

SAFETY DATA SHEET

NoroTec AB

Date of Issue: May 28, 2020

Version no: 6.0

Replaces: February 18, 2016

NoroTec™ Copper

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

1.1 Product identifier

PRODUCT NAME:	NoroTec™ Copper
Group Name	Fertilisers based on copper.

1.2 Relevant identified uses of the substance or preparation and uses advised against

Use of the product	Fertilizers against copper deficiency in agricultural crops and seed treatment.
Limited conditions of use	Not applicable

1.3 Details of the supplier of the safety data sheet

Company	NoroTec AB
Address	Södergatan 74
Zip Code / City or Town	SE-274 34 Skurup
Country	Sweden
E-mail	mail@norotec.se
Telephone	+46 411 406 60
Contact person	Bo Isacson

1.4 Emergency telephone number

Emergency telephone number	Call 112 – ask for Poisson Information Centre.
-----------------------------------	--

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or preparation

Product definition: Mixture

Classification according to (EG) 1272/2008

Acute Tox. 4; H302

Skin Irr. 2; H315

Eye Irr. 2; H319

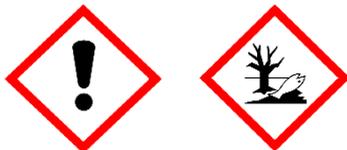
Aquatic Acute 1; H400

Aquatic Chronic 1; H410

2.2 Label Information

Label elements according to (EG) 1272/2008

Labelling required.



Signal Word: Warning

Hazard Statement

H302	Harmful if swallowed.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H410	Very toxic to aquatic life with long lasting effects.

SAFETY DATA SHEET

NoroTec AB

Date of Issue: May 28, 2020

Version no: 6.0

Replaces: February 18, 2016

NoroTec™ Copper

Precautionary statements

P280	Wear protective gloves/protective clothing/eye protection/face protection
P302+P352	IF ON SKIN: Wash with plenty of soap and water.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P314	Get medical advice/attention if you feel unwell
P273	Avoid release to the environment
P391	Collect spillage.
P501	Dispose of contents/container to a licensed hazardous waste disposal contractor.

Contains

Copper sulphate	10-25 weight-%
Copper nitrate	5-15 weight-%

2.3 Other hazards

PBT / vPvB	The product contains no PBT or vPvB substances.
Other hazards which do not cause classification	Not applicable.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substance (UVCB)

No	Component/ ingredient name	EC-number	CAS- number	REACH registration number	Conc. (weight-%)	Classification CLP]
1	Copper sulphate	231-847-6	7758-98-7	01-2119520566-40-0000	10-25	Acute Tox. 4; H302 Skin Irrit. 2; H315 Eye Dam. 2; H319 Aquatic Chronic 1; H410
2	Copper nitrate	221-838-5	3251-23-8	2119969290-34-0000	5-15	Acute Tox. 4; H302 Aquatic Chronic 1; H410
3	Citric acid	201-069-1	77-92-9	01-2119457026-42-0000	2-4	Eye Irrit. 2; H319
4	Urea	200-315-5	57-13-6	01-2119463277-33-0000	5 - 10	Not classified as dangerous
5	Water	231-791-2	7732-18-5	--	40-65	Not classified as dangerous

Occupational exposure limits are mentioned under section 8, if such exist. See section 16 for the full text of the hazard statements declared above.

4. FIRST AID

4.1 Description of first aid measures

Inhalation	Rest in fresh air.
Skin contact	Remove contaminated clothing. Wash skin thoroughly with soap and water. Consult a physician if irritation persists.
Eye contact	Hold eyelids apart. Rinse with water for 10 minutes. Consult a physician if irritation persists.
Ingestion	Rinse mouth with water. Drink a few glasses of water or milk. Consult a physician if pain or other symptoms persist in the mouth, throat or gastrointestinal tract.

4.2 Most important symptoms and effects, both acute and delayed

Inhalation	Inhalation of spray mist can cause burning in the mouth and throat, and cough. The product can irritate the mucous membranes in the respiratory system. Inhalation of
-------------------	---

SAFETY DATA SHEET

NoroTec AB

Date of Issue: May 28, 2020

Version no: 6.0

Replaces: February 18, 2016

NoroTec™ Copper

	high concentrations can lead to fever and flu-like symptoms after a few hours (metal fever).
Skin contact	Irritating to the skin. Repeated exposure causes dry skin, irritation, redness and cracking.
Eye contact	Causes serious eye irritation. Splashes may cause reversible irritation of the eye including burning and redness.
Ingestion	Ingestion may cause burning pain in the mouth, throat and gastrointestinal tract and cause vomiting, diarrhea and reduced general condition.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician	Treat symptomatically.
Specific treatments	No specific treatment.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

General information	Non-flammable product.
5.1.1 Suitable extinguishing media	The product is not flammable. Choose extinguishing agents based on the surrounding fire
5.1.2 Unsuitable extinguishing media	None

5.2 Special hazards arising from the substance or preparation

Hazards from the substance or preparation	No fire or explosion risk exists.
Hazardous thermal decomposition products	Oxides of carbon, nitrogen and sulfur.

5.3 Advice to firefighters

5.3.1. Special protective actions for fire-fighters	Avoid inhalation of toxic fumes.
5.3.2 Special protective equipment for fire-fighters	Fire-fighters should use chemically protective clothing and self-contained breathing apparatus.
5.3.3 Further information	If possible, move the product from the fire area. Otherwise cool containers exposed to flames with water until fire is out. Do not allow run-off from firefighting to enter drains or water courses

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear appropriate personal protective equipment. Avoid contact with eyes and skin.
For information on personal equipment, see section 8.

6.2 Environmental precautions

Avoid dispersal of spilt material in waterways and sewers or contaminate of soil and vegetation. If this is not possible immediately contact the police and relevant authorities.

6.3 Methods and materials for containment and cleaning up

Dike spills using vermiculite, sand or other inert absorbent material and place in sealable containers.
Clean up area with detergent and water subsequently. Collected material should be disposed of as hazardous waste.

SAFETY DATA SHEET

NoroTec AB

Date of Issue: May 28, 2020

Version no: 6.0

Replaces: February 18, 2016

NoroTec™ Copper

6.4 Reference to other sections

See section 8 for personal protective equipment.

See section 13 for handling of waste materials.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Handling	Avoid contact with skin and eyes. Avoid breathing vapours/spray mist. Do not eat or drink while handling the product. See Section 8 for personal protective equipment.
-----------------	--

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions	Store in tightly closed original packaging. Keep dry and cool in a well ventilated place.
Conditions to avoid	Protected against frost. Avoid direct sunlight.

7.3 Special characteristics and risks

Conditions to avoid	Keep away from strong alkaline solution and strong oxidizing agents.
----------------------------	--

7.4 Specific end use(s)

Specific use (s)	Not relevant.
-------------------------	---------------

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Occupational Exposure Limit:

Substance	CAS no.	Range	ppm	mg/m ³	Country	Remarks
Copper sulphate (as copper)	7440-50-8	8 h	--	1,0	UK	dm
Copper nitrate (as copper)	7440-50-8	8 h	--	1,0	UK	dm

dm = As dusts and mists.

8.2 Exposure Control

Avoid contact with skin and eyes. Do not eat, drink or smoke while working. Avoid breathing vapours/spray mist.

8.2.1 Appropriate technical controls

Not relevant for this product.

8.2.2 Individual protective measures, e.g. protective personal equipment.

8.2.2.1 Respiratory protection	At risk of inhalation of spray mist use respiratory equipment (half mask with particle filter P2).
8.2.2.2 Eye/face protection	Wear tight-fitting goggles or face shield.
8.2.2.3 Hand protection	Use protective gloves made of neoprene or nitrile rubber.
8.2.2.4 Body protection	Wear appropriate protective clothing.
8.2.2.5 Thermal hazards	The product does not constitute a thermal hazard. No special measures required.
8.2.2.6 Other information	Portable eye wash equipment should be available.

8.2.2 Environmental exposure controls

Avoid release to the environment.

SAFETY DATA SHEET

NoroTec AB

Date of Issue: May 28, 2020

Version no: 6.0

Replaces: February 18, 2016

NoroTec™ Copper

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical state	Liquid
Colour	Blue-green
Odour	Almost odourless
Odour threshold	Not available
Solubility	Soluble in water at 20 °C
pH (product)	About 1.9
Melting point /freezing point	0 °C
Initial boiling point and boiling range	100 °C
Flash point	Not applicable, product is not combustible
Evaporation rate	As water
Flammable (solid, gas)	Non-combustible
Burning time	Not applicable
Burning rate	Not applicable
Upper / lower flammability or explosive limits	Not explosive
Steam pressure	As water
Vapour	As water
Relative density	Approximately 1.23 g /cm ³ at 20 °C
Octanol / water	Not applicable
Ignition temperature	Not applicable, product is not combustible
Decomposition Temperature	Not applicable, product is not combustible
Oxidising properties	Non-oxidising

9.2 Other information

None

10. STABILITY AND REACTIVITY

10.1 Reactivity	Non-reactive.
10.2 Chemical stability	Chemically stable under normal conditions of use and storage.
10.3 Possibility of hazardous reactions	Inapplicable in normal conditions of storage and use.
10.4 Conditions to avoid	Strong heat. Direct sunlight. Protect from frost.
10.5 Incompatible materials	Strong alkaline solutions and strong oxidizing agents.
10.6 Hazardous decomposition products	Thermal decomposition results in the formation of oxides of carbon, nitrogen and sulfur.

11. TOXICOLOGICAL INFORMATION

Information on toxicological effects

11.1. Acute toxicity

Not harmful by skin contact. Not harmful if inhaled. Harmful if swallowed.

Acute toxicity of copper sulphate

Exposure route	Value/Unit	Species	Exp. time	Method/note
LD50, oral	369 mg/kg	rat	--	--

SAFETY DATA SHEET

NoroTec AB

Date of Issue: May 28, 2020

Version no: 6.0

Replaces: February 18, 2016

NoroTec™ Copper

Acute toxicity of copper nitrate

Exposure route	Value/Unit	Species	Exp. time	Method/note
LD50, oral	950 mg/kg	rat	--	--

Irritation/Corrosion

Assessment of skin corrosion/irritation, classification:

Irritating to skin.

Assessment of eye damage or irritation, classification:

Causes serious eye irritation.

11.2 Potential acute effects

Inhalation	Inhalation of spray mist can cause burning in the mouth and throat, and cough. The product can irritate the mucous membranes in the respiratory system. Inhalation of high concentrations can lead to fever and flu-like symptoms after a few hours (metal fever).
Skin contact	Repeated exposure gives rise to dry skin, irritation, redness and cracks.
Eye contact	Causes serious eye irritation. Splashes may cause reversible irritation, including burning and redness.
Ingestion	Ingestion may cause burning pain in the mouth, throat and gastrointestinal tract and cause vomiting, diarrhea and reduced general condition.

11.3 Sensitization by inhalation/skin contact

Assessment of sensibility for the product:

The product does not contain any sensitizing agents.

11.4.1 Germ cell mutagenicity

Assessment of mutagenicity for the product:

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

11.4.2 Carcinogenicity

Assessment of carcinogenicity for the product:

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

11.4.3 Reproduction toxicity

Assessment of reproduction toxicity for the product:

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

11.5.1 Specific target organ toxicity (single exposure)

STOT assessment single dose toxicity:

Shall not be classified as a specific target organ toxicant (single exposure).

However, the product may irritate the mucous membranes in the respiratory system. Inhalation of high concentrations can lead to fever and flu-like symptoms after a few hours (metal fever).

11.5.2 Repeated dose toxicity and specific organ toxicity (repeated exposure)

STOT assessment of repeated dose toxicity:

Shall not be classified as a specific target organ toxicant (repeated exposure).

11.6 Aspiration

Shall not be classified as presenting an aspiration hazard.

SAFETY DATA SHEET

NoroTec AB

Date of Issue: May 28, 2020

Version no: 6.0

Replaces: February 18, 2016

NoroTec™ Copper

12. ECOLOGICAL INFORMATION

12.1. 1 Toxicity

Acute aquatic toxicity of copper sulphate

Test	Value / unit	Test Method	Exp. time	Species
Fish LC50	0,1 mg/l	ECOTOX Database	96 h	Rainbow trout
Daphnia EC50	0,024 mg/l	ECOTOX Database	48 h	Daphnia magna

Acute aquatic toxicity of copper nitrate

Test	Value / unit	Test Method	Exp. time	Species
Fish C50	0,2 mg/l	IFA GESTIS	96 h	Zebra danio
Daphnia EC50	0,07 mg/l	IFA GESTIS	48 h	Daphnia magna
IC50	0,085 mg/l	--	14 days	Green algae

Ecological toxicity

The product is very toxic to aquatic organisms.

12.2 Persistence and degradability

Conclusion/Summary	The product contains the elements copper and sulphur. Elements are by definition not biodegradable.
---------------------------	---

12.3 Bioaccumulative potential

Conclusion/Summary	Bioaccumulation of copper can be expected
---------------------------	---

12.4 Mobility in soil

The product is mobile in the soil profile due to its high water solubility.

Adsorption to solid soil particles is not expected.

12.5 Results of PBT and vPvB assessment

The product contains no substances which are identified as a PBT or vBvP substance (substance that is persistent, bioaccumulative and toxic).

12.6 Other adverse effects

None known

12.7 Environmental information/conclusion

The mixture in concentrated form is classified as very toxic to aquatic life with long lasting effects.

Solution ready for use that is spread on arable land is not considered dangerous for the environment.

However, avoid spreading near lakes and rivers.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product

Method of disposal	Residues and waste are hazardous waste. Dispose of at an approved disposal facility.
Hazardous waste	Yes

Packaging

Method of disposal	Uncleaned empty packaging is hazardous waste. Dispose of at an approved disposal facility.
Hazardous waste	Yes
Special precautions	Not relevant

SAFETY DATA SHEET

NoroTec AB

Date of Issue: May 28, 2020

Version no: 6.0

Replaces: February 18, 2016

NoroTec™ Copper

European Waste Catalogue (EWC)

EWC Waste Code	Type of waste
02 01 08*	Agrochemical waste containing dangerous substances
15 01 10*	Packaging containing residues of or contaminated by dangerous substances

14. TRANSPORT INFORMATION

This product is classified as dangerous goods.

UN-no:	3082
Proper Shipping Name:	Environmentally hazardous substance, liquid n.o.s.(copper sulphate/copper nitrate)

ADR / RID (Road / Rail Transport)

Class:	9	Packing Group:	III
Label:	--	Environmental hazards:	Yes
Hazard number:	90	Tunnel restriction code:	E

IMDG (SEA)

Class:	9	Packing Group:	III
Label:	--	EmS:	F-A, S-F
Marine Pollutant:	Yes		

IATA (Air Transport)

Class:	9	Packing Group:	III
Label:	--	Environmental hazards:	Yes

14.7 Bulk transport in accordance with annex II of convention Marpol 73/78 and IBC-Code

Not applicable

15. REGULATORY INFORMATION

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

Classification and labelling according to (EG) 1272/2008 is available under section 2. This Safety Data Sheet is prepared in accordance with Annex II of the REACH Regulation (EC) 1907/2006 and Regulation (EC) No. 453/2010 Appendix I.

Authorisation	Not required.
Restriction in use	None.
Other EU legislation	This product contains no ozone depleting substance and no persistent organic pollutant.

15.2 Chemical Safety Assessment

Not relevant for products.

16. OTHER INFORMATION

THE PRODUCER'S NOTES

This safety data sheet is provided by MM-Support AB, Sweden, and approved by NoroTec AB, Sweden.

LIST OF HAZARD STATEMENTS MENTIONED UNDER SECTION 2 and 3

No.	Text
H302	Harmful if swallowed.
H315	Causes skin irritation.

SAFETY DATA SHEET

NoroTec AB

Date of Issue: May 28, 2020

Version no: 6.0

Replaces: February 18, 2016

NoroTec™ Copper

H319	Causes serious eye irritation.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

Revision overview

Version	Revision date	Responsible	Changes in section
v.2	March 20, 2009	Erland Jordow	--
v.3	February 2, 2010	Erland Jordow	--
v.4	March 12, 2013	Bo Isacsson	The entire safety data sheet has been updated to REACH II format
v.5	February 18, 2016	Bo Isacsson	2, 3, 4, 11, 13 and 15
v.6	May 28, 2020	Bo Isacsson	3, 7, 11 and 12