

Safety Data Sheet



Blue Shield® DF Copper Fungicide

Version 1 / AUS
102000017064

Revision Date: 26.10.2023
Print Date: 27.10.2023

SECTION 1: IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Trade name Blue Shield® DF Copper Fungicide
Product code (UVP) 79028679

1.2 Relevant identified uses of the substance or mixture and uses advised against

Use Fungicide

1.3 Details of the supplier of the safety data sheet

Supplier Bayer Cropscience Pty Ltd
ABN 87 000 226 022
Level 4, 109 Burwood Rd
Hawthorn 3122
Victoria
Australia

Telephone (03) 9248 6888

Telefax (03) 9248 6800

Responsible Department 1800 804 479 Technical Information Service

Website www.crop.bayer.com.au

1.4 Emergency telephone no.

Emergency telephone no. 1800 033 111 IXOM Operations Pty Ltd

SECTION 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification in accordance with Australian GHS Regulation

Acute toxicity: Category 4
H302 Harmful if swallowed.

Serious eye damage: Category 1
H318 Causes serious eye damage.

Acute aquatic toxicity: Category 1
H400 Very toxic to aquatic life.

Chronic aquatic toxicity: Category 1
H410 Very toxic to aquatic life with long lasting effects.

2.2 Label elements

Labelling according to specific Australian legislation

Hazard label for supply/use required.

Safety Data Sheet



Blue Shield® DF Copper Fungicide

Version 1 / AUS
102000017064

Revision Date: 26.10.2023
Print Date: 27.10.2023

Hazardous components which must be listed on the label:

Copper dihydroxide

Signal word: Danger

Hazard statements

H302 Harmful if swallowed.
H318 Causes serious eye damage.

Precautionary statements

P264 Wash hands thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P301 + P312 IF SWALLOWED: Call a POISON CENTER/doctor/physician if you feel unwell.
P330 Rinse mouth.
P305 + P351 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
+ P338
P310 Immediately call a POISON CENTER/doctor/ physician.
P501 Dispose of contents/container in accordance with local regulation.

2.3 Other hazards

No additional hazards known beside those mentioned.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature

Copper (Cu) present as copper (cupric) hydroxide 500 g/kg
Water dispersible granules (WG)

Chemical name	CAS-No.	Concentration [%]
Copper dihydroxide	20427-59-2	85.60
Citric acid	77-92-9	> 1.00 - < 5.00
fatty alcohol polyglycolether	127036-24-2	< 1.00
Other ingredients (non-hazardous) to 100%		

SECTION 4. FIRST AID MEASURES

If poisoning occurs, immediately contact a doctor or Poisons Information Centre (telephone 13 11 26), and follow the advice given. Show this Safety Data Sheet to the doctor.

4.1 Description of first aid measures

General advice

Move out of dangerous area. Place and transport victim in stable position (lying sideways). Remove contaminated clothing immediately and dispose of safely.

Inhalation

When inhaled remove to fresh air and seek medical aid. Keep patient warm and at rest. Oxygen or artificial respiration if needed.



Blue Shield® DF Copper Fungicide

Version 1 / AUS
102000017064

Revision Date: 26.10.2023
Print Date: 27.10.2023

Skin contact	Take off contaminated clothing and shoes immediately. Wash off immediately with plenty of water for at least 15 minutes. If signs of poisoning occur, call a physician immediately.
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician or poison control center immediately.
Ingestion	Call a physician or poison control center immediately. Rinse out mouth and give water in small sips to drink. Do NOT induce vomiting. Never give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms	Prolonged and repeated contact with skin, eyes or mucous membranes may cause irritation. Conjunctivitis, Itching, Eczema, Sensitisation. May cause respiratory tract irritation. Ulceration, Gastrointestinal discomfort. Liver and kidney injuries may occur.
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4.3 Indication of any immediate medical attention and special treatment needed

Treatment	To bind absorbed copper administer D-penicillamine. In case of allergy to penicillin, administer DMPS (Dimercaptopropane sulfonate). In case of ingestion gastric lavage should be considered in cases of significant ingestions only within the first 2 hours. However, the application of activated charcoal and sodium sulphate is always advisable.
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SECTION 5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Suitable	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
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5.2 Special hazards arising from the substance or mixture	Dangerous gases are evolved in the event of a fire.
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5.3 Advice for firefighters

Special protective equipment for firefighters	Wear self-contained breathing apparatus and protective suit.
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Further information	Evacuate personnel to safe areas. Whenever possible, contain fire-fighting water by diking area with sand or earth. Do not allow run-off from fire fighting to enter drains or water courses.
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Hazchem Code	2Z
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Blue Shield® DF Copper Fungicide

Version 1 / AUS
102000017064

Revision Date: 26.10.2023
Print Date: 27.10.2023

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Precautions Avoid contact with spilled product or contaminated surfaces. When dealing with a spillage do not eat, drink or smoke. Do not breathe dust. Use personal protective equipment. Keep unauthorized people away. Avoid dust formation.

6.2 Environmental precautions Do not allow to get into surface water, drains and ground water. If the product contaminates rivers and lakes or drains inform respective authorities.

6.3 Methods and materials for containment and cleaning up

Methods for cleaning up Avoid dust formation. Sweep up or vacuum up spillage and collect in suitable container for disposal. Clean contaminated floors and objects thoroughly, observing environmental regulations.

6.4 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

7.1 Precautions for safe handling

Advice on safe handling Avoid contact with skin, eyes and clothing. Use only in area provided with appropriate exhaust ventilation. Provide for appropriate exhaust ventilation and dust collection at machinery.

Advice on protection against fire and explosion Dust may form explosive mixture in air.

Hygiene measures Contact with eyes and skin must be avoided. When using, do not eat, drink or smoke. Remove soiled clothing immediately and clean thoroughly before using again. Wash hands before breaks and immediately after handling the product.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers Keep out of the reach of children. Store in original container. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from direct sunlight.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Components	CAS-No.	Control parameters	Update	Basis
Copper and its compounds (expressed in copper) (Fume.)	7440-50-8	0.2 mg/m3 (TWA)	12 2011	AU NOEL

Safety Data Sheet



Blue Shield® DF Copper Fungicide

Version 1 / AUS
102000017064

Revision Date: 26.10.2023
Print Date: 27.10.2023

Copper and its compounds (expressed in copper) (Dust and mist.)	7440-50-8	1 mg/m ³ (TWA)	12 2011	AU NOEL
Copper and its compounds (expressed in copper)	7440-50-8	1 mg/m ³ (TLV)		OES BCS*

*OES BCS: Internal Bayer AG, Crop Science Division "Occupational Exposure Standard"

8.2 Exposure controls

Respiratory protection	Respirator must be worn if exposed to dust.
Hand protection	PVC or nitrile rubber gloves
Eye protection	Goggles
Skin and body protection	Skin contact should be prevented. Long-sleeved shirt and long pants Rubber boots
General protective measures	In normal use and handling conditions please refer to the label and/or leaflet. In all other cases the above mentioned recommendations would apply.

Engineering Controls

Advice on safe handling	Avoid contact with skin, eyes and clothing. Use only in area provided with appropriate exhaust ventilation. Provide for appropriate exhaust ventilation and dust collection at machinery.
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SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Form	granular
Colour	light blue
Odour	odourless
Odour Threshold	No data available
pH	ca. 6.5 (1 %) (23 °C) (deionized water)
Melting point/range	No data available
Boiling Point	No data available
Flash point	No data available
Flammability	No data available
Auto-ignition temperature	No data available
Thermal decomposition	No data available
Minimum ignition energy	No data available
Self-accelerating decomposition temperature (SADT)	No data available

Safety Data Sheet



Blue Shield® DF Copper Fungicide

Version 1 / AUS
102000017064

Revision Date: 26.10.2023
Print Date: 27.10.2023

Upper explosion limit	No data available
Lower explosion limit	No data available
Vapour pressure	No data available
Evaporation rate	No data available
Relative vapour density	No data available
Relative density	No data available
Density	No data available
Bulk density	481 - 513 kg/m ³
Water solubility	No data available
Partition coefficient: n-octanol/water	No data available
Viscosity, dynamic	No data available
Viscosity, kinematic	No data available
Oxidizing properties	No data available
Explosivity	No data available
9.2 Other information	Further safety related physical-chemical data are not known.

SECTION 10. STABILITY AND REACTIVITY

10.1 Reactivity	Stable under normal conditions.
10.2 Chemical stability	Stable under recommended storage conditions.
10.3 Possibility of hazardous reactions	Corrodes aluminium. Stable under normal conditions.
10.4 Conditions to avoid	Extremes of temperature and direct sunlight. Exposure to moisture.
10.5 Incompatible materials	Acids, Aluminium, Ammonia
10.6 Hazardous decomposition products	Thermal decomposition can lead to release of: Toxic gases/vapours Toxic metal oxide fumes Irritant gases/vapours

SECTION 11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects



Blue Shield® DF Copper Fungicide

Version 1 / AUS
102000017064

Revision Date: 26.10.2023
Print Date: 27.10.2023

Acute oral toxicity	LD50 (Rat) 1,300 mg/kg
Acute inhalation toxicity	LC50 0.56 mg/l Exposure time: 4 h The value mentioned relates to the active ingredient copper(II)-hydroxide.
Acute dermal toxicity	LD50 (Rat) > 2,600 mg/kg
Skin corrosion/irritation	Slight irritation (Rabbit)
Serious eye damage/eye irritation	Corrosive (Rabbit)
Respiratory or skin sensitisation	Non-sensitizing (Guinea pig)

Assessment mutagenicity

Copper dihydroxide was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.
Copper and its compounds was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.

Assessment carcinogenicity

Copper dihydroxide was not carcinogenic in lifetime feeding studies in rats and mice.
Copper and its compounds was not carcinogenic in lifetime feeding studies in rats and mice.

Assessment toxicity to reproduction

Copper dihydroxide did not cause reproductive toxicity in a two-generation study in rats.
Copper and its compounds did not cause reproductive toxicity in a two-generation study in rats.

Assessment developmental toxicity

Copper dihydroxide did not cause developmental toxicity in rats.
Copper and its compounds did not cause developmental toxicity in rats and rabbits.

Assessment STOT Specific target organ toxicity – single exposure

Copper dihydroxide: Based on available data, the classification criteria are not met.

Copper and its compounds: Based on available data, the classification criteria are not met.

Assessment STOT Specific target organ toxicity – repeated exposure

Copper dihydroxide did not cause specific target organ toxicity in experimental animal studies.
Copper and its compounds did not cause specific target organ toxicity in experimental animal studies.

Aspiration hazard

Based on available data, the classification criteria are not met.

Information on likely routes of exposure

Harmful if inhaled. Inhalation of dust may cause mucous membrane and respiratory irritation.
May cause skin irritation.
Severe eye irritation. Corrosive to eyes.
Harmful if swallowed.

Early onset symptoms related to exposure

Refer to Section 4

Delayed health effects from exposure

Refer to Section 11



Blue Shield® DF Copper Fungicide

Version 1 / AUS
102000017064

Revision Date: 26.10.2023
Print Date: 27.10.2023

Exposure levels and health effects

Refer to Section 4

Interactive effects

Not known

When specific chemical data is not available

Not applicable

Mixture of chemicals

Refer to Section 2.1

Further information

No further toxicological information is available.

SECTION 12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish

LC50 (*Lepomis macrochirus* (Bluegill sunfish)) 180 mg/l
Exposure time: 96 h
The value mentioned relates to the active ingredient copper(II)-hydroxide.

LC50 (*Oncorhynchus mykiss* (rainbow trout)) 25 mg/l
Exposure time: 96 h
The value mentioned relates to the active ingredient copper(II)-hydroxide.

Toxicity to aquatic invertebrates

EC50 (*Daphnia magna* (Water flea)) 0.0422 mg/l
Exposure time: 48 h
The value mentioned relates to the active ingredient copper(II)-hydroxide.

Toxicity to aquatic plants

EC50 (algae) 22.5 mg/l
The value mentioned relates to the active ingredient copper(II)-hydroxide.

Toxicity to other organisms

LD50 (*Colinus virginianus* (Bobwhite quail)) 3,400 mg/kg
The value mentioned relates to the active ingredient copper(II)-hydroxide.

LD50 (*Anas platyrhynchos* (Mallard duck)) > 5,000 mg/kg
The value mentioned relates to the active ingredient copper(II)-hydroxide.

12.2 Persistence and degradability

Biodegradability

Not readily biodegradable.
The value mentioned relates to the active ingredient copper(II)-hydroxide.
Not readily biodegradable.
The value mentioned relates to copper.

12.3 Bioaccumulative potential

Bioaccumulation

Safety Data Sheet



Blue Shield® DF Copper Fungicide

Version 1 / AUS
102000017064

Revision Date: 26.10.2023
Print Date: 27.10.2023

The value mentioned relates to copper.
Does not bioaccumulate.

The value mentioned relates to the active ingredient copper(II)-hydroxide.
Does not bioaccumulate.

12.4 Mobility in soil

Mobility in soil

Slightly mobile in soils
The value mentioned relates to the active ingredient copper(II)-hydroxide.
Slightly mobile in soils
The value mentioned relates to copper.

12.5 Other adverse effects

Additional ecological information

No other effects to be mentioned.

SECTION 13. DISPOSAL CONSIDERATIONS

Plastic and foil bags:

Single rinse before disposal. Add rinsings to spray tank. Do not dispose of undiluted chemicals on site. Puncture and bury empty bags in a local authority landfill. If no landfill is available, bury the containers below 500 mm in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots. Empty bags and product should not be burnt.

SECTION 14. TRANSPORT INFORMATION

ADG

UN number	3077
Transport hazard class(es)	9
Subsidiary Risk	None
Packaging group	III
Description of the goods	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (COPPER HYDROXIDE MIXTURE)
Hazchem Code	2Z

AU01: Environmentally Hazardous Substances meeting the descriptions of UN 3077 or UN 3082 are not subject to this Code when transported by road or rail in;

- a) packagings that do not incorporate a receptacle exceeding 500 kg(L); or
- b) IBCs

IMDG

UN number	3077
Transport hazard class(es)	9
Subsidiary Risk	None
Packaging group	III
Marine pollutant	YES
Description of the goods	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.

Safety Data Sheet



Blue Shield® DF Copper Fungicide

Version 1 / AUS
102000017064

Revision Date: 26.10.2023
Print Date: 27.10.2023

(COPPER HYDROXIDE MIXTURE)

IATA

UN number	3077
Transport hazard class(es)	9
Subsidiary Risk	None
Packaging group	III
Environm. Hazardous Mark	YES
Description of the goods	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (COPPER HYDROXIDE MIXTURE)

SECTION 15. REGULATORY INFORMATION

Registered according to the Agricultural and Veterinary Chemicals Code Act 1994
Australian Pesticides and Veterinary Medicines Authority approval number: 46869

SUSMP classification (Poison Schedule)

Schedule 6 (Standard for the Uniform Scheduling of Medicines and Poisons)

SECTION 16. OTHER INFORMATION

Trademark information Blue Shield® is a Registered Trademark of the Bayer Group.

Abbreviations and acronyms

ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute toxicity estimate
AU OEL	Australia. OELs. (Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment)
CAS-Nr.	Chemical Abstracts Service number
CEILING	Ceiling Limit Value
Conc.	Concentration
EC-No.	European community number
ECx	Effective concentration to x %
EINECS	European inventory of existing commercial substances
ELINCS	European list of notified chemical substances
EN	European Standard
EU	European Union
IATA	International Air Transport Association
IBC	International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code)
ICx	Inhibition concentration to x %
IMDG	International Maritime Dangerous Goods
LCx	Lethal concentration to x %
LDx	Lethal dose to x %
LOEC/LOEL	Lowest observed effect concentration/level
MARPOL	MARPOL: International Convention for the prevention of marine pollution from ships

Safety Data Sheet



Blue Shield® DF Copper Fungicide

Version 1 / AUS
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Revision Date: 26.10.2023
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N.O.S.	Not otherwise specified
NOEC/NOEL	No observed effect concentration/level
OECD	Organization for Economic Co-operation and Development
OES BCS	OES BCS: Internal Bayer AG, Crop Science Division "Occupational Exposure Standard"
PEAK	PEAK: Exposure Standard - Peak means a maximum or peak airborne concentration of a particular substance determined over the shortest analytically practicable period of time which does not exceed 15 minutes.
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SK-SEN	Skin sensitiser
SKIN_DES	SKIN_DES: Skin notation: Absorption through the skin may be a significant source of exposure.
STEL	STEL: Exposure standard - short term exposure limit (STEL): A 15 minute TWA exposure which should not be exceeded at any time during a working day even if the eight-hour TWA average is within the TWA exposure standard. Exposures at the STEL should not be longer than 15 minutes and should not be repeated more than four times per day. There should be at least 60 minutes between successive exposures at the STEL.
TWA	TWA: Exposure standard - time-weighted average (TWA): The average airborne concentration of a particular substance when calculated over a normal eight-hour working day, for a five-day working week.
TWA	Time weighted average
UN	United Nations
WHO	World health organisation

This 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 the product will be handled and used in the workplace including in conjunction with other products.

Changes since the last version are highlighted in the margin. This version replaces all previous versions.