

1. IDENTIFICATION

Product identifier

Product Name Kocide® HCu

Other means of identification

Product Code 91411-12-70051
Synonyms Funguran® Progress
Registration Number(s) 91411-12-70051

Recommended use of the chemical and restrictions on use

Recommended Use Fungicide
Uses advised against No information available

Details of the supplier of the safety data sheet

Manufacturer Address	Distributed by
Kocide LLC	Certis USA L.L.C.
9145 Guilford Road, Suite 175	9145 Guilford Road, Suite 175
Columbia, MD 21046	Columbia, MD 21046
USA	USA
Website: www.kocide.com	Website: www.certisusa.com

Emergency telephone number

Company Phone Number Certis USA +1 301-604-7304
Emergency Telephone ChemTel, Inc.: 1-800-255-3924 (outside the U.S. +1-813-248-0585)
 POISON CONTROL CENTER: 800-222-1222

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Oral	Category 4
Serious eye damage/eye irritation	Category 1

Label elements

Danger

Emergency Overview

Hazard statements

Harmful if swallowed
 Causes serious eye damage



Appearance powder**Physical state** Solid**Odor** None**Precautionary Statements - Prevention**

Wash face, hands and any exposed skin thoroughly after handling
 Do not eat, drink or smoke when using this product
 Wear protective gloves/protective clothing/eye protection/face protection

Precautionary Statements - Response

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
 Immediately call a POISON CENTER or doctor/physician
 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
 Rinse mouth

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

Not applicable

Other Information

May be harmful in contact with skin. Causes mild skin irritation. Very toxic to aquatic life with long lasting effects. Very toxic to aquatic life.

Unknown acute toxicity

23% of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance

Not applicable

Mixture

Chemical Name	CAS No	Weight-%
Copper hydroxide *	20427-59-2	77.0
Other ingredients *	Proprietary	10 - 30
Limestone *	1317-65-3	3 - 7
Silica, amorphous, precipitated and gel *	112926-00-8	1 - 5

If CAS number is "proprietary", the specific chemical identity and percentage of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

Description of first aid measures**General advice**

Call a poison control center or doctor for treatment advice. Have the product containers or label with you when calling a poison control center or doctor, or going for treatment.

Eye contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a poison control center or doctor for treatment advice.

Skin contact

Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Wash contaminated clothing before reuse. If skin irritation persists, call a physician. Call a poison control center or doctor for treatment advice.

Inhalation	Move victim to fresh air. If breathing is irregular or stopped, administer artificial respiration. Call a physician or poison control center immediately. Call a poison control center or doctor for treatment advice.
Ingestion	Call a physician or poison control center immediately. Drink 1 or 2 glasses of water. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person.
Self-protection of the first aider	Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

Most important symptoms and effects, both acute and delayed

Symptoms	May cause redness and tearing of the eyes. May result in permanent damage including blindness.
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Indication of any immediate medical attention and special treatment needed

Note to physicians	Probable mucosal damage may contraindicate the use of gastric lavage. Treat symptomatically.
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5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

Dry chemical, CO₂, water spray or regular foam. Move containers from fire area if you can do it without risk. Dike fire-control water for later disposal.

Unsuitable extinguishing media Do not scatter spilled material with high pressure water streams.

Specific hazards arising from the chemical

Thermal decomposition can lead to release of irritating and toxic gases and vapors. Runoff may pollute waterways.

Explosion data

Sensitivity to Mechanical Impact None.

Sensitivity to Static Discharge None.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Cool containers / tanks with water spray.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Ensure adequate ventilation, especially in confined areas. Avoid creating dust.

For emergency responders Use personal protection recommended in Section 8. Ventilate the area.

Environmental precautions

Environmental precautions Prevent further leakage or spillage if safe to do so. Do not flush into surface water or sanitary sewer system.

Methods and material for containment and cleaning up

Methods for containment	Prevent dust cloud. Prevent further leakage or spillage if safe to do so.
Methods for cleaning up	Avoid creating dust. Do not dry sweep dust. Wet dust with water before sweeping or use a vacuum to collect dust. Sweep up and shovel into suitable containers for disposal. Do not place spilled materials back into the original container.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling	Avoid generation of dust. Use personal protective equipment as required. Do not breathe dust. Avoid contact with skin, eyes or clothing. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product.
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Conditions for safe storage, including any incompatibilities

Storage Conditions	Keep container tightly closed in a dry and well-ventilated place. Keep in properly labeled containers. Keep out of the reach of children. Keep away from food, drink and animal feeding stuffs. Keep away from heat.
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Packaging materials	Do not reuse container.
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Incompatible materials	Strong acids.
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8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Copper hydroxide 20427-59-2	TWA: 1 mg/m ³ Cu dust and mist	-	IDLH: 100 mg/m ³ Cu dust and mist TWA: 1 mg/m ³ Cu dust and mist
Limestone 1317-65-3	-	TWA: 15 mg/m ³ total dust TWA: 5 mg/m ³ respirable fraction	TWA: 10 mg/m ³ total dust TWA: 5 mg/m ³ respirable dust
Silica, amorphous, precipitated and gel 112926-00-8	-	TWA: 20 mppcf : (80)/(% SiO ₂) mg/m ³ TWA	-

NIOSH IDLH Immediately Dangerous to Life or Health

Appropriate engineering controls

Engineering Controls	Ensure adequate ventilation, especially in confined areas. Showers. Eyewash stations. Ventilation systems.
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Individual protection measures, such as personal protective equipment

Eye/face protection	Wear safety glasses with side shields (or goggles). If splashes are likely to occur: Wear suitable face shield.
Skin and body protection	Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.
Respiratory protection	Ensure adequate ventilation, especially in confined areas. Respiratory protection. Any particulate respirator equipped with an N95, R95, or P95 filter (including N95, R95, and P95 filtering facepieces) except quarter-mask respirators. The following filters may also be used: N99, R99, P99, N100, R100, P100.

General Hygiene Considerations	When using do not eat, drink or smoke. Regular cleaning of equipment, work area and clothing is recommended. Avoid contact with skin, eyes or clothing. Wash hands thoroughly
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after handling. Keep away from food, drink and animal feeding stuffs. Wash contaminated clothing before reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Solid	Odor	None
Appearance	powder	Odor threshold	No information available
Color	blue		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	8.2	solution (1 %)
Melting point / freezing point	No information available	
Boiling point / boiling range	No information available	
Flash point	Not applicable	
Evaporation rate	No information available	
Flammability (solid, gas)	No information available	
Flammability Limit in Air		
Upper flammability limit:	No information available	
Lower flammability limit:	No information available	
Vapor pressure	0 mmHg	@ 25 °C
Vapor density	No information available	
Relative density	0.435 g/mL	
Water solubility	slightly soluble	
Solubility in other solvents	No information available	
Partition coefficient	No information available	
Autoignition temperature	182 °C / 360 °F	
Decomposition temperature	No information available	
Kinematic viscosity	No information available	
Dynamic viscosity	No information available	
Explosive properties	Not an explosive	
Oxidizing properties	Not applicable	

Other Information

Softening point	No information available
Molecular weight	No information available
VOC Content (%)	No information available
Density	No information available
Bulk density	0.625 g/mL (tap bulk density)

10. STABILITY AND REACTIVITY

Reactivity

No data available

Chemical stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Conditions to avoid

Storage near to reactive materials. Temperatures above 140 °C / 284 °F.

Incompatible materials

Strong acids.

Hazardous Decomposition Products

Thermal decomposition can lead to release of irritating and toxic gases and vapors.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information	Acute Oral LD50 (rat): 1250 - 1750 mg/kg Acute Dermal LD50 (rabbit): > 2000 mg/kg Eye Irritation (rabbit): Corrosive. Skin Irritation (rabbit): Not an irritant. Inhalation LC50 (rat): >5.45 mg/L (4 HR) Skin Sensitization (guinea pig): Not a sensitizer
Inhalation	Based on available data, the classification criteria are not met.
Eye contact	Corrosive to the eyes and may cause severe damage including blindness.
Skin contact	Based on available data, the classification criteria are not met.
Ingestion	Harmful if swallowed.

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Copper hydroxide 20427-59-2	= 489 mg/kg (Rat)	> 2000 mg/kg (Rat)	= 0.5 mg/L (Rat) 4 h

Information on toxicological effects

Symptoms	May cause redness and tearing of the eyes. May result in permanent damage including blindness.
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Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization	Based on available data, the classification criteria are not met.
Germ cell mutagenicity	Based on available data, the classification criteria are not met.
Carcinogenicity	Based on available data, the classification criteria are not met.

Chemical Name	ACGIH	IARC	NTP	OSHA
Silica, amorphous, precipitated and gel 112926-00-8	-	Group 3	-	-

IARC (International Agency for Research on Cancer)

Not classifiable as a human carcinogen

Reproductive toxicity	Based on available data, the classification criteria are not met.
STOT - single exposure	Based on available data, the classification criteria are not met.
STOT - repeated exposure	Based on available data, the classification criteria are not met.
Chronic toxicity	Avoid repeated exposure. May cause adverse liver effects.
Other adverse effects	The following effects occurred at levels of exposure that significantly exceed those expected under labeled usage conditions.: Liver effects, Kidney effects, microcytic anemia, Information given is based on data obtained from similar substances.
Aspiration hazard	Based on available data, the classification criteria are not met.

Numerical measures of toxicity - Product Information

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (oral)	1250.00 mg/kg
ATEmix (dermal)	2,002.00 mg/kg

12. ECOLOGICAL INFORMATION

Ecotoxicity

Very toxic to aquatic life with long lasting effects.

This pesticide is toxic to fish and aquatic organisms. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this

product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA.

23 % of the mixture consists of component(s) of unknown hazards to the aquatic environment

Chemical Name	Algae/aquatic plants	Fish	Crustacea
Copper hydroxide 20427-59-2	0.00939: 72 h Pseudokirchneriella subcapitata mg/L EC50	0.135: 96 h Oncorhynchus mykiss (rainbow trout) mg/L LC50	0.0422: 48 h Daphnia magna mg/L EC50

Persistence and degradability

Not readily biodegradable.

Bioaccumulation

Not likely to bioaccumulate.

Other adverse effects

This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT)

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes

Pesticide wastes may be acutely hazardous. Improper disposal is a violation of federal law. Disposal should be in accordance with applicable regional, national and local laws and regulations. Contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance on proper disposal of waste product.

Contaminated packaging

Disposal should be in accordance with applicable regional, national and local laws and regulations. Consult product label for additional information. Do not reuse container.

14. TRANSPORT INFORMATION

DOT

Not regulated

TDG

Not regulated

IATA

UN/ID no

UN3077

Proper shipping name

Environmentally hazardous substance, solid, n.o.s.

Hazard Class

9

Packing Group

III

ERG Code

9L

Special Provisions

A97, A158, A179, A197

Description

UN3077, Environmentally hazardous substance, solid, n.o.s. (Copper hydroxide), 9, III

IMDG

UN/ID no

UN3077

Proper shipping name

Environmentally hazardous substance, solid, n.o.s.

Hazard Class

9

Packing Group

III

EmS-No

F-A, S-F

Special Provisions

274, 335, 966, 967

Description

UN3077, Environmentally hazardous substance, solid, n.o.s. (Copper hydroxide), 9, III;
Marine Pollutant

15. REGULATORY INFORMATION

International Inventories

TSCA

Complies

DSL/NDSL

Complies

EINECS/ELINCS

Complies

IECSC	Complies
KECL	Complies
PICCS	Complies
AICS	Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

US Federal Regulations**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	SARA 313 - Threshold Values %
Copper hydroxide - 20427-59-2	1.0

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic Health Hazard	No
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Copper hydroxide 20427-59-2	-	X	-	-

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

US State Regulations**California Proposition 65**

This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Copper hydroxide 20427-59-2	X	-	X
Limestone 1317-65-3	X	X	X

Silica, Amorphous	X	X	X
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U.S. EPA Label Information

EPA Pesticide Registration Number 91411-12-70051

EPA Statement

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

Difference between SDS and EPA Pesticide label

DANGER: Corrosive. Causes irreversible eye damage. Do not get in eyes, skin, or clothing. Harmful if swallowed or absorbed through skin. Harmful if inhaled. Avoid contact with skin. Avoid breathing vapor or spray mist.

16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION

<u>NFPA</u>	Health hazards 3	Flammability 1	Instability 0	Physical and Chemical Properties -
<u>HMIS</u>	Health hazards 3	Flammability 1	Physical hazards 0	Personal protection X

Issue Date 07-Sep-2017
Revision Date 07-Sep-2017
Revision Note Updated January 2018 with sub-registration information
 No information available

Disclaimer

The information provided in this Material 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.

End of Safety Data Sheet