	No data available

10. STABILITY AND REACTIVITY

Reactivity	No specific reactivity hazards associated with this product under normal handling and storage conditions.
Chemical stability	The product is stable under recommended storage and handling conditions.
Possibility of hazardous reactions	No hazardous reactions when stored and handled as recommended.
Conditions to avoid	Protect from freezing (may cause irreversible phase separation or container damage). Avoid extreme heat (> 60 °C) and direct sunlight for prolonged periods.
Incompatible materials	Strong acids, acidic salts, strong oxidising agents, aluminium, copper, magnesium and zinc (powder).
Hazardous decomposition products	Under normal conditions of storage and use, no hazardous decomposition products are expected. In the event of fire or thermal decomposition, carbon oxides, nitrogen oxides, and boron oxides may be formed.

11. TOXICOLOGICAL INFORMATION

acute toxicity	Based on available data, the classification criteria are not met.
skin corrosion/irritation	Causes skin irritation (Category 2, H315). Read across from PubChem classification for Monoethanolamine borate, CAS 10377-81-8 (1:1 complex).
serious eye damage/eye irritation	Causes eye irritation (Category 2, H319). Read across from PubChem classification for Monoethanolamine borate, CAS 10377-81-8 (1:1 complex).
respiratory or skin sensitisation	Based on available data, the classification criteria are not met.
germ cell mutagenicity	Based on available data, the classification criteria are not met.

carcinogenicity	Based on available data, the classification criteria are not met.
reproductive toxicity	Suspected of damaging fertility or the unborn child (Category 2, H361). Boric acid (CAS 10043-35-3), EPA CCID.
specific target organ toxicity - single exposure	May cause respiratory irritation (Category 3, H335). Read across from PubChem classification for Monoethanolamine borate, CAS 10377-81-8 (1:1 complex).
specific target organ toxicity - repeated exposure	Based on available data, the classification criteria are not met.
aspiration hazard	Based on available data, the classification criteria are not met.

12. ECOLOGICAL INFORMATION

Aquatic ecotoxicity	Based on available data, not classified as hazardous to the aquatic environment.
Terrestrial ecotoxicity	Based on available data, not classified as hazardous to the terrestrial environment.
Persistence and biodegradability	Readily biodegradable.
Bioaccumulative potential	Low potential for bioaccumulation.
Mobility in soil	High mobility in soil expected due to high water solubility.

13. DISPOSAL CONSIDERATIONS

Unused product, waste or residue	Dispose of in accordance with clause 9 of the Hazardous Substances (Disposal) Notice 2017: Treat to render non-hazardous (e.g. chemical treatment at an approved facility), incinerate or export from New Zealand as waste.
Contaminated packaging	Dispose of in accordance with clause 12 of the Hazardous Substances (Disposal) Notice 2017: Triple rinse the container into the spray tank or treat the container so that the residual contents are below the threshold for the substance to be classified as hazardous. Thereafter, the container can be reused, recycled (delivered to Agrecovery) or sent to landfill. Label should be removed or made illegible.
Special precautions	Follow the precautions of section 6.
Disposal methods that should not be used	Dilution of the substance with any other substance before discharge to the environment is not an acceptable treatment method.

14. TRANSPORT INFORMATION

Not classified as a Dangerous Good by road/rail (NZS 5433), sea (IMDG), or air (IATA/ICAO).

15. REGULATORY INFORMATION

HSNO approval	HSR002571 - Fertilisers (Subsidiary Hazard) Group Standard 2020
Exposure limits	Refer section 8.
HSR	Keep in suitable packaging and labelled appropriately. Include on hazardous substances inventory. Manage the risks to health and safety. Training on the substance must be provided to workers. PPE must be worn when carrying out work with the substance. Secondary containment, emergency response plan, and signage are not triggered.
ACVM	Exempt from registration.

The Montreal Protocol on Substances that Deplete the Ozone Layer	Not applicable
The Stockholm Convention on Persistent Organic Pollutants	Not applicable
The Rotterdam Convention	Not applicable

16. OTHER INFORMATION

Date of preparation	5 December 2025
Review date	5 December 2030

Abbreviations and acronyms

ACVM	Agricultural Compounds and Veterinary Medicines Act 1997
CAS	Chemical Abstracts Service number
CCID	Chemical Classification and Information Database
EC50	Median effective concentration.
ECHA	European Chemicals Agency
EEL	Environmental Exposure Limit.
EPA	Environmental Protection Authority
HSNO	Hazardous Substances and New Organisms Act 1996
HSR	Health and Safety at Work (Hazardous Substances) Regulations 2017
HSWA	Health and Safety at Work Act 2015

LC50	Lethal concentration that will kill 50% of the test organisms inhaling or ingesting it.
LD50	Lethal dose to kill 50% of test animals/organisms.
LEL	Lower explosive level.
PubChem	US National Center for Biotechnology Information database
STEL	Short-Term Exposure Limit
TEL	Tolerable Exposure Limit.
TLV	Threshold Limit Value - an exposure limit set by responsible authority.
TWA	Time-Weighted Average
UEL	Upper Explosive Level
WES	Workplace Exposure Limit

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