SAFETY DATA SHEET

CORTEVA AGRISCIENCE NEW ZEALAND LIMITED

Product name: Kocide® Opti® **Issue Date:** 11.12.2025

Corteva Agriscience™ New Zealand Limited encourages you and expects you to read and understand the entire SDS as there is important information throughout the document. This SDS provides users with information relating to the protection of human health and safety at the workplace, protection of the environment and supports emergency response. Product users and applicators should primarily refer to the product label attached to or accompanying the product container. This Safety Data Sheet adheres to the standards and regulatory requirements of New Zealand and may not meet the regulatory requirements in other countries.

1. IDENTIFICATION

Product name: Kocide® Opti®
Identified uses: End use fungicide product

COMPANY IDENTIFICATION
CORTEVA AGRISCIENCE NEW ZEALAND LIMITED
Private Bag 2017
NEW PLYMOUTH 4342
NEW ZEALAND

Customer Information Number: 0800-803-939
NZCustomerservice@corteva.com

EMERGENCY TELEPHONE NUMBER
24-Hour Emergency Contact: +64 6 751 2407
Local Emergency Contact: 0800 844 455

For medical advice, contact the New Zealand Poisons Information Centre:
0800 POISON (0800 764 766)
Transport Emergency Only Dial: 111

This SDS may not provide exhaustive guidance for all the GHS controls assigned to this substance. The NZ EPA website www.epa.govt.nz should be consulted for a full list of triggered controls and cited regulations.

2. HAZARDS IDENTIFICATION

Hazard classification
NEW ZEALAND HAZARDOUS SUBSTANCES CLASSIFICATION: Classified as hazardous according to criteria in the New Zealand Hazardous Substances (Minimum Degrees of Hazard) Notice 2017, and the Hazardous Substances (Classification) Notice 2017. Refer to Section 15 for EPA Approval Number.

GHS classifications:
Acute oral toxicity - Category 4
Serious eye damage - Category 1
Skin sensitisation – Category 1
Specific target organ toxicity (repeated exposure - inhalation) - Category 2
Hazardous to terrestrial vertebrates
Hazardous to the aquatic environment acute - Category 1
Hazardous to the aquatic environment chronic - Category 1

Hazard pictograms

Signal word: **DANGER!**

Hazard statements
Harmful if swallowed or inhaled.
Causes serious eye irritation.
May cause an allergic skin reaction.
May cause damage to organs (Lungs) through prolonged or repeated exposure.
Very toxic to aquatic life with long lasting effects.
Harmful to terrestrial vertebrates.

Prevention
Do not breathe dust / vapours/ spray.
Wash skin thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Contaminated work clothing should not be allowed out of the workplace.
Wear protective gloves/protective clothing/eye protection/face protection.
Avoid release to the environment.

Response
IF SWALLOWED: Call a POISON CENTRE/doctor if you feel unwell. Rinse mouth.
IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTRE/doctor.
IF IN EYES: 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/ attention.
IF ON SKIN: wash with plenty of soap and water.
IF SKIN irritation or rash occurs: Get medical advice/attention.
Specific treatment (see supplemental first aid instructions on this label).
Wash contaminated clothing before re-use.
Collect spillage.

Disposal
Dispose of contents/ container to an approved waste disposal plant.

Other hazards
If you mill or grind this product you may change its toxicological properties.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CASRN	Concentration
Copper dihydroxide	20427-59-2	46.1 %
Quartz	14808-60-7	1 – 3 %

4. FIRST AID MEASURES

Consult the National Poisons Information Centre (0800 POISON (0800 764 766)) or a doctor in every case of suspected chemical poisoning. Never give fluids or induce vomiting if a patient is unconscious or convulsing regardless of cause of injury. If breathing difficulties occur seek medical attention immediately. Have the Safety Data Sheet, and if available, the product container or label with you when calling a poison control center or doctor or going for treatment.

Description of first aid measures
General advice: If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: Move person to fresh air. Artificial respiration and/or oxygen may be necessary. Call a poison control center or doctor for treatment advice.

Skin contact: May cause redness. Take off all contaminated clothing immediately. Wash skin thoroughly with soap and water. Call a poison information centre or doctor for treatment advice.

Eye contact: Hold eyes open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eyes. Call a poison control center or doctor for treatment advice.

Ingestion: Have person sip a glass of water if able to swallow. DO NOT induce vomiting unless directed to do so by a physician or poison control centre. Never give anything by mouth to an unconscious person. Call a poison information centre or doctor for treatment advice.

Most important symptoms and effects, both acute and delayed: Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

Indication of any immediate medical attention and special treatment needed
Notes to physician: Treat symptomatically. Probable mucosal damage may contraindicate the use of gastric lavage.

5. FIREFIGHTING MEASURES

Hazchem code: 2Z

Suitable extinguishing media: Water spray. Alcohol resistant foam. Dry chemical. Carbon dioxide.

Unsuitable extinguishing media: High volume water jet.

Special hazards arising from the substance or mixture: Exposure to combustion products may be a hazard to health. Applying foam will release significant amounts of hydrogen gas that can be trapped under the foam blanket.

Unusual Fire and Explosion Hazards: Do not allow extinguishing medium to contact container contents. Most fire extinguishing media will cause hydrogen evolution, and once the fire is put out, may accumulate in poorly ventilated or confined areas and result in flash fire or explosion if ignited.

Advice for firefighters
Fire Fighting Procedures: Isolate fire and deny unnecessary entry. Remove undamaged containers from fire area if it is safe to do so. On small fires: If area is heavily exposed to fire and if conditions permit, let fire burn itself out since water may increase the area contaminated. Cool containers/tanks with water spray. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Special protective equipment for firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire-fighting clothing (includes fire-fighting helmet, coat, trousers, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Evacuate personnel to safe areas. Ensure adequate ventilation. Avoid breathing dust. Avoid contact with skin and eyes. Wear suitable personal protective equipment. Refer to section 7: Handling, for additional precautionary measures. For additional information, refer to Section 8: Exposure Controls and Personal Protection.

Environmental precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12: Ecological Information.

Methods and materials for containment and cleaning up: Prevent further leakage or spillage. Contain spilled material if possible. Shovel or sweep up. Avoid dust formation. Shovel into suitable container for disposal. Recovered material should be stored in a vented container. The vent must prevent the ingress of water as further reaction with spilled materials can take place which could lead to over-pressurisation of the container. Water Spill: If feasible, copper dihydroxide may be precipitated/-ultra filtrated with caustics or other chemicals and resulting sludge disposed of in a chemical landfill. Retain and dispose of contaminated wash water. Local authorities should be advised if significant spillages cannot be contained. Large spills: Contact Corteva Agriscience for further clean-up assistance. See Section 13: Disposal Considerations, for additional information.

7. HANDLING AND STORAGE

Precautions for safe handling: Keep out of reach of children. Keep away from heat and sources of ignition. Avoid contact with eyes, skin, and clothing. Avoid breathing dust or spray mist. Wash hands thoroughly after handling. When using do not eat, drink or smoke. Remove and wash contaminated clothing before re-use. See Section 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION. Take care to prevent spills, waste and minimize release to the environment.

Conditions for safe storage: Store in a dry place, out of direct sunlight. Store in original container. Keep container tightly closed in a well-ventilated place. Keep locked up. Do not store with feed, seeds or foodstuffs.

This substance is subject to a requirement for an emergency management plan, secondary containment and signage, whenever it is held in quantities of 100 Kg or more, either alone or in aggregate with other hazardous substances. See Hazardous Substances Emergency Management and Identification Regulations.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

RECOMMENDATIONS IN THIS SECTION ARE FOR MANUFACTURING, COMMERCIAL BLENDING AND PACKAGING WORKERS. APPLICATORS AND HANDLERS SHOULD SEE THE PRODUCT LABEL FOR PROPER PERSONAL PROTECTIVE EQUIPMENT AND CLOTHING.

Control parameters
Exposure limits are listed below, if they exist:

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
copper dihydroxide	20427-59-2	WES-TWA (Respirable dust)	0.01 mg/m3 (Copper)	NZ OEL
	Further information: Skin sensitiser			
Quartz	14808-60-7	WES-TWA (Respirable dust)	0.05 mg/m3	NZ OEL
	Further information: Confirmed carcinogen			
		WES-TWA (Respirable dust)	0.025 mg/m3	NZ OEL
	Further information: Confirmed carcinogen			
		TWA (Respirable particulate matter)	0.025 mg/m3 (Silica)	ACGIH

Exposure controls
Engineering controls: Use engineering controls to maintain airborne level below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use only with adequate ventilation. Local exhaust ventilation may be necessary for some operations.

Individual protection measures
Eye/face protection: Use safety glasses (with side shields).
Hand protection: Use chemical resistant gloves classified under standard AS/NZS 2161.10: Protective gloves against chemicals and micro-organisms. NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.
Other protection: Wear protective clothing such as water-proof gloves, apron, boots, overalls, as appropriate.
Respiratory protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. In misty atmospheres, use an approved particulate respirator.
Other Information: Selection and use of personal protective equipment should be in accordance with the recommendations in one or more of the relevant Australian/New Zealand Standards, including:
AS/NZS 1336: Eye and Face protection - Guidelines.
AS/NZS 1337: Personal eye protection - Eye and face protectors for occupational applications.
AS/NZS 1715: Selection, use and maintenance of respiratory protective equipment.
AS/NZS 2161: Occupational protective gloves.
AS/NZS 2210: Occupational protective footwear.
AS/NZS 4501: Occupational protective clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance - Physical state	Solid, granular.
- Colour	Blue
Odour	Characteristic copper odour
Odour Threshold	No information available
pH	7.5 – 9.5
Melting point/range	No information available
Freezing point	No information available
Boiling point (760 mmHg)	Not applicable
Flash point - closed cup	No information available
Evaporation Rate (Butyl Acetate = 1)	No information available
Flammability (solid, gas)	Does not sustain combustion.
Lower explosion limit	No information available
Upper explosion limit	No information available
Vapour Pressure	No information available
Relative Density	0.712
Bulk Density	617 kg/m3
Water solubility	Dispersible.
Partition coefficient: n-octanol/water	No information available
Auto-ignition temperature	No information available
Decomposition temperature	No information available
Kinematic Viscosity	No information available
Explosive properties	Not explosive
Oxidizing properties	No information available
Molecular weight	No information available

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

Reactivity: No hazards to be specially mentioned.

Chemical stability: Stable at normal temperatures and storage conditions. No decomposition if stored and applied as directed.

Possibility of hazardous reactions: No hazards to be specially mentioned.

Conditions to avoid: None known.

Incompatible materials: Strong acids. Strong oxidizing agents.

Hazardous decomposition products: Decomposition products can include trace amounts of copper oxides.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Acute oral toxicity

For the product: LD50 (Rat): 1,847 mg/kg.
Copper dihydroxide: LD50 (Rat, male): 878 mg/kg. OECD Test Guideline 401.
Copper dihydroxide: LD50 (Rat, female): 657 mg/kg. OECD Test Guideline 401.

Acute inhalation toxicity

For the product: LC50, 4 h, Rat (dust/mist): > 2.08 mg/L. The mixture is moderately toxic after short term inhalation.
Copper dihydroxide: LC50, 4 h, Rat (dust/mist): 0.451 mg/L. OECD Test Guideline 403.

Acute dermal toxicity

For the product: LD50/Rat: > 2,000 mg/kg. The mixture has no acute dermal toxicity.
Copper dihydroxide: LD50 (Rat, male and female): > 2,000 mg/kg. OECD Test Guideline 402. No deaths occurred at this concentration. The substance has no acute dermal toxicity.

Skin corrosion/irritation

As product: Rabbit. No skin irritation.
Quartz: No skin irritation.

Serious eye damage/eye irritation

As product: Rabbit. Mild eye irritation.
Copper dihydroxide: Corrosive.
Quartz: No eye irritation.

Sensitization

As product: Guinea pigs. Did not cause sensitisation on laboratory animals.
Copper dihydroxide: Guinea pigs. Did not cause skin sensitisation.

Specific Target Organ Systemic Toxicity (Single Exposure)

As product: The substance or mixture is not classified as specific target organ toxicant, single exposure.
Copper dihydroxide: Evaluation of available data suggests that this material is not an STOT-SE toxicant.
Quartz: Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Specific Target Organ Systemic Toxicity (Repeated Exposure)

As product: The substance or mixture is not classified as specific target organ toxicant, repeated exposure.
Quartz: Causes damage to lungs through prolonged or repeated inhalation.

Repeated dose toxicity

Copper dihydroxide: In animals, effects have been reported on the following organs: Liver. Lung. Kidney.
Quartz: In humans, effects have been reported on the following organs: Kidney. Repeated excessive exposure to crystalline silica may cause silicosis, a progressive and disabling disease of the lungs.

Carcinogenicity

Copper dihydroxide: Not classifiable as a human carcinogen. Animal testing did not show any carcinogenic effects. Information given is based on data obtained from similar substances.
Quartz: Has caused cancer in humans. Has caused cancer in laboratory animals. Human carcinogen.

Reproductive toxicity
As product: No toxicity to reproduction.
Copper dihydroxide: In animal studies, did not interfere with reproduction. Did not cause birth defects or any other foetal effects in laboratory animals.
Quartz: For similar materials: Did not cause birth defects or any other foetal effects in laboratory animals.

Germ cell mutagenicity
As product: Animal testing did not show any mutagenic effects.
Copper dihydroxide: In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.
Quartz: In vitro genetic toxicity studies were negative in some cases and positive in other cases.

Aspiration Hazard
As product: Based on physical properties, not likely to be an aspiration hazard.
Copper dihydroxide: Based on physical properties, not likely to be an aspiration hazard.
Quartz: Based on physical properties, not likely to be an aspiration hazard.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Acute and prolonged toxicity to fish
As product: LC50/96 h/Oncorhynchus mykiss (rainbow trout): 0.24 mg/L
Copper dihydroxide: LC50/96 h/flow-through/Pimephales promelas (fathead minnow): 0.0384 mg/L
Quartz: Based on information for a similar material: Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested). LC50/96h/ Danio rerio (zebra fish): 508 mg/L

Acute toxicity to aquatic invertebrates
As product: EC50/48 h/Daphnia magna (Water flea): 0.118 mg/L
Copper dihydroxide: EC50/48 h/Daphnia magna (Water flea): 0.026 mg/L
Quartz: For similar materials. EC50/48h/ Daphnia magna (Water flea): 731 mg/L

Toxicity to aquatic plants
As product: EC50/72 h/Selenastrum capricornutum (green algae): 0.00939 mg/L
Copper dihydroxide: EC50/72 h/ Pseudokirchneriella subcapitata (green algae): 0.047 mg/L

M-factor: Copper dihydroxide (acute and chronic toxicity): 10

Chronic toxicity to fish
Copper dihydroxide: NOEC/90 d: 0.0017 mg/L

Chronic toxicity to aquatic Invertebrates
Copper dihydroxide: NOEC/21 d: 0.03 mg/L

Persistence and degradability
As product: Not readily biodegradable. Estimation based on data obtained on active ingredient.
Copper dihydroxide: Not readily biodegradable. No appreciable biodegradation is expected.
Quartz: Biodegradation is not applicable.

Bioaccumulative potential
As product: Does not bioaccumulate. Estimation based on data obtained on active ingredient.

Copper dihydroxide: Bioconcentration factor (BCF): 3.16. Partition coefficient: n-octanol/water: log Pow: -0.87. Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Quartz: Partitioning from water to n-octanol is not applicable.

Mobility in Soil
Copper dihydroxide: Koc: 21.73. Potential for mobility in soil is very high (Koc between 0 and 50).
Quartz: Distribution among environmental compartments. No relevant data found.

Other adverse effects
Copper dihydroxide: This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).
Ozone-Depletion Potential: This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

Quartz: This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT). Ozone-Depletion Potential: This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

13. DISPOSAL CONSIDERATIONS

Waste from residues: If waste 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. Waste handling, treatment and disposal practices must be in compliance with the New Zealand Hazardous Substances (Disposal) Notice 2017. Additional local requirements may be applicable in accordance with planning controls under the Resource Management Act. Regulations concerning waste management may vary in different locations.

14. TRANSPORT INFORMATION

PUBLIC PASSENGER VEHICLE TRANSPORT: Not to be transported in passenger vehicles

International Regulations

UNRTDG

UN number	:	UN 3077
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (copper hydroxide)
Class	:	9
Packing group	:	III
Labels	:	9
Environmentally hazardous	:	Yes

IATA-DGR

UN/ID No.	:	UN 3077
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (copper hydroxide)
Class	:	9
Packing group	:	III
Labels	:	Miscellaneous
Packing instruction (cargo aircraft)	:	956
Packing instruction (passenger aircraft)	:	956

IMDG-Code

UN number	:	UN 3077
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (copper hydroxide)
Class	:	9
Packing group	:	III
Labels	:	9
EmS Code	:	F-A, S-F
Marine pollutant	:	Yes (copper hydroxide)
Remarks	:	Stowage category A

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

NZS 5433

UN number	:	UN 3077
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (copper hydroxide)
Class	:	9
Packing group	:	III
Labels	:	9
Hazchem Code	:	2Z
Marine pollutant	:	Yes

Further information

Marine Pollutants assigned UN number 3077 and 3082 in single or combination packaging containing a net quantity per single or inner packaging of 5 L or less for liquids or having a net mass per single or inner packaging of 5 KG or less for solids may be transported as non-dangerous goods as provided in section 2.10.2.7 of IMDG code, IATA Special provision A197, and ADR/RID special provision 375.

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

15. REGULATORY INFORMATION

ACVMG APPROVAL NUMBER: P7726
EPA Approval Code: HSR000739

Health and Safety at Work (HSW) Controls

ADVICE TO PRODUCT USERS REGARDING GHS CONTROLS: Users of this product should make reference to the New Zealand Hazardous Substances and New Organisms Act and Regulations, and the Health and Safety at Work Act for relevant risk management controls. Additional local requirements may be applicable in accordance with planning controls under the Resource Management Act. Refer to Environment Protection Authority for more information http://www.epa.govt.nz

16. OTHER INFORMATION

Revision

Identification Number: / A157 / Issue Date: 11.12.2025 / Version: Replaces 30.09.2024
Product code: GFJ-2-1 (GF-4155)
Sections amended: 14

Full text of other abbreviations

ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; ASTM - American Society for the Testing of Materials; ECx - Concentration associated with x% response; EmS - Emergency Schedule; ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - not otherwise specified; NOEC - Non-Observed Effective Concentration; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; (Q)SAR - (Quantitative) Structure Activity Relationship; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SDS - Safety Data Sheet; UN - United Nations. NZIoC - New Zealand Inventory of Chemicals.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.