

1. Identification

GHS product identifier	Kocide 2000
Other means of identification	
Product code	K2000_ZA
Recommended use	Plant protection product. Fungicide.
Recommended restrictions	No data available.
Manufacturer information	
Company	Cosaco LLC 12701 Alameda Road Houston, TX 77045 USA
Telephone number	+1 713-433-6404
E-mail	mail@cosaco.com
Website	www.cosaco.com
Local representative (South Africa)	Disa Bio Technologies
Telephone number	+27 21 794 8566 / + 27 83 247 9749
Emergency telephone	Asia Pacific: 1-760-476-3960 Americas: 1-760-476-3962 Europe: 1-760-476-3961 Middle East/Africa: 1-760-476-3959 Global Response Access Code: 334018 Account: 14537

2. Hazard(s) identification

Physical hazards	Not classified.	
Health hazards	Acute toxicity, oral	Category 4
	Acute toxicity, inhalation	Category 4
	Serious eye damage/eye irritation	Category 2
Environmental hazards	Hazardous to the aquatic environment, acute hazard	Category 2
	Hazardous to the aquatic environment, long-term hazard	Category 1

Label elements



Signal word	Warning
Hazard statement	Harmful if swallowed. Harmful if inhaled. Causes serious eye irritation. Toxic to aquatic life with long lasting effects. Very toxic to aquatic life with long lasting effects.
Precautionary statement	
Prevention	Avoid breathing dust. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear 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 comfortable for breathing. Call a POISON CENTRE/doctor if you feel unwell. 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. Collect spillage.
Storage	Not assigned.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.

Other hazards which do not result in classification None known.

Supplemental information None.

3. Composition/information on ingredients

Mixtures

Hazardous components		
Chemical name	CAS number	%
Copper dihydroxide	20427-59-2	50 - 70
Tetrasodium pyrophosphate	7722-88-5	5 - 10
Sodium hydroxide	1310-73-2	< 2.5
2,4,7,9-Tetramethyldec-5-yne-4,7-diol	126-86-3	< 0.5
Non-hazardous components		
Chemical name	CAS number	%
Limestone	1317-65-3	10 - 25

Composition comments All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Get medical attention immediately.
Skin contact	Wash off immediately with soap and plenty of water. If skin rash or an allergic skin reaction develops, get medical attention.
Eye contact	Do not rub eyes. Immediately flush with plenty of water for up to 15 minutes. Remove any contact lenses and open eyelids wide apart. Get medical attention if irritation develops and persists.
Ingestion	Rinse mouth and drink plenty of water. Never give anything by mouth to a victim who is unconscious or is having convulsions. Get medical attention immediately.
Most important symptoms/effects, acute and delayed	Dust may irritate throat and respiratory system and cause coughing. Contact may produce eye irritation with associated redness, swelling, tears and pain.
Indication of immediate medical attention and special treatment needed	Treat symptomatically.
General information	Get medical attention if discomfort develops or persists. Wash contaminated clothing before reuse. Symptoms may be delayed. Medical observation of 48 hours is necessary.

5. Fire-fighting measures

Suitable extinguishing media	Water spray, dry extinguishing powder or carbon dioxide. Foam.
Unsuitable extinguishing media	High volume water jet.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed. Copper oxides.
Special protective equipment and precautions for firefighters	Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace. Self-contained breathing apparatus and full protective clothing must be worn in case of fire. Prevent runoff from fire control or dilution from entering streams, sewers or drinking water supply.
Fire fighting equipment/instructions	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Ensure adequate ventilation. Avoid dust formation. Refer to protective measures listed in sections 7 and 8.
Methods and materials for containment and cleaning up	Remove material, as much as possible, using mechanical equipment. Clean surface thoroughly to remove residual contamination.
Environmental precautions	Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling

Avoid dust formation. Provide adequate general and local exhaust ventilation. Persons susceptible to allergic reactions should not handle this product. When using, do not eat, drink or smoke. Keep away from food, drink and animal feeding stuffs. Wash hands thoroughly after handling. Provide easy access to water supply and eye wash facilities. Do not breathe dust. Avoid contact with eyes. Keep out of reach of children.

Conditions for safe storage, including any incompatibilities

Keep containers tightly closed in a cool, well-ventilated place. Keep away from food, drink and animal feeding stuffs. Do not store near acids. Store below 35°C.

8. Exposure controls/personal protection

Occupational exposure limits

South Africa. Recommended Exposure Limits (RELs) Regulations for Hazardous Chemical Substances, Table 2

Components	Type	Value	Form
Copper dihydroxide (CAS 20427-59-2)	TWA	2 mg/m ³	Dust and mist.
		0.4 mg/m ³	Fume.
Sodium hydroxide (CAS 1310-73-2)	STEL	4 mg/m ³	

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Provide adequate general and local exhaust ventilation. Provide easy access to water supply and eye wash facilities.

Individual protection measures, such as personal protective equipment

Eye/face protection

Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection

Wear protective gloves. Suitable gloves can be recommended by the glove supplier.
Appropriate Material - nitrile rubber
Material thickness 0.4 - 0.7 mm
Breakthrough time > 480 min

Other

Wear suitable protective clothing.

Respiratory protection

In case of inadequate ventilation or risk of inhalation of dust, use suitable respiratory equipment with particle filter (type P2).

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Handle in accordance with good industrial hygiene and safety practices.

9. Physical and chemical properties

Appearance

Physical state

Solid.

Form

Granules.

Colour

Blue.

Odour

Characteristic.

Odour threshold

Not available.

pH

9.1 (20°C) (10g/l)

Melting point/freezing point

Not available.

Initial boiling point and boiling range

Not available.

Flash point

Not applicable.

Evaporation rate

Not applicable.

Flammability (solid, gas)

Not flammable.

Upper/lower flammability or explosive limits

Explosive limit - lower (%)

Not applicable.

Explosive limit - upper (%)

Not applicable.

Vapour pressure

Not applicable.

Vapour density

Not applicable.

Relative density

Not available.

Solubility(ies)

Solubility (water)

Dispersible in water.

Partition coefficient (n-octanol/water)	Not applicable for mixtures.
Auto-ignition temperature	340 °C (644 °F) Product is not selfigniting.
Decomposition temperature	Not available.
Viscosity	Not applicable.
Other information	
Bulk density	880 kg/m ³ (20°C)
Density	1.15 g/cm ³ (20°C)
Explosive properties	Not explosive.
Oxidising properties	Not oxidising.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Will not occur.
Conditions to avoid	Avoid dust formation. Temperatures above 140 °C.
Incompatible materials	Acids.
Hazardous decomposition products	Copper oxides.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Harmful if inhaled. Dusts of this product may cause irritation of the nose, throat, and respiratory tract.
Skin contact	May cause irritation through mechanical abrasion.
Eye contact	Causes serious eye irritation.
Ingestion	Harmful if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics Dust may irritate throat and respiratory system and cause coughing. Contact may produce eye irritation with associated redness, swelling, tears and pain.

Information on toxicological effects

Acute toxicity Harmful if inhaled. Harmful if swallowed.

Product	Species	Test Results
Kocide 2000 (CAS Mixture)		
Acute		
Dermal		
LD50	Rabbit	> 5000 mg/kg OECD 402
Inhalation		
LC50	Rat	1.311 mg/l, 4 hours OECD 403
Oral		
LD50	Rat	1346 mg/kg OECD 401
Components	Species	Test Results

Copper dihydroxide (CAS 20427-59-2)

Acute

Dermal

LD50 Rabbit > 2000 mg/kg OECD 402 [Manufacturer]

Inhalation

Dust

LC50 Rat 0.451 mg/l, 4 hours OECD 403 [Manufacturer]

Oral

LD50 Rat 451 mg/kg [Manufacturer]

Skin corrosion/irritation May cause irritation through mechanical abrasion.

Serious eye damage/eye irritation Causes serious eye irritation.

Respiratory or skin sensitisation

Respiratory sensitisation Due to lack of data the classification is not possible.

Skin sensitisation The product contains a small amount of sensitising substance which may provoke an allergic reaction among sensitive individuals.

Germ cell mutagenicity Due to lack of data the classification is not possible.

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

Reproductive toxicity Due to lack of data the classification is not possible.

Specific target organ toxicity - single exposure Due to lack of data the classification is not possible.

Specific target organ toxicity - repeated exposure Due to lack of data the classification is not possible.

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

Chronic effects Overexposure to Copper dust/fume can cause metal fume fever. Symptoms may include dry throat, coughing, sweet metal taste, fever and chills, tight chest, dyspnea, headache, blurred vision, back pain, nausea, vomiting, fatigue.

Further information Copper poisoning can result in hemolytic anemia and kidney, liver and spleen damage.

12. Ecological information

Ecotoxicity Toxic to aquatic life. Very toxic to aquatic life with long lasting effects.

Product		Species	Test Results
Kocide 2000 (CAS Mixture)			
Aquatic			
Crustacea	EC50	Daphnia magna	1.61 mg/l, 48 hours OECD 202
	NOEC	Daphnia magna	0.0025 mg/l, 21 days
Fish	LC50	Oncorhynchus mykiss	4.79 mg/l, 96 hours OECD 203
Components			
Copper dihydroxide (CAS 20427-59-2)			
Aquatic			
Algae	ErC50	Algae	22.51, 96 h mg Cu/l, OECD 201
Crustacea	EC50	Daphnia magna	0.0422, 48 h mg Cu/l, OECD 202
Fish	LC50	Oncorhynchus mykiss	0.135, 96 h mg Cu/l, OECD 203

Persistence and degradability The degradability of the product has not been stated.

Bioaccumulative potential Not relevant for inorganic substances.

Mobility in soil Disperses in water.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions Dispose in accordance with all applicable regulations.

Waste from residues / unused products Dispose in accordance with local regulations. Do not discharge into drains, water courses or onto the ground.

Contaminated packaging Since emptied containers retain product residue, follow label warnings even after container is emptied.

14. Transport information

ADR

UN number UN3077

UN proper shipping name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper dihydroxide)

Transport hazard class(es)

Class 9

Subsidiary risk -

Label(s) 9

Hazard No. (ADR) 90

Tunnel restriction code -

Packing group III

Environmental hazards Yes

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.
Classification code M7.

RID

UN number	UN3077
UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper dihydroxide)
Transport hazard class(es)	
Class	9
Subsidiary risk	-
Label(s)	9
Packing group	III
Environmental hazards	Yes
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling. Classification code M7.

IATA

UN number	UN3077
UN proper shipping name	Environmentally hazardous substance, solid, n.o.s. (Copper dihydroxide)
Transport hazard class(es)	
Class	9
Subsidiary risk	-
Packing group	III
Environmental hazards	Yes
ERG Code	9L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number	UN3077
UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper dihydroxide)
Transport hazard class(es)	
Class	9
Subsidiary risk	-
Packing group	III
Environmental hazards	
Marine pollutant	Yes
EmS	F-A, S-F
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

15. Regulatory information

Safety, health and environmental regulations specific for the product in question This product is classified in accordance with SANS 10234: 2019 – Globally Harmonized System of Classification and Labeling of Chemicals (GHS). This Standard is aligned with the 4th revision of the UN GHS Purple book.

Hazardous Substances Act, 1973 (Act No. 15 of 1973)

Not listed.

International regulations**Stockholm Convention**

Not applicable.

Rotterdam Convention

Not applicable.

Montreal Protocol

Not applicable.

Kyoto Protocol

Not applicable.

Basel Convention

Copper dihydroxide (CAS 20427-59-2)

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Industrial Chemicals (AICIS)	Yes
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	Yes
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes

Country(s) or region	Inventory name	On inventory (yes/no)*
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information

Issue date	13-June-2022
Revision date	-
Version No.	01
List of abbreviations	EC50: Effective Concentration 50%. LC50: Lethal Concentration 50%. NOEC: No observed effect concentration. LD50: Lethal Dose 50%.
References	ACGIH NLM: Hazardous Substances Data Base HSDB® - Hazardous Substances Data Bank National Toxicology Program (NTP) Report on Carcinogens European Treaty for international road transport of dangerous goods (ADR) Rules for international transport of dangerous goods by railway (RID) International Maritime Code for the Transport of Dangerous Goods (IMDG) IARC Monographs. Overall Evaluation of Carcinogenicity
Disclaimer	The information in the sheet was written based on the best knowledge and experience currently available.