

SAFETY DATA SHEET

Issue No: 1.0

First print date: 21 August 2023

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: **BOSTRIN 380 WG**

Other means of identification: Boscalid 252 g/kg + Pyraclostrobin 128 g/kg

Recommended Use: Agricultural fungicide

Supplier: ICA International Chemicals (Pty) Ltd

Address: 28 Planken Street
Plankenbrug Industrial
STELLENBOSCH · 7600 · SOUTH AFRICA

Telephone No: +27-21 886 9812

Fax No: +27-21 886 8209

Emergency Tel No: Griffon Poison Information Centre: +27-82 446 8946
Human Poison Helpline: +27-861 555 777

2. HAZARD IDENTIFICATION

GHS Classification of product

Acute Inhalation – Category 4
Skin Irritation – Category 2
Eye Irritation – Category 1
Acute Aquatic Toxicity – Category 1
Chronic Aquatic Toxicity – Category 1

Label Elements

Classification and Labelling of Chemicals (GHS) Rev 9, 2021; Regulation EC No. 1272/2008 [EU-GHS/CLP]



Signal word

DANGER

Hazard Statements

H315 – Causes skin irritation
H318 – Causes serious eye damage
H332 – Harmful if inhaled
H410 – Very toxic to aquatic life with long lasting effects

General Precautionary Statements

P101: If medical advice is needed, have product container or label at hand.
P102: Keep out of reach of children.

Prevention Precautionary Statements

P103: Read carefully and follow all instructions.
P261: Avoid breathing dust, fumes and mist.
P264 + P265: Wash hands and exposed skin thoroughly after handling. Do not touch eyes.
P271: Use only outdoors or in a well-ventilated area.
P273: Avoid release to the environment.

Response Precautionary Statements

P280: Wear protective gloves/protective clothing/eye and face protection.
P302 + P352: IF ON SKIN: Wash with plenty of soap and water.
P332 + P317: If skin irritation occurs: Get medical help.
P321: For specific treatment see first aid measured on this SDS.
P304 + P340 + P317: IF INHALED: Remove person to fresh air and keep comfortable for breathing. Get medical help.
P305 + P354 + P338 + P317: IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical help.
P362 + P364: Take off contaminated clothing and wash it before reuse.

Storage Precautionary Statements
 Disposal Precautionary Statements

P391: Collect spillage.
 P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
 P501: Dispose of contents and container in accordance with national regulations.

3. COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT(S)	CAS NO:	CONCENTRATION % (w/w)	CLASSIFICATION EC1272/2008
Boscalid	188425-85-6	25.2	Aquatic Chronic Category 2, H411
Pyraclostrobin	175013-18-0	12.8	Acute Inhalation Toxicity Category 3 H331; Skin Irritation Category 2, H315; Aquatic Acute Category 1, H400; Aquatic Chronic Category 1, H410
Calcium dodecylbenzenesulphonate	26264-06-2	< 10	Acute Oral Toxicity Category 4, H302; Skin Irritation Category 2, H315; Eye Damage Category 1, H318; Aquatic Chronic Category 4, H413

There are no additional ingredients present which, within the current knowledge of the provider of this SDS, and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section. See section 16 for legend of additional H-phrases not in section 2.

4. FIRST AID MEASURES

Show this SAFETY DATA SHEET to a doctor.

INHALATION:

- Remove the victim from immediate source of exposure. Move victim to fresh air, if it can be done safely, and keep comfortable.
- If victim's breathing has stopped, perform artificial respiration.
- Administer oxygen if victim's breathing is difficult or irregular.
- Get medical help.

SKIN:

- Remove and isolate contaminated clothing, shoes, and leather goods immediately and take a shower.
- Rinse affected areas (skin) immediately with non-abrasive soap or mild detergent and large amounts of running water. Wash contaminated clothing before reuse.
- Get medical help if irritation develops and persists.

EYES:

- Rinse eyes IMMEDIATELY with clean running water for at least 15 minutes, while holding eyelids apart.
- Remove contact lenses after 5 minutes if present and easy to do.
- Continue rinsing while holding eyelids apart.
- Get immediate medical help if irritation continues.

INGESTION:

- If swallowed, DO NOT induce vomiting, unless instructed to do so by poison control centre or doctor.
- Have person sip a glass of water if able to swallow.
- Never give anything by mouth to an unconscious person.
- If vomiting does occur, keep on giving fluids. Get medical help.

NOTE TO PHYSICIAN:

- There is no specific antidote. All treatments should be based on observed signs and symptoms of distress in the patient. Administration of gastric lavage is advised.

POTENTIAL HEALTH EFFECTS, ACUTE AND DELAYED

- Effects of exposure (inhalation, ingestion, or skin contact) to substance may be delayed.

5. FIRE FIGHTING MEASURES

SUITABLE EXTINGUISHING MEDIA:

Small fires: Dry chemical powder, carbon dioxide (CO₂), water spray or alcohol-resistant foam

Large fires: Water spray, fog, or alcohol-resistant foam

FIRE INVOLVING TANKS:

Cool containers with flooding quantities of water until well after fire is out. DO NOT get water inside containers. Withdraw immediately in case of

UNSUITABLE EXTINGUISHING MEDIA:	rising sound from venting safety devices or discoloration of tank. Always stay away from tanks engulfed in fire.
SPECIFIC EXTINGUISHING METHODS:	DO NOT use high volume water jet, due to contamination risk. Fight fire from maximum distance. For massive fire, use unmanned hose holder or monitor nozzles. Collect contaminated extinguishing water separately; do not allow contaminated water to reach the sewage or effluent systems.
SPECIFIC HAZARDS ARISING FROM COMBUSTION PRODUCTS:	In case of fire, the formation of Carbon monoxide (CO), carbon dioxide (CO ₂), Nitrogen oxides (NO _x), Hydrogen chloride (HCl), or Hydrocarbons can be expected.
PRECAUTIONS FOR FIRE FIGHTERS:	Fire fighters should wear full protective gear including self-contained breathing apparatus (SCBA). Fight fire from a safe distance. Contact with the fumes and vapours should be avoided by staying upwind. Clean all clothing before reuse. Severely contaminated clothing cannot be adequately decontaminated and must be disposed of as a hazardous waste. Shower with soap and water after contact with chemical product.
FURTHER INFORMATION:	<ul style="list-style-type: none"> · If possible, safely move undamaged intact containers away from the area around the fire. · Keep containers cool by spraying with water if exposed to fire. · Dispose of fire debris and contaminated extinguishing water in accordance with official regulations. · In case of fire and/or explosion do not breathe fumes.

6. ACCIDENTAL RELEASE MEASURES

SPILL OR LEAK:

PERSONAL PRECAUTIONS:	Avoid contact with skin and eyes. Do not touch or walk through spilled material. Do not inhale dust or fumes.
PROTECTIVE EQUIPMENT:	Wear personal protective clothing and equipment (see section 8).
EMERGENCY PROCEDURES:	Keep people and animals away. Eliminate all ignition sources (no smoking, flares, sparks, or flames) from immediate area. All equipment used when handling the product must be grounded. Use water spray to reduce vapours or divert vapour cloud drift.
ENVIRONMENTAL PRECAUTIONS:	PREVENT spilled material from entering waterway and sewer systems, basements, and confined areas. If the product contaminates rivers and lakes or waterways immediately inform respective authorities.
METHODS AND MATERIALS FOR CONTAINMENT:	Contain and absorb solid spills with inert material, remove by scoop or vacuum. Use approved industrial vacuum cleaner for removal and place in clearly marked waste containers.
METHODS AND MATERIALS FOR CLEANING UP:	Contain spillage, and then collect with non-combustible absorbent material, (e.g., sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Use clean, non-sparking tools to collect absorbed material.
SECONDARY DISASTER PREVENTION MEASURES:	NA

7. HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING:	<ul style="list-style-type: none"> · Always store fungicides in their original containers, which include the label listing ingredients, directions for use, and first aid steps in case of accidental poisoning. · Never transfer fungicides to soft drink bottles or other containers. Children or others may mistake them for something to eat or drink. · Wear suitable protective clothing which includes chemical-resistant overalls, footwear, socks, dust mask, eye shields and gloves. · Wash hands before eating, drinking, chewing gum, smoking, or using the toilet. Wash hands, arms, and face after application. Wash gloves and contaminated protective clothing daily before reuse. · Keep out of reach of unauthorized persons, children, and animals. Always store fungicides in their original containers, which include the label listing ingredients, in a cool, dry and well-ventilated area out of direct sunlight. · Segregate from foods and animal feeds. · DO NOT reuse the container for any other purpose.
<ul style="list-style-type: none"> - Suitable Technical Measures - Suitable Precautions - Prevention of contact 	
CONDITIONS FOR SAFE STORAGE:	
<ul style="list-style-type: none"> - Suitable Technical Measures - Separation measures from incompatible substances and mixtures 	

PACKAGING MATERIAL
FIRE PRECAUTIONS:

HDPE Fluorinated Containers
-

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

ADI – Acceptable Daily Intake

Boscalid = 0.04 mg kg⁻¹ bw day⁻¹

AOEL – Accepted Operator Exposure Level

Pyraclostrobin = 0.03 mg kg⁻¹ bw day⁻¹

Boscalid = 0.1 mg kg⁻¹ bw day⁻¹

Pyraclostrobin = 0.015 mg kg⁻¹ bw day⁻¹

NATIONAL EXPOSURE STANDARDS:

Not available

BIOLOGICAL LIMIT VALUES:

Not available

ENGINEERING CONTROLS:

Containment and/or segregation is the most reliable technical protection measure if exposure cannot be eliminated. If airborne mist/vapours are generated use local exhaust ventilation controls. Facilities should be equipped with an eyewash station and a safety shower. Where necessary, seek additional occupational hygiene advice.

PERSONAL PROTECTIVE EQUIPMENT:

Respiratory Protection: Where exposure through inhalation may occur when handling and/or when preparing the spray mixture, wear a face mask. If the product is used in confined spaces a respirator suitable for protection from dusts and mists of pesticides is adequate.

Hand Protection: Wear chemical-resistant gloves made of any waterproof material such as nitrile rubber. Glove thickness: 0.5 mm

Eye Protection: The use of safety goggles (full-face shield) is recommended. Where there is any possibility that an employee's eyes may be exposed to this substance, the employer should provide an eye wash fountain or appropriate alternative within the immediate work area for emergency use.

Skin and Body Protection: Wear suitable protective clothing which include chemical-resistant overalls, footwear, socks, dust mask, eye shields and gloves. Remove and wash contaminated protective clothing daily.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE:

Solid

COLOUR

White

ODOUR:

Slight/Mild Chemical

MELTING POINT / FREEZING POINT °C (a.i):

Boscalid = 140 °C

Pyraclostrobin = 64 °C

BOILING POINT:

Decompose before boiling

DECOMPOSITION TEMPERATURE (a.i):

Boscalid = 300 °C

Pyraclostrobin = 200 °C

FLAMMABILITY:

EXPLOSIVE LIMITS:

Not available

FLASH POINT:

Not available

AUTO-IGNITION TEMPERATURE:

Not available

pH (1% IN WATER):

5.0 – 8.0

KINEMATIC VISCOSITY:

Not available

$$\text{Kinematic viscosity} = \frac{\text{Dynamic viscosity (mPa/s)}}{\text{Density (g/cm}^3\text{)}}$$

VISCOSITY:

Not applicable for solids

DENSITY / RELATIVE DENSITY:

Not available

SOLUBILITY - WATER (a.i):

Boscalid = 4.6 mg/L at 20 °C

Pyraclostrobin = 1.9 mg/L at 20 °C

N-OCTANOL / WATER PARTITION COEFFICIENT (a.i):

Boscalid

log P_{ow} = 2.96 at 20 °C

Pyraclostrobin

log P_{ow} = 3.99 at 20 °C

VAPOUR PRESSURE (a.i):

Boscalid

7.2 X 10⁻⁰⁴ mPa at 20 °C

Pyraclostrobin

2.60 X 10⁻⁰⁵ mPa at 20 °C

RELATIVE VAPOUR DENSITY:

Not available

PARTICLE CHARACTERISTICS:

Not available

10. STABILITY AND REACTIVITY

REACTIVITY:	Not available
CHEMICAL STABILITY:	Stable under normal use and storage conditions.
HAZARDOUS REACTION:	No hazardous reactions if stored and handled as prescribed/indicated.
CONDITIONS TO AVOID: (e.g. – heat, freezing, pressure, static discharge, shock, or vibration)	Avoid excessive heat and freezing. Avoid sources of ignition.
INCOMPATIBLE MATERIALS:	Nitric acid, Sulfuric acid and strong Oxidizing agents
HAZARDOUS DECOMPOSITION PRODUCTS:	When heated to decomposition, irritant or dangerous dust/fumes or vapours may be emitted. See section 5.

11. TOXICOLOGICAL INFORMATION

ANIMAL ACUTE TOXICITY DATA (ATE)

ORAL:	LD ₅₀ (rat)	Not Classified
DERMAL:	LD ₅₀ (rat)	Not Classified
INHALATION:	LC ₅₀ (4h) rat = 4.53 a.i. mg/ℓ	Category 4
SKIN IRRITATION / CORROSION:		Category 2
SERIOUS EYE IRRITATION / DAMAGE:		Category 1
RESPIRATORY OR SKIN SENSITIZATION:		Not Classified
GERM CELL MUTAGENICITY:		Not Classified
CARCINOGENICITY:		Not Classified
REPRODUCTIVE TOXICITY:		Not Classified
SPECIFIC TARGET ORGAN TOXICITY – SINGLE EXPOSURE:		Not Classified
SPECIFIC TARGET ORGAN TOXICITY – REPEATED EXPOSURE:		Not Classified
ASPIRATION HAZARD:		Not Classified

12. ECOLOGICAL INFORMATION

ECOTOXICITY:

BOSCALID	Birds: LD ₅₀ (oral)	<i>Colinus virginianus</i> (Bobwhite quail) Acute LD ₅₀ > 2000 mg/kg bw/day LC ₅₀ /LD ₅₀ > 5000 mg/kg diet Chronic 21-day (NOEL) = 25.4 mg/kg bw/day
	Fish: LC ₅₀	<i>Oncorhynchus mykiss</i> (Rainbow trout) Acute (96h) LC ₅₀ = 2.7 mg a.i./ℓ <i>Oncorhynchus mykiss</i> (Rainbow trout) NOEC = 0.125 mg a.i./ℓ (21-day)
	Aquatic invertebrates - <i>Daphnia</i>	<i>Daphnia magna</i> (Water flea) Acute (48h) EC ₅₀ = 5.33 mg a.i./ℓ <i>Daphnia magna</i> (Water flea) Chronic (21-day) NOEC = 1.3 mg a.i./ℓ
	Aquatic Plant	<i>Lemna gibba</i> (Duckweed) Acute (7-day) EC ₅₀ > 3.9 mg a.i./ℓ
	Algae - EC ₅₀ / NOEC	<i>Pseudokirchneriella subcapitata</i> (Green alga) Acute (7-day) EC ₅₀ = 3.75 mg a.i./ℓ
	Bees	<i>Apis mellifera</i> Acute contact 48-hour LD ₅₀ > 200 (µg bee ⁻¹) Acute oral 48-hour LD ₅₀ > 166 (µg bee ⁻¹) Not toxic to bees

	Earthworms: LC ₅₀ /NOEC	<i>Eisenia fetida</i> Acute (14-day) LC ₅₀ > 500 mg a.i./kg d.w. soil Chronic (reproduction) NOEC = 1.97 mg a.i./kg
PYRACLOSTROBIN	Birds: LD ₅₀ (oral)	<i>Colinus virginianus</i> (Bobwhite quail) Acute LD ₅₀ > 1446 mg/kg bw/day LC ₅₀ /LD ₅₀ > 5000 mg/kg diet Chronic NOEC = 1000 mg/kg bw/day
	Fish: LC ₅₀	<i>Oncorhynchus mykiss</i> (Rainbow trout) Acute (96h) LC ₅₀ = 0.0062 mg a.i./ℓ NOEC = 0.0046 mg a.i./ℓ (21-day)
	Aquatic invertebrates - <i>Daphnia</i>	<i>Daphnia magna</i> (Water flea) Acute (48h) EC ₅₀ = 0.016 mg a.i./ℓ Chronic (21-day) NOEC = 0.004 mg a.i./ℓ
	Aquatic crustaceans	<i>Americamysis bahia</i> NOEC = 0.50 µg a.i./ℓ (21-day)
	Algae - EC ₅₀ / NOEC	<i>Pseudokirchneriella subcapitata</i> Acute (72h) EC ₅₀ > 1.172 mg a.i./ℓ Chronic (96h) NOEC > 0.843 mg a.i./ℓ
	Bees	<i>Apis mellifera</i> Acute contact 48-hour LD ₅₀ > 100 (µg bee ⁻¹) Acute oral 48-hour LD ₅₀ = 73.1 (µg bee ⁻¹)
	Earthworms: LC ₅₀ /NOEC	<i>Eisenia fetida</i> Acute (14-day) LC ₅₀ = 565.9 mg a.i./kg d.w. soil Chronic NOEC = 151.4 mg a.i./kg d.w. soil
AQUATIC TOXICITY	Summation Method	
	Aquatic Acute – Category 1	
	Aquatic Chronic – Category 1	
PERSISTENCE, DEGRADABILITY AND MOBILITY:	Boscalid is persistent to very persistent in the soil and slightly mobile. DT ₅₀ = 196 – 312 days K _{foc} = 772 mL/g (slightly mobile)	
	Pyraclostrobin is moderately persistent in the soil and non-mobile. DT ₅₀ = 5.2 – 181 days K _{oc} = 9304 mL/g (non-mobile)	
BIO-ACCUMULATIVE POTENTIAL:	Boscalid	BCF = 107 ℓ/kg
	Pyraclostrobin	BCF = 706 ℓ/kg
SOIL MICRO-ORGANISMS:	Carbon transformation	No significant adverse/long-term effect
	Nitrogen transformation	No significant adverse/long-term effect

13. DISPOSAL CONSIDERATIONS

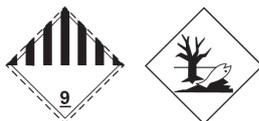
On site disposal of the concentrated product is not acceptable. Ideally, the product should be used for its intended purpose. If there is a need to dispose of the product, approach local authorities.

TRIPLE RINSE THE EMPTY CONTAINER AS FOLLOWS: Containers must be completely emptied before being disposed of. Invert and shake thoroughly into the spray tank to ensure the container is empty. Triple rinse the empty container with clean water equal to a minimum of 30% of the volume of the container. Add rinsing to the contents of the spray tank. Puncture the triple rinsed container and dispose of via an approved collector or recycler (www.croplife.co.za). Do not bury, burn, or donate the container to any other parties that may use it as a container for food or beverages.

14. TRANSPORT INFORMATION

UN NUMBER:	3077
UN PROPER SHIPPING NAME:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID (25.2 % boscalid + 12.8 % pyraclostrobin)
TRANSPORT HAZARD CLASS(ES):	Class 9
PACKAGING GROUP:	III

TRANSPORT PICTOGRAM(S):



ENVIRONMENTAL HAZARDS:

Marine Pollutant: Yes – Category 1

TRANSPORT IN BULK: (Imo instruments):

Not applicable, not to be transported in bulk.

SPECIAL PRECAUTIONS FOR USER:

Not applicable

15. REGULATORY INFORMATION

Conforms to South Africa Regulation for Hazardous Chemical Agents, 2021.

South African Registration number L11445, Act 36 of 1947.

SDS valid for five years from date of issue.

16. OTHER INFORMATION

Legend: Full text of H-Statements referred to under sections 3:

H302 – Harmful if swallowed

H331 – Toxic if inhaled

H400 – Very toxic to aquatic life

H411 – Toxic to aquatic life with long lasting effects

H413 – May cause long lasting effects to aquatic life

Key literature references and sources of data: Occupational Health and Safety Act 1993. Regulation for Hazardous Chemical Agents, 2021. Globally Harmonized System of Classification and Labelling of Chemicals (GHS) Rev 9, 2021. UN Model Regulations Rev. 22 (2021). EU REGULATION (EC) No. 1272/2008.

This Safety Data Sheet (SDS) summarises our best knowledge of the health and safety hazard information of the product and how to safely handle and use the product in the workplace. Each user should read this SDS and consider the information in the context of how to prevent accidents in the normal workplace including in conjunction with other products.

The information was obtained from sources which we believe are reliable. However, the information is provided in good faith. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and for these reasons we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This SDS was prepared and is to be used for this product only.

First Edition Date: August 2023

END of SDS