



The MSDS format adheres to the standards and regulatory requirements of the United States and may not meet regulatory requirements in other countries.

DuPont
Material Safety Data Sheet

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"DuPont" "KOCIDE" 20/20 FUNGICIDE/BACTERICIDE
M0000658 Revised 19-APR-2006

CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Material Identification

"KOCIDE" is a registered trademark of DuPont.

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Tradenames and Synonyms

"KOCIDE"
COPPER HYDROXIDE
CUPRIC HYDROXIDE
DPX-N6D73

Company Identification

MANUFACTURER/DISTRIBUTOR
DuPont
1007 Market Street
Wilmington, DE 19898

PHONE NUMBERS

Product Information : 1-800-441-7515 (outside the U.S.
302-774-1000)
Transport Emergency : CHEMTREC 1-800-424-9300(outside U.S.
703-527-3887)
Medical Emergency : 1-800-441-3637 (outside the U.S.
302-774-1000)

COMPOSITION/INFORMATION ON INGREDIENTS

Components

Material	CAS Number	%
COPPER HYDROXIDE*	20427-59-2	30.7
INERT INGREDIENTS		69.3

Components (Remarks)

(* Metallic Copper Equivalent 20%)
(Metallic Zinc Equivalent 20% Derived From Basic Zinc Salts)

Components not precisely identified are proprietary or not hazardous.

HAZARDS IDENTIFICATION

Emergency Overview

DANGER. Corrosive. Causes irreversible eye damage. Causes skin irritation. Harmful if swallowed, absorbed through the skin or inhaled. May cause skin sensitization reactions in certain individuals. Avoid contact with the skin, eyes or clothing. Avoid breathing dust.

Potential Health Effects

HUMAN HEALTH EFFECTS OF OVEREXPOSURE BY:

Skin contact may initially include: skin irritation with discomfort or rash; or allergic skin rashes. There are inconclusive or unverified reports of human sensitization.

Eye contact may initially include: corneal opacity or clouding of the eyes, eye corrosion or ulceration, blindness may occur.

Inhalation may initially include: irritation of the upper respiratory passages, with coughing.

Ingestion may initially include: nonspecific discomfort, such as nausea, or weakness, central nervous system depression, which, if severe enough, may lead to death.

Carcinogenicity Information

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.

FIRST AID MEASURES

First Aid

IF IN EYES: Hold eye 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 eye. Call a poison control center or doctor for treatment advice.

IF ON SKIN OR CLOTHING: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

IF SWALLOWED: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.

(FIRST AID MEASURES - Continued)

IF INHALED: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. For medical emergencies involving this product, call toll free 1-800-441-3637. See Label for Additional Precautions and Directions for Use.

Notes to Physicians

Probable mucosal damage may contraindicate use of gastric lavage.

FIRE FIGHTING MEASURES

Flammable Properties

Flash Point & Method : Not determined
Flammable Limits : Not determined
Autoignition Temperature : Not determined

FIRE FIGHTING HAZARDS & PROCEDURES

General Hazard : Negligible fire hazard when exposed to heat or flame.
Extinguishing Media : Use dry chemical, carbon dioxide, water spray, or foam. No incompatible fire fighting media known.
Fire Fighting Instructions: Prevent human exposure to fire, smoke, fumes or products of combustion.
Fire Fighting Equipment : Wear protective clothing and self-contained breathing apparatus.
Hazardous Combustion Products : Decomposes to CuO and H₂O above 140°C.

ACCIDENTAL RELEASE MEASURES

Safeguards (Personnel)

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

(ACCIDENTAL RELEASE MEASURES - Continued)

Spill Clean Up

Land Spill: Sweep up and place in suitable (fiberboard) containers for later disposal.

Water Spill: If feasible, copper may be precipitated/- ultrafiltrated with caustics or other chemicals and resulting sludge disposed of in a chemical landfill.

HANDLING AND STORAGE

Handling (Personnel)

USERS SHOULD: Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

Storage

Do not contaminate water, food or feed by storage.

Store in a cool, dry place.

Storage Temperature : Store below 35°C (95°F). Average shelf life under proper storage conditions is 2 years.

Do not store near feed, food or within the reach of children.

EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls

PESTICIDE APPLICATORS & WORKERS

These workers must refer to the Product Label and Directions For Use attached to the product for Agricultural Use Requirements in accordance with the EPA Worker Protection Standard 40 CFR part 170.

MANUFACTURING, COMMERCIAL BLENDING, & PACKAGING WORKERS

Ventilation : Control enclosed spaces with adequate ventilation to prevent exceedence of ACGIH TLV or OSHA PEL.

Respiratory Protection : In enclosed spaces where the TLV or PEL may be exceeded, wear NIOSH/OSHA approved dust or mist respirator.

Eye Protection : Wear protective eyewear to prevent contact with this substance.

(EXPOSURE CONTROLS/PERSONAL PROTECTION - Continued)

Personal Protective Equipment

Some of the materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for category A on an EPA chemical-resistant category selection chart.

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants.
- Chemical-resistant gloves made of any waterproof material, such as polyvinyl chloride, nitrile rubber or butyl rubber.
- Shoes plus socks.
- Protective eyewear.

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them.

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls.
- Chemical-resistant gloves made of any waterproof material, such as polyvinyl chloride, nitrile rubber or butyl rubber.
- Shoes plus socks.
- Protective eyewear.

Exposure Guidelines

Applicable Exposure Limits

COPPER HYDROXIDE*

PEL (OSHA)	: 1 mg/m ³ , dusts and mists, as Cu, 8 Hr. TWA
TLV (ACGIH)	: 1 mg/m ³ , dusts and mists, as Cu, 8 Hr. TWA
AEL * (DuPont)	: 1.5 mg/m ³ , 8 & 12 Hr. TWA (approximately 1 mg/m ³ , as Cu)

* AEL is DuPont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

PHYSICAL AND CHEMICAL PROPERTIES

Physical Data

Vapor Pressure : Not determined
Density : 0.1917 g/mL
Solubility in Water : Disperses to form a suspension.
pH : 7.8 (1% solution of copper hydroxide)
Melting Point : Decomposes
Odor : Characteristic copper odor
Color : Light blue
Physical State : Powder

STABILITY AND REACTIVITY

Chemical Stability

General : This material is stable under normal conditions.
Incompatible Materials : Acids and sulfur.
Hazardous Decomposition : Decomposes to CuO and H₂O above 140°C
Hazardous Polymerization : Material is not known to polymerize.

TOXICOLOGICAL INFORMATION

Animal Data

Kocide 20/20

Kocide 20/20 was corrosive to the unwashed rabbit eye and moderately irritating to the washed rabbit eye. Corneal opacity was observed in unwashed eyes.

Copper hydroxide

Oral LD50: 489 mg/kg in rats
Dermal LD50: > 2000 mg/kg in rabbits
4-Hour Inhalation LC50: 0.56 mg/L in rats

Copper hydroxide was a slight skin irritant but was not a skin sensitizer.

Repeated oral ingestion of copper hydroxide via gavage produced reduced body weights and food consumption at 15 mg/kg/day and mortality at 30 mg/kg/day in rabbits.

No animal data are available to define carcinogenic, reproductive, or mutagenic hazards of copper hydroxide. Animal data show developmental effects only at exposure levels producing other toxic effects in the adult animal.

ECOLOGICAL INFORMATION

Ecotoxicological Information

AQUATIC TOXICITY:

48 hour EC50 - Daphnia magna: 70.16 ug/L.

AVIAN TOXICITY:

8-Day LC50 - Bobwhite Quail: 3400 ppm.

8-Day LC50 - Mallard Ducklings: > 5000 ppm.

48-Hour LD50 - Honeybee: 68.3 ug/bee.

ENVIRONMENTAL FATE:

EC50 (respiration rate) - activated sludge: 71 mg/L

DISPOSAL CONSIDERATIONS

Waste Disposal

Do not contaminate water, food or feed by disposal.

Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

ENVIRONMENTAL HAZARDS:

This pesticide is toxic to fish and aquatic organisms. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Drift and runoff from treated areas may be hazardous to fish and aquatic organisms in adjacent aquatic sites. Do not contaminate water by disposal of equipment washwaters.

Container Disposal

Completely empty bag into application equipment, then dispose of empty bag in a sanitary landfill, or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

TRANSPORTATION INFORMATION

Shipping Information

Department of Transportation (DOT):

Proper Shipping Name : Not Regulated by DOT unless shipped in bulk package or by water. See IMO/IMDG description.

IMO/IMDG:

Proper Shipping Name : Environmentally Hazardous Substances, Solid, n.o.s., (Copper Hydroxide)
Hazard Class : 9
UN/NA Number : UN 3077
Packaging Group : III
Marine Pollutant : Yes
Reportable Quantity : No

IATA/ICAO:

Not Regulated

REGULATORY INFORMATION

U.S. Federal Regulations

TITLE III HAZARD CLASSIFICATIONS SECTIONS 311, 312

Acute : Yes
Chronic : No
Fire : No
Reactivity : No

In the United States this product is regulated by the US Environmental Protection Agency under the Federal Insecticide, Fungicide and Rodenticide Act. It is a violation of federal law to use this product in a manner inconsistent with its labeling.

EPA Reg. No. 352-685

OSHA:

This product is considered hazardous under the OSHA Hazardous Communication Standard (29 CFR §1910.1200).

TSCA:

All product components are on the TSCA Chemical Inventory.

CERCLA:

Releases of a component of this material (CAS #7440-50-8: RQ = 5000 lb) to air, land, or water are reportable to the National Response Center under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) or to the state and local emergency planning

(REGULATORY INFORMATION - Continued)

committees under the Superfund Amendments and Reauthorization Act (SARA) Title III Section 304 and 40 CFR Part 302.

RCRA:

When a decision is made to discard this material as supplied, it does not meet RCRA's characteristic definition of ignitability, corrosivity, or reactivity, and is not listed in 40 CFR §261.33.

SARA TITLE III

313 Reportable Ingredients: This product contains a percentage of metallic copper (CAS No. 7440-50-8) and is listed in Section 313 of the Superfund Amendment and Reauthorization Act of 1986 and CFR Part 372.

State Regulations (U.S.)

California:

Listed under copper (CAS No. 7440-50-8) with footnotes referencing above federal standards.

New Jersey:

Footnotes reference above federal standards plus listing of copper on the New Jersey Environmental Hazardous Substances List (NJ Department of Environmental Protection, Title 7 New Jersey Administrative Code (NJAC) Chapter 1G).

Massachusetts:

Listed as copper (CAS No. 7440-50-8) and copper-based pesticide, solid, toxic (no CAS No. assigned).

Pennsylvania:

Listed as copper fume or dust (CAS No. 7440-50-8) as an environmental hazard.

OTHER INFORMATION

NFPA, NPCA-HMIS

HAZARDS CLASSIFICATION:

(0-minimal, 1-slight, 2-moderate, 3-serious, 4-severe)

NFPA: HEALTH-2 FIRE-1 REACTIVITY-0

HMIS: HEALTH-2 FIRE-1 REACTIVITY-0

(Continued)

The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

Responsibility for MSDS: DuPont Crop Protection
Address : Wilmington, DE 19898
Telephone : 1-888-638-7668

This information is based upon technical information believed to be reliable. It is subject to revision as additional knowledge and experience is gained.

End of MSDS