SAFETY DATA SHEET NORDOX 50WP (Copper Nordox)

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

Date issued	06.04.2015

1.1. Product identifier

Product name	NORDOX 50WP (Copper Nordox)
Chemical name	Copper(I) oxide
CAS no.	1317-39-1
EC no.	215-270-7
Formula	Cu2O

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/preparation	Fungicide and bactericide

1.3. Details of the supplier of the safety data sheet

Manufacturer

Company name	NORDOX AS
Postal address	Østensjøveien 13
Postcode	0661
City	OSLO
Country	Norway
Tel	+47 22 97 50 00
Fax	+47 22 64 12 08
E-mail	marketing@nordox.no
Website	http://www.nordox.no

1.4. Emergency telephone number

Emergency telephone	Emergency telephone:+47 22 97 50 00

SECTION 2: Hazards identification

2.1. Classification of substance or mixture

Classification according to 67/548/EEC or 1999/45/EC	Xn; R22
Classification according to Regulation (EC) No 1272/2008 [CLP/GHS]	Acute tox. 4; H302; On basis of test data Aquatic Acute 1; H400; On basis of test data M-factor 100 Aquatic Chronic 1; H410; On basis of test data M-factor 1

2.2. Label elements

Hazard Pictograms (CLP)

Signal word	Warning
Hazard statements	H302 Harmful if swallowed. H400 Very toxic to aquatic life. H410 Very toxic to aquatic life with long lasting effects.
Supplemental label information	LABEL NAME: NORDOX 50WP (Copper Nordox)

2.3. Other hazards

Description of hazard	Hazard Classes and category codes: Xn Harmful Information concerning particular hazards for human and environment R-22: Harmful if swallowed R-50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. S-2: Keep out of the Reach of children. S-22: Do not breathe dust. S-61: Avoid release to the environment. Physical/chemical hazards : Not Flammable. Not explosive Environmental hazards : Copper is a necessary trace element and stimulates plant growth and yield on copper deficient soil. Copper is an integral part of various oxidating enzymes, and several animal diseases may occur if the diet is deficient in copper. Human health hazards : Cuprous oxide is classified as harmful, but is not considered a dangerous material for working -(Ulmann Encyclopedia, Band 15, page 560 (1978)). It may cause "metallic fever" after inhalation of dust in the same way as other metal dusts. Skin irritation : Non-irritant. Eye irritation : Positive irritant.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Substance	Identification	Classification	Contents
Copper (I) Oxide	CAS no.: 1317-39-1 EC no.: 215-270-7	Xn, N; R22, R50/53 Acute tox. 4; H302; On basis of test data Aquatic Acute 1; H400; On basis of test data Aquatic Chronic 1; H410; On basis of test data	57,9 weight%
Other ingredients not classified			42,1 weight%
Description of the mixture	Inerts including in the total of 42,1 % : MICRODOL CaMg(CO3)2 CAS No. 16389-88-1: 31.1 % CERATOFIX CV CAS No. 85049-30-5: 1.0 % BORRESPERSE NA CAS No. 8061-51-6: 10.0 %		
Substance comments	Substance/preparation : Preparation *As copper dusts or mists (CAS No. 7440-50-8). Compounds not precisely identified are proprietary or not hazardous.		

SECTION 4: First aid measures

4.1. Description of first aid measures

General	Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after an accident.
Inhalation	Remove victim to fresh air. Give artificial respiration if victim does not breathe. Seek medical advice.
Skin contact	Remove contaminated clothing. Wash off with plenty of water and soap.
Eye contact	Wash out with plenty of water with the eyelid held wide open for at least 15 minutes. Seek medical advice.
Ingestion	One glass of water with addition of one tablespoon of common salt may induce vomiting. Seek medical advice.

4.2. Most important symptoms and effects, both acute and delayed

4.3. Indication of any immediate medical attention and special treatment needed

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	CO2,powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

5.2. Special hazards arising from the substance or mixture

5.3. Advice for firefighters

Personal protective equipment	Wear self-contained respiratory protective device
Other Information	Collect contaminated fire fighting water separately. It must not enter the sewage system.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal protection measures	Avoid formation of dust. Use dust mask and eye protection. Do not breathe dust and avoid contact with eyes. Ensure adequate ventilation. No smoking.

6.2. Environmental precautions

Environmental precautionary measures	Do not allow to enter sewage and other bodies of water.

6.3. Methods and material for containment and cleaning up

Cleaning method	The product should be collected for recycling, or be disposed of in a place where copper is tolerated or needed. To be recovered in the most convenient way (see Item 13).

6.4. Reference to other sections

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Handling	Do not breathe dust and avoid contact with eyes. Take pre¬cautionary measures against static discharges. Prevent formation of dust.

7.2. Conditions for safe storage, including any incompatibilities

Storage	Store in a dry and preferably cool place. Store away from foodstuffs.

7.3. Specific end use(s)

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational Exposure limit values

Substance	Identification	Value	TWA Year
Copper (I) Oxide	CAS no.: 1317-39-1 EC no.: 215-270-7	8-hour TWA: 1 mg/m3, TLV 8-hour TWA: 1 mg/m3, PEL	

8.2. Exposure controls

Limitation of exposure on workplace	Engineering measures Take precautionary measures against static discharges. Hygienic measures When using do not eat, drink or smoke. Wash hand before breaks and at the end of work. Occupational Exposure Limits Not classified.

Safety signs

Respiratory protection

Respiratory protection	Wear dust mask.

Hand protection

Hand protection	Wear rubber gloves.

Eye / face protection

Eye protection	Safety goggles in case of dust.

Other Information

Other Information	NORDOX 50WP is a registered pesticide. Read and follow the information on the label before use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Powder
Colour	Red-brown
Odour	None
pH (as supplied)	Value: 7.0
Comments, pH (as supplied)	(1% solution)
Melting point/melting range	Value: > 332 °C Method of testing: O`connor and Mullee, 2003
Boiling point / boiling range	Value: > 332 °C Method of testing: O`connor and Mullee, 2003
Comments, Boiling point / boiling range	Decomposes over 332 degrees before boiling. (Purity 87.4 % as total copper)
Comments, Flash point	Not required (solid)
Flammability (solid, gas)	Not highly flammable
Lower explosion limit with unit of measurement	Non explosive
Upper explosion limit with units of measurement	Non explosive
Comments, Vapour pressure	Not necessary as the meting point is above 300 degrees C
Specific gravity	Value: ~ 5,87 kg/L Method of testing: O`connor and Mullee, 2003 Test temperature: 20 °C
Solubility in water	Solubility in water at pH 6.6 salt: 0,000639 g/L at 20 ° C as Cu 0,000539.

	(Purity 87.4 % as total copper)
Solubility in organic solvents	Value: < 14 mg/L Name: O`connor and Mullee, 2003 Test temperature: 20 °C
Comments, Solubility	Organic solvent: Toluen
Comments, Partition coefficient: n-octanol / water	Not relevant for the ecotoxicological risk assessement, due to the specific absorption mechanism of copper.
Comments, Spontaneous combustability	Not auto-flammable - self ignition temperature is 234 degrees C. (Baker, D. 2003)
Comments, Viscosity	Not applicable

Physical hazards

Oxidising properties	Not oxidizing

9.2. Other information

Bulk density	Value: 1,05 kg/L Test temperature: 20 °C
Comments, Bulk density	CIPAC MT 169
Comments, Solvent content	Organic solvents, a determination of the stability in organic solvents is unnecessary. Moreover the active substance as manufactured does not include any organic solvents.
Air reactive	Not oxidizing

Other physical and chemical properties

Physical and chemical properties	Einecs ref.: Unit 250, col. 2, page 125.

SECTION 10: Stability and reactivity

10.1. Reactivity

10.2. Chemical stability

Stability	Stable under normal conditions

10.3. Possibility of hazardous reactions

10.4. Conditions to avoid

Conditions to avoid	High humidity, contact with acids

10.5. Incompatible materials

10.6. Hazardous decomposition products

Hazardous decomposition products	No dangerous decomposition products known

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicological Information:

Other toxicological data	Acute toxicity Oral LD50 = 1516 mg/kg bodyweight Dermal LD50 > 8000 mg/kg bodyweight Inhalation LC50 > 11.08 mg/l

Other information regarding health hazards

General	Copper is an essential element and therefore, its concentration in the body is strictly and efficiently regulated by homeostatic mechanisms.

Acute toxicity, Mixture estimate

Dermal	Non irritant (OECD)
Metabolism	Metabolism does not occur. Copper is a monatomic ion and cannot be metabolised. It is however used in every cell in the body, and every cell can regulate its copper content.

Potential acute effects

Inhalation	Inhalation: Copper (I) oxide showed little/no toxicity when administered to test animals by other routes. Furthermore, information on the particle size distribution and low water solubility of Copper (I) oxide indicate a low potential for inhalation exposure.
Skin contact	Skin sensitivity: Non sensitiser
Eye contact	Moderate (unwashed) and non-irritation (washed)

Delayed effects / repeated exposure

Skin contact	Non-sensitier
Chronic effects	Cuprous oxide is classified as harmful, but is not considered a dangerous material for working (Ulmann Encyclopedia, Band 15, page 560 (1978). It may cause "metallic fever" after inhalation of dust in the same way as other metal dusts.

Carcinogenic, Mutagenic or Reprotoxic

Mutagenicity	Negative results were obtained for copper sulphate in vitro in a bacterial cell reverse mutation assay (OECD 471). An In vivo unscheduled DNA synthesis test (equivalent to OECD 486) and a mouse micronucleus test (EC method B.12) performed on copper sulphate also gave negative results. Copper (I) oxide does not meet the criteria for classification.
Reproductive toxicity	NOAEL for reproductive toxicity of copper sulphate pentahydrate in rats is > 1500 ppm in food. Test guideline OECD 416. Copper (I) oxide does not meet the criteria for classification.

Symptoms of Exposure

Comments	Copper (I) oxide is not classified on the basis of acute oral, inhalation or dermal toxicity. Copper (I) oxide does not meet the criteria for classification as STOT for a single exposure.

SECTION 12: Ecological information

12.1. Toxicity

Ecotoxicity	Copper is a necessary trace element and stimulates plant growth and yield on copper deficient soil. Copper is an intergral part of various oxidating enzymes, and several animal diseases may occur if the diet is deficient in copper. Cuprous oxide is an active ingredient in antifouling paints and accordingly toxic to primitive marine organisms. Ecotoxicity (Cu2+): EC50 (Daphnia magna: 48 h): 9.8 - 41.2 ppb
Aquatic, comments	Chronic toxicity of copper ions from soluble copper compounds was assessed using 51 NOEC/EC10 values from 24 species representing different trophic levels (fish, invertebrates and algae). Species-specific NOECs were calculated after normalizing to dissolved organic carbon (DOC) and were used to derive SSDs and HC5 values. Normalisation at a typical DOC for coastal waters of 2 mg/l resulted in an HC5 of 5.2 µg dissolved Cu/L. Applying an assessment factor of 1, a default chronic marine PNEC of 5.2 µg dissolved Cu/L is assigned to assess local risks.

12.2. Persistence and degradability

Comments, Biodegradability	Copper is an element and not degrade.

12.3. Bioaccumulative potential

Bioaccumulative potential	The “bioaccumulative” criteria are not applicable to essential metals.

Comments, BCF	Copper-ions bind strongly to soil. The median water-soil partitioning coefficient (Kp) is 2120 L/kg.

12.4. Mobility in soil

Mobility	Copper salts will in general gradually release Cu++ ions in soil. The ions will strongly adhere to negatively charged clay minerals and soil oxides, and charged organic molecules. Some ions will also be absorbed as nutrient to biota. Following this the mobilty of copper ions is strongly restricted in soil.

12.5. Results of PBT and vPvB assessment

12.6. Other adverse effects

Other adverse effects / Remarks	Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system. Copper is a necessary trace element and stimulates plant growth and yield on copper deficient soil. Copper is an integral part of various oxidising enzymes, and several animal diseases may occur if the diet is deficient in copper. Cuprous oxide is an active ingredient in antifouling paints and accordingly toxic to primitive marine organisms. Ecotoxicity (Cu2+): EC50 (Daphnia magna: 48 h) : 9.8 -41.2 ppb

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Specify the appropriate methods of disposal	The product should be collected for recycling, or be disposed of in a place where copper is tolerated or needed. Leakage to water should be avoided. Comply with local legislation.

SECTION 14: Transport information

14.1. UN number

ADR	3077
RID	3077
IMDG	3077
ICAO/IATA	3077

14.2. UN proper shipping name

ADR	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
RID	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
IMDG	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
ICAO/IATA	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.

14.3. Transport hazard class(es)

ADR	9
Hazard no.	90
RID	9
IMDG	9
ICAO/IATA	9

14.4. Packing group

ADR	III
RID	III
IMDG	III
ICAO/IATA	III

14.5. Environmental hazards

IMDG Marine pollutant	Yes

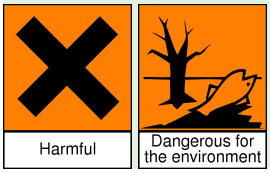
14.6. Special precautions for user

EmS	F-A, S-F

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

SECTION 15: Regulatory information

Hazard symbol



R-phrases	R22 Harmful if swallowed.
S-phrases	S22 Do not breathe dust.
EC no.	215-270-7

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Legislation and regulations	National regulations : There are no additional National Regulations required/available.

15.2. Chemical safety assessment

SECTION 16: Other information

Supplier's notes	This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.
Classification according to Regulation (EC) No 1272/2008 [CLP/GHS]	Acute tox. 4; H302; On basis of test data Aquatic Acute 1; H400; On basis of test data Aquatic Chronic 1; H410; On basis of test data
List of relevant R-phrases (under headings 2 and 3).	R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. R22 Harmful if swallowed.
List of relevant H-phrases (Section 2 and 3).	H302 Harmful if swallowed. H410 Very toxic to aquatic life with long lasting effects. H400 Very toxic to aquatic life.
Version	1
Responsible for safety data sheet	NORDOX AS