



Novagen Innovations (Pty) Ltd. t/a Agri Novagenix
Company registration number: 2020/891524/07 ; VAT: 4150295469
PO Box 1224, Isando, 1600, South Africa

SAFETY DATA SHEET THE BOSS

Reg. No. / Nr L11886 Act No. 36 of 1947 / Wet Nr 36 van 1947

Section 1. Identification of the material and the supplier

Product: **THE BOSS**
Product Use: Fungicide
Restriction of Use: Refer to Section 15

Supplier: **Novagen Innovations (Pty) Ltd t/a Agri Novagenix**
PO Box 1224
Isando, 1600
South Africa
www.novagenag.co.za

Emergency No: POISON CENTRE (UNITAS HOSPITAL) 012 664 1100
TYGERBERG 021 931 6129
RED CROSS 021 689 5227
RAPID SPILL RESPONSE 0800 775 3305
GRIFFON POISON CENTRE 082 446 8946

Date of SDS Preparation: 05 February 2025

Section 2. Hazards Identification

Classification of the substance or mixture

Globally Harmonised System, EU (GHS) and according to regulation EC No 1272/2008 [CLP]

Long-term (Chronic) Aquatic hazard Category 2; H411

For the full text of the H-Statements mentioned in this Section, see Section 16.

Label elements:

Globally Harmonised System, EU (GHS) and according to regulation EC No 1272/2008 [CLP]

Pictograms



Signal Word: **NONE**

Hazard statement(s)

H411: Toxic to aquatic life with long lasting effects

Precautionary statement(s)

General:

P101 - If medical advice is needed, have product container or label at hand.

P102 - Keep out of reach of children.

P103 - Read carefully and follow all instructions.

Prevention:

P273 - Avoid release to the environment.

Response:

P391 - Collect spillage.

Storage:

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Disposal:

P501 - Dispose of contents/container in accordance with national regulations.

Supplemental Hazard Statements: none

2.3 Other

Other hazards

No other hazards known

Section 3. Composition / Information on Hazardous Ingredients

Mixture

Suspension Concentrate

Boscalid 500 g/L

Globally Harmonised System, EU (GHS) and according to regulation EC No 1272/2008 [CLP]

Ingredients	Concentration of hazardous ingredient	CAS NUMBER.	Classification
Boscalid	50%	188425-85-6	Aquatic Chronic Cat. 2; H411

For the full text of the H-Statements mentioned in this Section, see Section 16.

Section 4. First Aid Measures

Provide medical personnel with the container label, product name or safety data sheet (SDS) when seeking medical attention.

Routes of Exposure:

If in Eyes	Immediately flush eyes with plenty of water for at least 15 minutes holding the eyelids open. Remove contact lenses, if present and easy to do, after the first five minutes. Seek medical assistance if irritation occurs.
If on Skin	Immediately flush body and clothes with large amounts of water and non-abrasive soap. Remove contaminated clothing and footwear. Wash affected areas with soap and water. Do not rub skin. Persons providing first aid must wear gloves to avoid self-contamination. Seek medical assistance if irritation occurs.
If Swallowed	Never give anything by mouth to an unconscious person. Do not induce vomiting unless instructed to do so by a physician. Have the patient sip a glass of water if they are alert and able to swallow. For advice, contact the National Poisons Centre. Seek medical assistance immediately.
If Inhaled	Remove patient to fresh air. Loosen clothing around neck. Lie down and keep warm and rested. If breathing is shallow or has stopped ensure airway is clear and apply resuscitation. Seek medical assistance if necessary.

Most important symptoms and effects, both acute and delayed

No available data

Treatment:

No specific antidote known. Treat symptomatically and supportively.

Section 5. Fire Fighting Measures

Hazards from products	Exposure to combustion products may be a hazard to health. Do not allow run-off from firefighting to enter drains or water courses.
Suitable Extinguishing media	Small fires: Fine water spray, alcohol foam, carbon dioxide, or dry chemical. Do not use high volume water jet. Large fires: Water spray or fog can be used to cool unaffected stock. Avoid the accumulation of polluted run-off from the site. Remove the container from the fire if possible and without risk.
Recommended protective clothing & Precautions for firefighters	Firefighting: Wear SCBA and chemical-protective clothing which includes fire-fighting helmet, coat, trousers, boots, and gloves. Self-contained breathing apparatus is required. During a fire, smoke may contain the original material in addition to unidentified toxic and/or irritating compounds. Remove spectators from surrounding area and isolate the fire area. Use a recommended extinguishing agent for the type of surrounding fire. Fight fire from maximum distance and use unmanned hose holder or monitor nozzles. Contain fire control agents for later disposal. Do not allow extinguishing medium to contact container contents. Remove undamaged containers from

	fire area if it is safe to do so. Keep upwind and away from low areas where the fumes can accumulate. Eliminate ignition sources. Avoid inhaling hazardous vapours and fumes from burning materials. Remove container from fire area if possible and without risk. Water can be used to cool unaffected containers but must be contained for later disposal. Do not scatter the material. Dispose of extinguishing agent and spillage in a safe way at a later stage. Prevent use of contaminated buildings, area, and equipment until decontaminated. Water runoff can cause environmental damage. Contain run-off water with, for example, temporary earth barriers. Additional provisions: Act in accordance with the Internal Emergency Plan and the Information Sheets on actions to take after an accident or other emergencies. In the event of a fire, wear full protective clothing and self-contained breathing apparatus with full-face piece operated in the pressure demand or other positive pressure mode. Personal protective equipment: Wear appropriate safety clothing and eye/face protection. Do not inhale vapour or spray. Avoid contact with spilled product or contaminated surfaces. Avoid contact with skin and eyes. Avoid inhalation of the spray or fumes. For personal protection see Section 8.
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Section 6. Accidental Release Measures

Personal precautions:

Isolate area. Use personal protective clothing. Keep unnecessary and unprotected personnel from entering the area. Avoid contact with the skin, eyes, and clothing. Wash hands after use. After each day's use, wash gloves, face shield or goggles and contaminated clothing. Ventilate area of spill or leak, especially in contained areas.

For personal protection see Section 8.

Environmental precautions:

Do not contaminate waterways, drains and groundwater. If contamination of waterways, drains, rivers, or lakes is unavoidable, warn the local authorities (Police and Department of Water/Environmental affairs) immediately. Do not discharge into the subsoil/soil. Prevent further leakage or spillage if safe to do so. Prevent spreading over a wide area (e.g. by containment or oil barriers). Retain and dispose of contaminated wash water. Local authorities should be advised if significant spillages cannot be contained. Prevent from entering into soil, ditches, sewers, waterways and/or groundwater.

Spill and Disposal procedures:

Cleaning procedure:

In accordance with local and national regulations. Do not contaminate water, food, or feed by disposal. Prevent further leakage or spillage if safe to do so.

Do not flush into surface water or sanitary sewer system.

If the product contaminates rivers and lakes or drains inform respective authorities. Contain spillage. Soak up with a suitable inert absorbent material (such as sand, silica gel, acid binder, universal binder, saw dust) Keep in suitable, closed containers for disposal.

Clean contaminated surface thoroughly.

Clean with detergents.

Retain and dispose of contaminated wash water.

Waste Disposal: In accordance with local and national regulations. Do not contaminate water, food, or feed by disposal. Prevent further leakage or spillage if safe to do so.

Do not flush into surface water or sanitary sewer system.

If the product contaminates rivers and lakes or drains inform respective authorities. Contain spillage, Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Collect and transfer the product into a properly labelled and tightly closed container. Clean contaminated floors and objects thoroughly, observing environmental regulations. Keep in suitable, closed containers for disposal.

Retain and dispose of contaminated wash water.

Container Disposal: Refer to the product label for instructions.

Containers and packages must be completely emptied before disposal. Rinse empty container three times with a volume of water equal to a minimum of 30% of that of the container. Add the rinsings to the contents of the spray tank before destroying the empty container. Destroy the empty container by perforation and flattening and do not use for any other purpose. Store appropriately until it can be taken to a waste treatment facility authorised to destroy waste in terms of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) and the relevant waste management regulations for disposal. Empty containers and product should not be burnt.

Reference to other sections

Information regarding safe handling, see section 7.

Information regarding personal protective equipment, see section 8.

Information regarding waste disposal, see section 13.

Section 7. Handling and Storage

Precautions for Handling:

Provide sufficient air exchange and/or exhaust in work rooms. Avoid formation of respirable particles. Do not breathe vapours/dust. Do not smoke. Handle in accordance with good industrial hygiene and safety practice. Avoid exposure - obtain special instructions before use. Smoking, eating and drinking should be prohibited in the application area. Do not get on skin or clothing. Avoid inhalation of vapour or mist. Avoid contact with skin and eyes. Keep container tightly closed. Take care to prevent spills, waste and minimize release to the environment. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection. Use with local exhaust ventilation.

Precautions for Storage:

Store in a closed container. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Keep in properly labelled containers. Store in accordance with the particular national regulations. Keep away from heat and sources of ignition. Vapours may form explosive mixture with air. Take measures to prevent the build up of electrostatic charge. Use only explosion-proof equipment. Store in a place accessible by authorized persons only. Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from freezing. Keep away from direct sunlight.

Specific end use(s): Use only according to the label.

Section 8 Exposure Controls / Personal Protection

Occupational exposure limits:

No data available.

Engineering Controls / Industrial Hygiene

Comply with occupational safety, environmental, fire and other applicable regulations.

It is essential to provide adequate ventilation. The measures appropriate for a particular work site depend on how this material is used and on the extent of exposure. Ensure that control systems are properly designed and maintained. Comply with occupational safety, environmental, fire, and other applicable regulations.

Personal Protection Equipment

Eyes	Wear goggles (conforming to EN166, Field of Use = 5 or equivalent).
Hands	Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. Wash gloves when contaminated. Dispose of when contaminated inside, when perforated or when contamination on the outside cannot be removed. Wash hands frequently and always before eating, drinking, smoking or using the toilet. Material: Nitrile rubber Rate of permeability: > 480 min Glove thickness: > 0.4 mm Protective index: Class 6 Directive: Protective gloves complying with EN 374.
Skin	Wear standard coveralls and Category 3 Type 6 suit. If there is a risk of significant exposure, consider a higher protective type suit. Wear two layers of clothing wherever possible. Polyester/cotton or cotton overalls should be worn under chemical protection suit and should be professionally laundered frequently. If chemical protection suit is splashed, sprayed or significantly contaminated, decontaminate as far as possible, then carefully remove and dispose of as advised by manufacturer.
Respiratory	Wear respirator with an organic vapours and gas filter mask (protection factor 10) conforming to EN140 type A or equivalent. Respiratory protection should only be used to control residual risk of short duration activities, when all reasonably practicable steps have been taken to reduce exposure at source e.g. containment and/or local extract ventilation. Always follow respirator manufacturer's instructions regarding wearing and maintenance.
General	Keep away from food, drink and animal feedstuffs. No eating, drinking or smoking during use. Wash hands and face before breaks and after work. Suitable or appropriate respiratory and eye protection should also be worn. Use good personal hygiene. Do not consume or store food in the work area. Wash hands before smoking or eating. When prolonged or frequently repeated contact could occur, use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

Section 9 Physical and Chemical Properties

Appearance	Liquid, Suspension concentrate
Colour	Off white

Odour	Characteristic
Odour Threshold	No data available
pH	5-8
Boiling/Melting Point	No data available
Freezing Point	No data available
Flash Point	No data available
Flammability	Not flammable
Upper and Lower Explosive Limits	Not explosive
Vapour Pressure	No data available
Relative Vapour Density	No data available
Density	0.9 – 1.2
Water Solubility	Suspends in water
Partition Coefficient:	Boscalid: log KOW 2.96
Ignition Temperature	No data available
Decomposition Temperature	No data available
Viscosity	Dynamic viscosity: No data available Kinematic viscosity: No data available.
Particle Characteristics	No data available
Surface tension	No data available

Section 10. Stability and Reactivity

Stability of Substance	Stable under normal conditions. Stable for 24 months. Avoid exposure elevated temperatures. Thermally stable at recommended temperatures and pressures. No decomposition if stored and applied as directed. Store below 50°C, preferably below 30°C.
Possibility of hazardous reactions	None known.
Conditions to Avoid	Excessive heat, freezing, and direct sunlight.
Incompatible Materials	Store only in the original container.
Hazardous Decomposition Products	No decomposition products expected under normal conditions of use.

Section 11 Toxicological Information

Acute Effects:

Oral	GHS: Not classified
Dermal	GHS: Not classified
Inhalation	GHS: Not classified
Eye	GHS: Not classified
Skin	GHS: Not classified

Chronic Effects:

Carcinogenicity	GHS: Not classified
Reproductive Toxicity	GHS: Not classified
Germ Cell Mutagenicity	GHS: Not classified
Aspiration	GHS: Not classified
STOT/SE	GHS: Not classified
STOT/RE	GHS: Not classified

Section 12. Ecotoxicological Information

Ecological effects information	Fish: Boscalid: LC50 (96h): <i>Oncorhynchus mykiss</i> (rainbow trout): 2,7 mg/l LC50 (96h): <i>Lepomis macrochirus</i> (Bluegill sunfish) > 3.7 mg/l. GHS: Not classified <u>Aquatic chronic toxicity:</u> Boscalid Not readily biodegradable. Calculated BCF in fish: 42 (log KOW 2.96), this suggests that the potential for bioconcentration in aquatic organisms is moderate. GHS: Aquatic chronic category 2
Persistence and degradability	Information based on Boscalid active: Animals: Boscalid was readily absorbed and excreted following single oral 50 mg/kg; at single 500 mg/kg or 15 doses of 500 mg/kg, absorption was saturated. Excretion mainly by faeces (80-98%). Biliary excretion 40-50% of faecal activity at 50 mg/kg, 10% at 500 mg/kg. Urine, about 16% at 50 mg/kg, 3-5% at 500 mg/kg. Absorption about 56% at 50 mg/kg and 13-17% at 500 mg/kg. Excretory patterns similar by gender or radiolabel position. Metabolites (hydroxylation and conjugation products) were consistent with Phase I oxidation reactions followed by Phase II conjugation with glucuronic acid or sulphate, or by conjugation of the parent with glutathione with cleavage to sulphate metabolites. Plants: Boscalid is persistent, is stable to most environmental degradation and plant metabolism processes Soil/Environment: Boscalid production may result in its release to the environment through various waste streams; its use as a fungicide will result in its direct release to the environment. If released to air, a vapor pressure of 5.4X10⁻¹⁰ mm Hg at 20 °C indicates boscalid will exist solely in the particulate phase in the atmosphere. Particulate-phase boscalid will be removed from the atmosphere by wet and dry deposition. Boscalid is stable to photolysis in water and, therefore, is not expected to be susceptible to direct photolysis by sunlight. If released to soil, boscalid is expected to be immobile based upon an estimated K_{oc} of 9500. Volatilization from moist soil surfaces is not expected to be an important fate process based upon a Henry's Law constant of 5.11X10⁻¹¹ atm-cu m/mole. Boscalid is not expected to volatilize from dry soil surfaces based upon its vapor pressure. Biodegradation half-lives in soil ranging from 96 to 578 days indicate that biodegradation is not an important environmental fate process in soil or water. If released into water, boscalid is expected to adsorb to suspended solids and sediment based upon the estimated K_{oc}. Volatilization from water surfaces is not expected to be an important fate process based upon this compound's estimated Henry's Law constant. An estimated BCF of 42 suggests the potential for bioconcentration in aquatic organisms is moderate. Boscalid is

	stable to hydrolysis. Occupational exposure to boscalid may occur through inhalation and dermal contact with this compound at workplaces where boscalid is produced or used. Monitoring data indicate that the general population may be exposed to boscalid via ingestion of some fruits and wines, dermal contact with spray in the vicinity of farms applying boscalid and contact with contaminated surface water or sediments in agricultural regions using this fungicide. Based on a classification scheme(1), an estimated Koc value of 9500(SRC), determined from a structure estimation method(2), indicates that boscalid is expected to be immobile in soil(SRC). Volatilization of boscalid from moist soil surfaces is not expected to be an important fate process(SRC) given a Henry's Law constant of 5.11×10^{-11} atm-cu m/mole(3). Boscalid is not expected to volatilize from dry soil surfaces(SRC) based upon a vapor pressure of 5.4×10^{-10} mm Hg at 20 °C(3). Biodegradation half-lives in soil ranging from 96 to 578 days(4) indicate that biodegradation is not an important environmental fate process in soil.
Bioaccumulation	Boscalid does not bioaccumulate An estimated BCF of 42 suggests the potential for bioconcentration in aquatic organisms is moderate.
Mobility in Soil	The Koc of boscalid is estimated as 9500(SRC), using a log Kow of 2.96(1) and a regression-derived equation. According to the classification scheme, this estimated Koc value suggests that boscalid is expected to be immobile in soil(SRC). Boscalid is expected to sorb to aquatic sediments.
Other adverse effects	This substance is not considered to be persistent, bioaccumulative and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulative (vPvB). This substance / mixture contains no ingredients that are on the Montreal Protocol list of substances that deplete the ozone layer.
Precautions:	Do not allow to enter waterways.

Section 13. Disposal Considerations

Disposal Method:

In accordance with local and national regulations.

If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities. This information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. If the material as supplied becomes a waste, follow all applicable regional, national and local laws. This product and its container must be disposed of by a waste treatment facility authorised to destroy waste in terms of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) and the relevant waste management regulations. Do not dispose into, or allow contact with, municipal sewerage systems or open water bodies. Do not bury.

Contaminated packaging:

Contaminated packaging should be emptied as far as possible. If containers cannot be recycled, they should be disposed of together with the waste chemical. Do not reuse empty containers. Empty containers retain product residue. Triple rinse, or equivalent, empty container, return rinse water to dilution mixture, and dispose of dilution mixture as a hazardous waste if it cannot be disposed of by use according to label instructions. Consult provincial environment department for advice on waste disposal. Industrial/commercial waste may be handled at licensed facilities only. Waste shipments must be securely packaged and properly labelled. Only licensed carriers may be used for transport. If recycling, close container and return clean containers to recycler or designated collection point. If not recycling, break, crush or puncture and take to a waste treatment facility authorised to destroy waste in terms of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) and the relevant waste management regulations for disposal.

Special precautions during disposal:

Waste resulting from the use of this product cannot be reused or reprocessed. Never pour untreated waste or surplus products into public sewers or where there is any danger of run-off or seepage into water systems. Do not contaminate rivers, dams or any other water sources with the product or used containers. Triple rinse containers, add rinsate to the spray tank, then offer the container for recycling/reconditioning, or puncture top, sides and bottom and take to a waste treatment facility authorised to destroy waste in terms of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) and the relevant waste management regulations for disposal. If on-site container disposal is necessary, triple rinse empty container with water, add rinsate to the spray tank. Puncture top, sides and bottom, crush, and store appropriately until it can be taken to a waste treatment facility authorised to destroy waste in terms of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) and the relevant waste management regulations for disposal. Empty containers and product should not be burnt.

Section 14 Transport Information

Rail/road (RID/ADR):

Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Boscalid 50%)
UN number	3082
Class	9
Packing group	III
Environm. Haz. Mark	Yes

Sea (IMDG code):

Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Boscalid 50%)
UN number	3082
Class	9
Packing group	III
Marine pollutant	Yes
Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC code	Consult IMO regulations before transporting ocean bulk.

Air (ICAO/IATA):

Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Boscalid 50%)
UN number	3082

Class	9
Packing group	III
Environm. Haz. Mark	Yes

Section 15	Regulatory Information
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Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

Chemical Safety Assessment

For this product a chemical safety assessment was not carried out.

Section 16	Other Information
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Full text of H-Statements referred to under sections 2 and 3.**Abbreviations and acronyms**

ADR European Agreement concerning the International Carriage of Dangerous Goods by Road
CAS-Nr. Chemical Abstracts Service number
CLP Classification, Labelling and Packaging
EC-No. European community number
EU European Union
GHS Globally Harmonized System
IATA International Air Transport Association
IBC International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code)
ICAO International Civil Aviation Organization
IMDG International Maritime Dangerous Goods
LCx Lethal concentration to x %
MARPOL: International Convention for the prevention of marine pollution from ships
PBT Persistence, Bioaccumulation and Toxic
vPvB Very persistent and very bioaccumulative
RID Regulations concerning the International Carriage of Dangerous Goods by Rail
STOT SE Specific target organ toxicity single exposure.
STOT RE Specific target organ toxicity repeated exposure.
UN United Nations

For proper and safe use of this product, please refer to the approval conditions laid down on the product label. The data contained in this safety data sheet is based on our current knowledge and describes the product only with regard to safety requirements. The data does not describe the products properties. Neither should any agreed property nor the suitability of the product for any specific purpose be deduced from the data contained in the safety data sheet. It is the responsibility of the recipient of the product to ensure any existing laws and legislation are observed.

The information herein is given in good faith, but no warranty, express or implied is made.

Issue Date: 05 February 2025 Review Date: 05 February 2030