

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.a. Product identifier

Trade Name: **Vitra 40 DF**
Other means of identification: Cupric hydroxide; Copper (II) Hydroxide

1.b. Recommended use of the chemical and restrictions on use

Identified uses: Fungicide and Bactericide for crop protection under EPA Reg. No. 35484-8.
Uses advised against: Do not use for other purposes other than those described on the label.

1.c. Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

Supplier: **INDUSTRIAS QUIMICAS DEL VALLÉS, S.A.**
Address: Av. Rafael Casanova, 81
08100 – Mollet del Vallés (Barcelona) – Spain
Telephone number: (34) 935.796.677
Fax: (34) 935.791.722
E-mail address for a competent person responsible for the safety data sheet: fsegur@iqvagro.com

1.d. Emergency phone number

National Pesticides Information Center (NPIC) 1-800-858-7378 Availability: Mo-Fri 8:00 a.m to 12:00 p.m Pacific time
Poison Help Line: 1-800-222-1222 Availability: 24 h, 7 days/week
Other comments: No information available.

SECTION 2: Hazards identification

2.a. Classification of the substance or mixture

Classification according Hazard Communication Standard (HCS), 29 CFR 1910.1200, paragraph D

Hazard Classes/ categories	Acute Tox.	Oral;	Cat.3
	Acute Tox.	Dermal;	Cat.4
	Acute Tox.	Inhalation;	Cat.4

2.b. Signal word, hazard statement(s), symbol(s) and precautionary statement(s)

Signal word: DANGER
Hazard statement(s): Toxic if swallowed
Harmful in contact with skin
Harmful if inhaled

Symbol(s):



Precautionary statement(s): Wash hands thoroughly after handling.
Do not eat, drink or smoke when using this product.
Avoid breathing dust and spray.
Wear protective gloves/ protective clothing/ eye protection/ face protection.
If on skin: Wash with plenty of soap and water.
If inhaled: Remove person to fresh air and keep comfortable for breathing.
If swallowed: Call a poison center or doctor/physician if you feel unwell.
Rinse mouth.
Wash contaminated clothing before reuse.
Collect spillage.
Dispose of contents/container to an authorised hazardous waste collection site in accordance with local/regional/national/international regulations (to be specified).
Use only outdoors or in a well-ventilated area.

Most important adverse physicochemical, human health and environmental effects

Adverse physicochemical effects : No information available.
Adverse human health effects : Harmful by inhalation. Toxic if swallowed. Harmful in contact with skin.
Adverse environmental effects : Aquatic Acute tox. Hazard Cat. 2: Toxic to aquatic life with long lasting effects.

2.3. Other hazards

Compliance with PBT/vPvB criteria : There are no risks or not classified as PBT or vPvB.



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Other hazards which do not result in classification :

The substance/mixture is not classified as SVHC.

SECTION 3: Composition/information on ingredients

Substance

Chemical name: Cupric Hydroxide; Copper (II) Hydroxide
Common names and synonyms: Copper Hydroxide
CAS number: 20427-59-2
Impurities and stabilizing additives which are themselves classified and which contribute to the classification of the substance: None

Mixture

Concentration: Copper Hydroxide 61.5% w/w (for a technical product having 60.8% w/w Cu content)
Metallic Copper Equivalent: 40% w/w

SECTION 4: First aid measures

4.a. Description of first aid measures

General notes: If symptoms persist, call a physician.
In case of inhalation: 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.
In case of contact with skin: 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.
In case of contact with 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.
Call a poison control center or doctor for treatment advice.
En case of ingestion: **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 by a poison control center or doctor.
Do not give anything to an unconscious person.
Recommendations for first aid responders: Use suitable protective clothing. Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

Note to Physician: Probable mucosal damage may contraindicate the use of gastric lavage.

4.b. Most important symptoms and effects, both acute and delayed

Most important symptoms and effects, both acute and delayed: Burning pain in the mouth and pharynx, nausea, watery and bloody stools, diarrhea, decrease in blood pressure.
Headache and weakness may occur, proceeding to fainting or unconsciousness
Risk of renal and hepatic alterations.

4.c. Indication of any immediate medical attention and special treatment needed

Indication of any immediate medical attention and special treatment needed: **Get immediate medical attention in case of ingestion or if symptoms persist.**
Note to Physician: Probable mucosal damage may contraindicate the use of gastric lavage.
Note to Physician: Check if victim is a copper intolerant individual.
See Section 11 for toxicological information.

SECTION 5: Firefighting measures

5.a Extinguishing media

Suitable extinguishing media: Use dry chemical or CO₂.
Unsuitable extinguishing media: Water jet from high flow (due to risk of contamination).

5.b. Special hazards arising from the substance or mixture

Hazardous combustion products: Above 150°F, Copper hydroxide decomposes to Copper (II) oxide and water.
Other specific hazards: Not known.

5.c. Special protective equipment and precautions for fire-fighters

Special protective equipment: Wear suitable protective clothing and dust mask with filter for chemicals.



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Advice for fire-fighters: Dike area to prevent runoff and collect contaminated fire-fighting water separately. Contaminated water must not enter the sewage system.

SECTION 6: Accidental release measures

6.a. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: Do not breathe the powder.
Avoid contact with mouth, eyes and skin.
People, children and animals must be kept away from the spillage area.

For emergency responders: Wear suitable protective clothing and gloves to prevent contamination.
Read Section 8.b.

Environmental precautions: Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwater or rinsate.
Never use water to clean spills.

6.b. Methods and material for containment and cleaning up

Containment: Cover the product with sawdust, sand or dry earth.
Collect contaminated absorbent for disposal.

Cleaning: Cover the product with sawdust, sand or dry land, sweep it, insert it into a dry container, cover it, identify it and dispose in an authorized place.
Do not clean the contaminated area with water.

Other information: Do not use brushes or compressed air to clean surfaces or clothing.
See Section 8.c. for personal protection.
See Section 13 for waste treatment and disposal.

SECTION 7: Handling and storage

7.a. Precautions for safe handling

Containment and measures to prevent fire: Handle with care.
Use with adequate ventilation.
Avoid generating dust.

Measures to prevent aerosol and dust generation: The job and the methodology should be organized in such a way that direct contact with the product is minimized or prevented.
Avoid spills and leaks.

Measures to reduce the release of the substance or mixture to the environment: The product is for application in the environment for crop protection. To reduce its release, strictly prepare the recommended quantity of spray and do not overdose.
Avoid spills and leaks. If produced, do not use water neither to collect nor to clean them.
See Section 7.

Advice on general occupational hygiene: Handle with care. Avoid contact. When opening, closing or handling open packages, or pouring product, wear goggles to prevent dusting into eyes
Use with adequate ventilation and install safety showers and/or eyewashers nearby.
Wear protective clothing. See section 8.b. for personal protection.
Avoid generating dust.
Wash hands thoroughly after use and specially before eating, drinking, smoking or using the toilet.

7.b. Conditions for safe storage, including possible incompatibilities

Technical measures and storage conditions: Store the product in its original container, closed and tagged, in cool, dry, ventilated and away from food, beverages and feed.
Keep out of reach of children, animals and unauthorized personnel

Packaging materials: Nonrefillable container. Do not reuse or refill this bag.
Completely empty bag into application equipment by shaking and tapping sides and bottom to loosen clinging particles.
When completely empty, offer for recycling if available, or dispose of container in a sanitary landfill or by burning. If burned, stay out of smoke

Requirements for storage rooms and vessels: Keep container closed after use. Avoid high temperatures and frost.

SECTION 8: Exposure controls/personal protection

8.a. OSHA permissible exposure limit (PEL), American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV), and any other exposure limit used or recommended by the chemical manufacturer, importer, or employer preparing the safety data sheet, where available

No DNEL data.

Information on monitoring procedures: N/A



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Currently recommended monitoring methods:	N/A
Specific monitoring standards: There are not data of PNEC	No information available.
Control banding approach ("control banding"):	Good industrial hygiene practices.
8.b. Appropriate engineering controls Appropriate exposure control measures related to the identified use(s) of the substance or mixture:	-
Structural measures to prevent exposure:	N/A
Organisational measures to prevent exposure:	N/A
Technical measures to prevent exposure:	N/A
8.c. Individual protection measures, such as personal protective equipment Eye/Face protection:	Avoid contact. Safety glasses with side-shields. Install safety showers and/or eyewashers nearby.
Hand Protection:	Wear chemical resistant gloves. After use, wash with soap and water. Mittens, boots or mono depending on the hazards associated with the substance or mixture and the possibilities of contact.
Respiratory Protection:	In case of insufficient ventilation use respiratory equipment while preparing the mixture. (Affinity FR FFP1 D - CE 0121 according to EN 149:2001) Do not breathe dust. Full-face mask.
Skin Protection	Wear suitable clothing to avoid repeated or delayed contact with skin: long-sleeved shirt, long pants and shoes plus socks. Thoroughly wash working clothes daily. Wash with soap and hot water. Keep and wash PPE separately from other laundry. Discard clothing and other absorbent material that have been drenched or heavily contaminated with the product's concentrate.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance:	Light gree-bluish granules
Odour:	Odourless
Odour threshold:	N/A
pH-value at 1%:	8 - 10 (20 °C)
Melting point/freezing point:	N/A
Initial boiling point and boiling range:	N/A
Flash point:	>61 °C
Evaporation Rate:	Not applicable.
Flammability (solid, gas):	Not flammable.
Upper/lower flammability or explosive limits:	N/A
Vapour pressure:	N/A
Vapour density:	N/A
Relative density:	065-0.85 g/cm ³ (20 °C)
Solubility (ies):	in water: Practically insoluble in lipids: Practically insoluble
Partition coefficient: n-octanol/water:	N/A
Auto-ignition temperature:	>600 °C
Decomposition temperature:	starts at 150° F
Viscosity:	N/A
Explosive properties:	Not explosive

SECTION 10: Stability and reactivity

10.a. Reactivity

Reactivity: N/A

10.b. Chemical stability

Chemical stability: Stable under normal conditions of storage for a minimum period of 2 years



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10.c. Possibility of hazardous reactions

Possibility of hazardous reactions: N/A

10.d. Conditions to Avoid

Conditions to Avoid: Moisture and temperatures above 40° C.

10.e. Incompatible materials

Incompatible materials: Acids, sulphur and ammonium salts partially dissolve the product.

10.f. Hazardous decomposition products

Hazardous decomposition products: Copper hydroxide decomposes at temperatures above 70 °F producing copper (II) oxide,. It does not decompose if stored and applied as directed.

SECTION 11: Toxicological information

11.a. Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact)		Eye and skin contact.
11.b. Symptoms related to the physical, chemical and toxicological characteristics		
Symptoms related to physical characteristics		Not known.
Symptoms related to chemical characteristics		Repeated exposure to large quantities of the product's dust or spray may result in: <ul style="list-style-type: none"> ○ irritation of eyes and of the upper respiratory tract ○ metallic taste
Symptoms related to toxicological characteristics		Burning pain in the mouth and pharynx, nausea, watery and bloody stools, diarrhea, decrease in blood pressure. Headache and weakness may occur, proceeding to fainting or unconsciousness.
11.c. Delayed and immediate effects and also chronic effects from short- and long-term exposure		Probable mucosal damage. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. Repeated exposure to large quantities of the product's dust or spray may result in irritation of eyes and of the upper respiratory tract If ingested, anemia and liver and kidney damage may appear.
11.d. Numerical measures of toxicity		Results: COPPER HYDROXIDE 40% (as Cu) WG
Acute toxicity	Ingestion: LD50	< 300 mg/Kg bw < LD50 < 500 mg/Kg bw ·Rat
	Inhalation: LC50	1.043 mg/l ·Rat/4h
	Skin: LD50	>2000 mg/Kg bw·Rat
Irritation:		Skin: No oedema. No erythema. (rabbit) Eye: No effects (rabbit)
Sensitisation:		Not sensitizer (Guinea pig)
11.e. Whether the hazardous chemical is listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition) or has been found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest edition), or by OSHA:		N/A

Information on likely routes of exposure: See section 8.c

SECTION 12: Ecological information

12.a. Toxicity

Acute toxicity (short-term)

Fishes: LC50/ *O.mykiss* / 96 h = 0.01 mg Cu/l

Chronic (long-term) toxicity

Crustaceans: 21 d NOEC aquatic invertebrates (*D.magna*) = 0.046 mg Cu/l (total)

12.b. Degradability
Copper does not degrade and, furthermore, it is strongly absorbed by soils and has an extremely low vapour pressure.

12.c. Bioaccumulative potential

Bioconcentration factor (BCF): Copper does not bioaccumulate. Organisms excrete copper naturally.

12.d. Mobility in soil

Known or predicted distribution to environmental compartments: Copper that is added to the soil mainly becomes bound to organic material. The content of organic material in the soil and the pH determine the degree of copper availability: the less



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organic matter and the more acid, higher availability. Through the strong bounding to various soil components, the leaching out of copper is extremely low. Mobility in soil towards deeper layers is therefore very low, however, its potential for runoff may last for several months or more after application. Poorly draining soils and soils with shallow water tables are more prone to produce runoff that contains this product.

12.e. Other adverse effects

Ecotoxicity:

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Other adverse effects:

Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas. No other ecological adverse effects are reported for Copper Hydroxide, including photochemical ozone creation potential, ozone depletion potential, endocrine disrupting potential or global warming potential.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Appropriate methods of waste treatment of both substance or mixtures:

Appropriate methods of waste treatment of contaminated packaging:

Community/national/regional provisions relating to waste:

Waste should not be removed through the sewer. The elimination will be followed according to local, State or national provisions, either by incineration or recycling.

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SECTION 14: Transport information

ADR/RID

UN Number:

UN3077

Proper Shipping Name:

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (contains COPPER HYDROXIDE TECHNICAL)

Class:

9



ADR/RID Classification:

M7

Packing group:

III

Label:

9

Special Provisions:

274,335,601

Limited Quantities:

5 kg

Packing Instructions:

P002,IBC08,LP02,R001

Special Packing Provisions:

VV1

Hazard identification number:

90

Kemler Code:

000

IMDG

Marine Pollutant:

Yes

UN Number:

3077

Packing group:

III

Proper Shipping Name:

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (contains COPPER HYDROXIDE TECHNICAL)

Class:

9

Label:

III

EmS Guide:

F-A, S-F

IATA

UN Number:

UN3077

Packing group:

-

Proper Shipping Name:

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Class:

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Label: -

DOT Not regulated by DOT/49 CFR unless shipped in bulk package or by water

SECTION 15: Regulatory information

EPA Registration Number.: 35484-8

Use authorizations: Fungicide and bactericide for crop protection.

Use restrictions: See label.

Other regulations: Not available.

Information on emission of volatile organic compounds (VOC): Not available.

National regulations:
FIFRA Information for the SDS:

This Chemical is a fungicide and bactericide product for organic production 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:

WARNING

May be fatal if swallowed

Harmful if inhaled

Harmful if absorbed through skin

This pesticide is toxic to fish and aquatic invertebrates and may contaminate water through runoff.

15.2. Chemical safety assessment

Chemical safety assessment: Not available.

SECTION 16: Other information

Reason for revision: N/A

Changes to the previous version: N/A

Abbreviations and acronyms:

a.i.	Active ingredient
ACGIH	American Conference of Governmental Industrial Hygienists
ADR	European Agreement Concerning the International Carriage of Dangerous Goods by Road
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
DNEL	Derived non-effect level
DOT	Department of Transportation
EHS	Extremely Hazardous Substances
EPA	Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
N/A	Not available
NTP	National Toxicology Program
OSHA	Occupational Safety and Health Agency
RID	International Rule for Transport of Dangerous Substances by Railway
SARA	Superfund Amendments and Reauthorization Act
TSCA	Toxic Substances Control Act
LC50	Lethal concentration 50%
LD50	Lethal dose 50%
NOEC	No Observed Effect Concentration
NOEL	Non-observed effect level
NOAEL	Non observed adverse effect level
NOAEC	Non observed adverse effect concentration



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OECD	Organisation for Economic Co-operation and Development
OEL	Occupational Exposure Limit
PBT	Persistent, Bioaccumulative and Toxic
PNEC	Predicted non-effect concentration
SVHC	Substances of Very High Concern
TRGS	Real Time Gross Settlement
SDS	Safety Data Sheet
vPvB	Very Persistent and very Bioaccumulative

Key literature references and sources for data:

REACH Registraton dossier and database of registered substances on the European Chemicals Agency (ECHA).

Other information:

This information is based on the knowledge we have so far. This SDS refers exclusively to this product. All chemical substances in this product have been reported or are exempt from notification under notification to the EC laws.

Information in this SDS is based on the available published sources and is believed to be accurate. No warranty, express or implied, is made and our company assumes no liability resulting from the use of this SDS. The user must determine suitability of this information for his application. The specifications of this safety data sheet describes the safety requirements of our product, this is not a guarantee of characteristics. They are based on current state.