# MAX-IN® BORON SAFETY DATA SHEET

## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** **MAX-IN® BORON**
**Other identifier:** **Liquid boron fertilizer**
**Recommended use:** Micronutrient fertilizer
**Restrictions on use:** Agriculture
**Registration Holder:** **Winfield Solutions Registration Holdings (Pty) Ltd.**
Co Reg No 2015/312008/07
PO Box 10413
Aston Manor, 1630, South Africa
**Telephone:** (011) 3962233
**Fax:** (011) 3964666
**Website:** www.villacrop.co.za

**Distributor:** **Villa Crop Protection (Pty) Ltd.**
PO Box 10413
Aston Manor, 1630, South Africa
**Telephone:** (011) 3962233
**Fax:** (011) 3964666
**Website:** www.villacrop.co.za

**Emergency telephone numbers:**
**24 Hr Transport / Spill emergency no:**
Envirosure. +27 31 205 4918
(Hazcall24) +27 86 044 4411
(Client: Villa Crop Protection)
Griffon Poison Information Centre +27 82 446 8946
(Client: Villa Crop Protection)
**Poisoning Emergency telephone numbers:**
Griffon Poison Information Centre +27 82 446 8946
Poisons Information Centre +27 861 555 777
**Villa Crop Protection Emergency number:**
**National Safety, Health and Environmental Manager:**
+27 63 698 0668

## 2. HAZARDS IDENTIFICATION

UN GHS, Regulation EC 1272/2008 [EU-GHS/CLP] EU & SANS 10234:2008

| Hazard classes | Hazard categories | H-statements |
|---|---|---|
| **Health** | | |
| Dermal | Skin Irrit. 2 | H315 |
| Eye | Eye Irrit. 2B | H320 |
| Inhalation | Acute Tox. 4 | H332 |
| Reproduction Toxicity | Repr. 2 | H361 |
| Specific Target Organ Toxicity Repeated Exposure | STOT RE 2 | H373 |

**The most important adverse effects**:
**Physiochemical effects:**
None known.

**Human health effects:**
Harmful if inhaled.
Causes eye irritation.
Causes skin irritation.
Suspected of damaging fertility or the unborn child.
May cause damage to kidneys, liver and central nervous system through prolonged or repeated ingestion or inhalation.

**Label elements:**

**Signal word:** Warning.
**Hazard statements:**
H315: Causes skin irritation.
H320: Causes eye irritation.
H332: Harmful if inhaled.
H361: Suspected of damaging fertility or the unborn child.
H373: May cause damage to kidneys, liver and central nervous system through prolonged or repeated ingestion or inhalation.
**Precautionary statements:**
P202: Do not handle until all safety precautions have been read and understood.
P264: Wash hands and face thoroughly after handling.
P271: Use only outdoors or in a well-ventilated area.
P280: Wear impervious rubber gloves and boots, protective clothing and chemical safety goggles.
P302/352: IF ON SKIN: Wash with plenty of water and non-abrasive soap.
P305/351/338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308/313: If exposed or concerned: Get medical attention.
P332/313: If skin irritation occurs: get medical advice.
P337/313: If eye irritation persists: Get medical advice.
P362/364: Take off contaminated clothing and wash it before reuse.
P405: Store locked up.
**Special labelling of certain mixtures:**
None known.
**Other hazards:**
None known.
**Toxicity:**
Classification according to GHS: Cat. 4
Classification according to WHO: II

## 3. COMPOSITION / INFORMATION ON INGREDIENTS

**Substance/Mixture:** Mixture.
**Composition:**

| Chemical Name | CAS | Conc. (wt %) | Classification EC 1272/2008 |
|---|---|---|---|

| | | | |
|---|---|---|---|
| Boric acid | 10043-35-3 | ≤ 48% | Repr. 1B (H360) |
| Monoethanolamine | 141-43-5 | ≤ 18% | Acute Tox. 4 (H302)<br>Acute Tox. 4 (H312)<br>Acute Tox. 4 (H332)<br>Skin Corr. 1B (H314) |

## 4. FIRST AID MEASURES

Remove the victim from the area of exposure. Wash off remaining material with plenty of water. In the event of any complaints or symptoms, avoid further exposure and consult a doctor if symptoms persist.
**Inhalation:** Remove person from contaminated area to fresh air and assist breathing as needed. Seek medical attention if irritation occurs.
**Skin:** Remove contaminated clothing and wash before re-using. Flush skin with water and then wash with soap and water. Seek medical attention if irritation persists.
**Eyes:** Flush eyes with clean water for at least 15 minutes. Lift eyelids to facilitate irrigation. If present, remove contact lenses after 5 minutes and continue rinsing. Seek medical attention if irritation persists.
**Ingestion:** Seek medical attention or call a poison control center for treatment advice. Do not induce vomiting unless instructed to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.
**Anticipated acute effects:**
Harmful if inhaled.
Causes eye irritation.
Causes skin irritation.
**Anticipated delayed effects:**
Suspected of damaging fertility or the unborn child.
May cause damage to kidneys, liver and central nervous system through prolonged or repeated ingestion or inhalation.
**Most important symptoms/effects:**
**Eyes:** Causes moderate but reversible eye irritation.
**Skin:** Causes moderate but reversible skin irritation. Longer dermal exposure results in more significant irritation.
**Inhalation:** Inhalation may cause irritation of the upper respiratory tract and can lead to central nervous system depression.
**Ingestion:** May cause gastric upset if swallowed.
**Advice to physician:** There is no specific antidote known. Treat symptomatically and supportively.

## 5. FIRE-FIGHTING MEASURES

**Suitable Extinguishing Media:** Water spray or fog, carbon dioxide, dry chemical or foam.
**Unsuitable Extinguishing Media:** Water jet.
**Specific hazards:** Toxic gases may be formed in a fire situation. Carbon monoxide and other asphyxiates may form as well. Closed containers may explode from vapour expansion in high heat.
**Special Fire Fighting Procedures:** Remove spectators from surrounding area. Isolate the fire area and evacuate all personnel downwind of the fire. Fight fire from maximum distance and use unmanned hose holder or monitor nozzles. Keep upwind. Avoid inhaling hazardous vapours and fumes from burning materials. Remove container from fire area if possible and without risk. Do not scatter the burning material. Contain water used for fire fighting for later disposal. Do not allow spilled product to enter sewers or waterways.
**Personal protective equipment:** Wear NIOSH/MSHA approved self-contained breathing apparatus and full bunker gear.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautions:** Avoid contact with skin and eyes. Do not breathe in fumes. Ventilate area of spill or leak, especially in contained areas.
**Protective equipment:** Refer to Section 8 for personal protective equipment to be worn during containment and clean-up of a spill involving this product.
**Emergency procedures:** Alert firefighting personnel, evacuate unprotected personnel and animals.
**Environmental Precautions:** Prevent spilled product from entering sewers, waterways or ground water.
**Methods and Materials for Containment:** Contain spilled product by diking area with sand or earth.
**Methods and Materials for Clean-up:** Cover contained spill with an inert absorbent material such as sand, vermiculite or other appropriate material. Vacuum, scoop, or sweep up material and place in a container for disposal. Do not place spilled material back in original container.

## 7. HANDLING AND STORAGE

**Handling:**
**Precautions for safe handling:** Avoid contact with skin and eyes. Ensure adequate ventilation during handling and use. Do not handle broken containers without protective equipment. Immediately clean up spills that occur during handling. Keep containers tightly closed when not in use. In the case of contact with the product refer to First Aid Measures – Section 4.
**General occupational hygiene:** Practice good hygiene when using this material. Wash hands before eating, drinking, chewing gum, smoking, using the toilet or applying cosmetics. Worker should shower at the end of each workday. Launder all clothing before it is re-used.

**Storage:**

**Conditions for safe storage:** Keep out of reach of unauthorised persons, children and animals. Store in its original labelled container tightly closed, in an isolated, dry, cool and well- ventilated area. Avoid excessive heat. Avoid cross contamination with other pesticides and fertilisers.
**Incompatible substances and mixtures:** Refer to product label.
**Packaging material:** Plastic bottles.

## 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

**Permissible concentration**

| Components | Exposure limits | Type of exposure limit | Source |
|---|---|---|---|
| Boric acid | 2 mg/m$^3$ | TWA | ACGIH TLV |
| Mono-ethanolamine | 6 mg/m$^3$ | TWA | OSHA PEL |

**Engineering Controls:**
It is essential to provide adequate ventilation. The measures appropriate for a particular worksite depend on how this material is used and on the extent of exposure. Local Exhaust: Provide general or local exhaust ventilation systems to maintain airborne concentrations below OSHA PELs or other specified exposure limits. Local exhaust ventilation is preferred. Ensure that control systems are properly designed and maintained. Comply with occupational safety, environmental, fire, and other applicable regulations.

**Personal Protective Equipment:**
**Respiratory Protection:** For most well-ventilated conditions, no respiratory protection should be needed. If airborne concentrations exceed exposure limits, use a NIOSH approved air-purifying respirator with cartridges/canisters approved for organic vapors.
**Hand Protection:** Wear chemically protective gloves to prevent exposure to skin.
**Eye Protection:** To avoid contact with eyes, wear chemical safety goggles or safety glasses and full face shield. Contact lenses are not protective eye devices.
**Skin and Body Protection:** Wear long-sleeve shirt, long pants and shoes plus socks to prevent skin contact.
**Emergency eyewash:** Where there is any possibility that an employee's eyes may be exposed to this mixture; the employer should provide an eyewash fountain or appropriate alternative within the immediate work area for emergency use.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance:** Tan to brown liquid.
**Odour:** Amine odour.
**pH:** Not available.
**Melting point:** Not available.
**Freezing Point:** Not available.
**Boiling Point:** Not available.
**Flash Point:** Not available.
**Flammability:** Not available.
**Upper/lower explosion limits:** Not available.
**Vapour Pressure (mm Hg):** Not available.
**Relative Vapour Density:** Not available.
**Density:** 1.26 – 1.28 kg/ℓ
**Specific gravity:** 1.27
**Solubility:** Completely soluble.
**n-octanol/water partition coefficient:** Not available.
**Auto-ignition temperature:** Not available.
**Decomposition temperature:** Not available.
**Viscosity:** Not available.

## 10. STABILITY AND REACTIVITY

**Chemical Stability:** Stable for 2 years at ambient temperature and pressure, under normal storage and handling conditions, if containers are tightly sealed. Avoid storage under extreme temperatures and conditions. Store below 50°C, preferably below 30°C, and not for prolonged periods in direct sunlight.
**Reactivity:** None known.
**Possibility of Hazardous Reactions:** None known.
**Conditions to Avoid:** Avoid excessive heat and freezing temperatures.
**Incompatible Materials:** Strong acids and bases.
**Hazardous Decomposition Products:** Oxides of nitrogen and other chemicals may be formed in a fire situation. Carbon monoxide and other asphyxiates may form as well.

## 11. TOXICOLOGICAL INFORMATION

**ACUTE TOXICITY:**
**Calculated according to GHS.**
**Inhalation $LC_{50}$** 3 mg/ℓ
**Skin Irritation:** Causes skin irritation.
**Eye Irritation:** Causes eye irritation.
**Skin Sensitization:** Not available.
**Respiratory Sensitization:** Not available.
**Reproductive cell mutagenicity:** Not available.
**Carcinogenicity:** Not available.
**Reproductive toxicity:** Suspected of damaging fertility or the unborn child.
**Specific target organ toxicity – single exposure:** Not available.
**Specific target organ toxicity – repeated exposure:** May cause damage to kidneys, liver and central nervous system through prolonged or repeated ingestion or inhalation.
**Aspiration hazard:** Not available.
**Chronic Effects:** Prolonged or repeated oral exposure may have a negative impact on fertility and the reproductive system. Prolonged or repeated inhalation of product may have an impact on the central nervous system and/or lungs.

**POTENTIAL ADVERSE EFFECTS:**
**Inhalation:** Inhalation may cause irritation of the upper respiratory tract and can lead to central nervous system depression if repeatedly exposed.
**Skin contact:** Causes moderate but reversible skin irritation. Longer dermal exposure results in more significant irritation.
**Eye contact:** Causes moderate but reversible eye irritation.
**Ingestion:** May cause gastric upset if swallowed.

## 12. ECOLOGICAL INFORMATION

This product is not anticipated to be acutely toxic to aquatic organisms based upon component data.
**ECOTOXICITY DATA:**

| | | |
|---|---|---|
| **Fish:** | | |
| $LC_{50}$ (96h) | | 1375 mg/ℓ |
| **Daphnia:** | | |
| $EC_{50}$ (48h) | *Daphnia magna* | 151 mg/ℓ |
| **Aquatic plant:** | | |
| $LC_{50}$ (72h) | Algae | 48 mg/ℓ |

**ENVIRONMENTAL EFFECTS:**
**Persistence and degradability:** Not determined.
**Bio-accumulative Potential:** Not determined.
**Mobility in soil:** Not determined.
**Other adverse effects:** Not determined.

## 13. DISPOSAL CONSIDERATIONS

**Waste:** Do not contaminate rivers, dams or any other water sources with the product or used containers. The product may be taken to a registered waste disposal site or incineration plant. Where possible, recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations.
**Container:** Emptied flasks/containers retain vapour and product residues. Observe all labelled safeguards until container/bottle is destroyed. Do not re-use the empty container/flask for any other purpose but destroy it by perforation and flattening and bury in an approved dumpsite. Prevent contamination of food, feedstuffs, drinking water and eating utensils.
Comply with local legislation applying to waste disposal.

## 14. TRANSPORT INFORMATION

**UN Number:** Not regulated
**Road Transport ADR/IRD:**
Class: 9
Packaging group: III
**Maritime Transport IMDG/IMO:**
Class: 9
Packaging group: III
**Marine Pollutant (Y/N)**: **No**
**Air transport IATA/ICAO:**
Class: 9
Packaging group: III
**Special/Environmental Precautions:** None known.
**Transport in bulk** (according to MARPOL 73/78, Annex II and the IBC code): Not available.

## 15. REGULATORY INFORMATION

**Safety, health and environmental regulations/legislation for the mixture:**
OHSA 1993 Regulations for Hazardous Chemical Substances.

**Relevant information regarding restrictions:** None.

**EU regulation:** Regulation EC1272/2008 (EU-GHS/CLP)

**Other national regulations:** None.

**Chemical Safety Assessment carried out?** No

## 16. OTHER INFORMATION

**Packaging:** 500ml, 1, 5, 10, 20 and 25L plastic bottles.

**Additional H statements (formulants):**
**H302:** Harmful if swallowed.
**H312:** Harmful in contact with skin.
**H314:** Causes severe skin burns and eye damage.
**H360:** May damage fertility or the unborn child if ingested.
**Disclaimer:** The information on this sheet is not a specification; it does not guarantee specific properties. The information is intended to provide general guidance as to health and safety based upon our knowledge of the handling, storage and use of the product. It is not applicable to unusual or non-standard uses of the product nor where instructions or recommendations are not followed. All information is given in good faith but without guarantee in respect of accuracy, and no responsibility is accepted for errors and omissions or the consequence thereof.

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For detailed information on revisions, contact the Registration holder.