

SAFETY DATA SHEET
VitaFer N+ – Liquid Foliar Fertilizer

SECTION 1 IDENTIFICATION OF THE MIXTURE AND OF THE COMPANY

1.1 Product identifier	VitaFer N+
Substances decisive for the classification	Copper sulphate REACH: 01-2119520566-40-0004 CAS 7758-99-88
1.2 Relevant identified uses	Fertilizer for fertilizing farm plants, vegetables and orchard plants
1.2 Uses advised against	other than the ones mentioned above
1.3 Details of the supplier	VITAFER Sp. z o.o. Sp.k. Al. Krakowska 19 str., 05-555 Tarczyn
Responsible for the Safety Data Sheet	office@vitafer.pl
1.4 Emergency telephone number	112
Prepared on	01-01-2020 (version 01)

SECTION 2 HAZARDS IDENTIFICATION

Classification of the mixture

2.1. Classification according to Regulation (EC) 1272/2008 (See SECTION 16 for full text of the H phrases)

May damage fertility or the unborn child, cat. 1B – H360D

May cause cancer, cat. A – H350

Harmful to aquatic life with long lasting effects, cat. 3 – H412

2.2 Label elements in compliance with Regulation (EC) 1272/2008

Hazard pictograms:



Signal word: **Warning**

Hazard statements:

- H 350** May cause cancer.
H 360D May damage fertility or the unborn child.
H 412 Harmful to aquatic life with long lasting effects.

Precautionary statements:

- P 202** Do not handle until all safety precautions have been read and understood
P 273 Avoid release to the environment
P 281 Use personal protective equipment as required
P 308 + P 313 If exposed or concerned: Get medical advice/attention
P 405 Store locked up

P 501 Dispose of contents/container in accordance with the local regulations.

Additional information on hazards (EU):

EUH208 Contains (copper sulphate). May produce an allergic reaction.

2.3 Other hazards

For professional users.

"EC Fertilizer" "Type C 1.1. A solution of a nitrogen fertilizer with an addition of magnesium oxide (MgO), with micronutrients: boron (B), copper (Cu), iron (Fe), manganese (Mn), molybdenum (Mo) and zinc (Zn)"
PBT and vPvB criteria: The criteria for the identification of PBT and vPvB properties according to Annex XIII of REACH do not apply to inorganic substances.

SECTION 3 COMPOSITION/INFORMATION ON INGREDIENTS

A mixture of urea, ammonium nitrate, copper sulphate and manganese chloride.

Dangerous components:

Name of the substance	Index number	CE number	CAS number	Concentration	EC No. 1272/2008 classification
Urea	01-2119463277-33-0025	200-315-5	57-13-6	10-20%	-
Ammonium nitrate	01-2119490981-27-0025	229-347-8	6484-52-2	15-20%	H272; H319
Copper sulphate	01-2119520566-40-0004	231-847-6	7758-99-8	0.18 – 0.21%	H350; H360D H302; H318 H317; H373 H400; H410
Manganese chloride	-	231-869-6	13446-34-9	1 - < 4%	H302; H411

(See SECTION 16 for full text of the H phrases)

SECTION 4 FIRST AID MEASURES

4.1 Description of first aid measures

General remarks – Remove contaminated clothing and shoes. In the event of exposure or contact: consult/visit a doctor. Show the container or label.

Inhalation – Remove from the area of exposure to fresh air. In the event of breathing problems, seek medical attention.

Skin contact – Remove contaminated clothing, wash skin with a lot of water. If skin is irritated, consult a dermatologist.

Eye contact – Irrigate copiously with water for at least 15 minutes, holding the eyelids apart. Remove contact lenses. Avoid strong water jet due to risk of damage to cornea. Seek medical advice.

Ingestion – Paramedic care typical in cases acute poisoning is gastric lavage. Do not induce vomiting as it may lead to aspiration and chemical pneumonia. Call the doctor or seek medical attention. Do not give any medicines to the unconscious person.

Personal protective equipment for a paramedic – not specified.

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

Eyes: may cause pain, irritation, reddening, stinging and epiphora.

Skin: may cause reddening, irritation and pain.

Inhalation: breathlessness and strong cough. Problems with breathing.

Ingestion: pain in mouth and oesophagus, pain and strong irritation of mucous membranes of the alimentary canal, vomiting, diarrhoea.

4.3 Indication of immediate medical attention and special treatment needed

A decision on further treatment should be taken by a doctor after examining the person affected.

SECTION 5 FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media: the product is non-flammable. Use extinguishing media suited to the materials stored in the immediate vicinity.

Extinguishing media not to be used: not specified

5.2 Special hazards arising from the mixture

During fire dangerous smoke and vapours containing sulphur compounds and nitrogen oxides may be produced.

5.3 Advice for fire-fighters

Do not stay in the danger zone without appropriate chemical protective clothing and a self-contained breathing apparatus.

SECTION 6 ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

- Protective equipment – for personal protective equipment see section 8 – prevention of skin and eye contamination.
- Emergency procedures – not specified

For emergency responders: not specified

6.2 Environmental precautions

Do not allow large quantities of the substance enter the sewerage system and water reservoirs. Prevent further spreading.

6.3 Methods and materials for containment and cleaning up

The released product must be put in a waste container (use industrial vacuum cleaners or wash the product off to avoid the generation of dust). Dispose of in accordance with the applicable regulations.

6.4 Reference to other sections.

Section 8.

SECTION 7 HANDLING AND STORAGE

7.1 Precautions for safe handling

- Fire precautions: the product is non-flammable
- Precautions against the generation of aerosols – avoid the inhalation of the dust, skin and eye contamination.
- Environment protection measures – the product must be used in accordance with the manufacturer's instructions (appropriate thinning)

Follow the occupational health and safety regulations. Use as intended and in accordance with the manufacturer's instructions. Follow hygiene procedures and use protective equipment (see section 8).

Do not eat, drink or smoke while using the product. Wash hands after the use.

7.2 Conditions for safe storage, including any incompatibilities

Store in the original, closed and appropriately marked containers. Avoid exposure to high temperatures (the optimum temperature is 25°C) and direct sunlight. Store in a cool, dry and well ventilated place. Secure the containers against physical damage.

Incompatible materials – no data available

Warehouse class – not specified

7.3 Specific end use(s)

No additional instructions.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Permissible national occupational exposure limits

Copper sulphate:	TLV-TWA	0.2 mg/m ³	TLV-STEL	no data available
Manganese chloride:	TLV-TWA	0.3 mg/m ³	TLV-STEL	no data available

(Manganese and its inorganic compounds – converted into Mn)

Legal basis: The decree of the Minister of Labour and Social Policy of 29.11.2002 on maximum allowable concentrations and threshold limit values of agents with adverse health effects in workplace (Journal of Laws No. 217 item 1833).

Monitoring methods:

- PN-EN 14042 Workplace atmospheres. The guide for the application and use of procedures for the assessment of exposure to chemical and biological agents.
- Recommended monitoring procedures are specified in the Polish norms on air protection.

DNEL values:

Workers

Ammonium nitrate

Long-term systemic effects; skin 21.3 mg/kg bw/day

Long-term systemic effects; inhalation 37.6 mg/m³

Urea

Acute systemic effects; skin 580 mg/kg bw/day

Acute systemic effects; inhalation 292 mg/m³
 Long-term systemic effects; skin 580 mg/kg bw/day
 Long-term systemic effects; inhalation 292 mg/m³
 Copper sulphate
 DNEL (oral; short-term exposure) – 0.082 mg/kg bw/day
 Long-term systemic effects; inhalation 0.041 mg/m³

PNEC values

Ammonium nitrate: Fresh water – 0.45 mg/l
 Sea water – 0.045 mg/l
 Sporadic release – 4.5 mg/l
 Water treatment plants – 18 mg/l
 Urea: Fresh water – 0.047 mg/l
 Copper sulphate: Ground water – 7.8 µg/l
 Sea water – 5.2 µg/l
 Fresh water sediment – 87 mg/kg dw
 Sea water sediment – 676 mg/kg dw
 Soil – 65.5 mg/kg dw

8.2 Exposure controls

Appropriate engineering controls

Provide general ventilation and local exhaust ventilation. Do not smoke in the workplace. Do not eat and drink while handling the product. Wash hands carefully with soap and water after finishing work, after a break, before eating, smoking, using the toilet.

Individual protection measures:

- Eye and face protection – protective goggles with side protection in accordance with PN – EN 166
- Hand protection – protective gloves tested and chosen based on the standards PN-EN 374-2 and 374-3/
- Respiratory protection – AP filters required when vapours/aerosols are generated
- Skin protection – protective clothing
- Thermal hazards: N/A
- Environmental exposure controls – do not allow the product to enter the sewerage system. Prevent further spreading if it is safe.

8.3 Environmental exposure controls

Before the product is used, assess the occupational risk and take appropriate preventive measures.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties	Test method
Appearance	Clear green solution Organoleptic
Odor	Typical Organoleptic
Odor threshold	N/A
pH of 1% solution	5.5 – 6.5 No data available
Melting/freezing point	No data available
Boiling point and boiling range	No data available
Flash point	No data available
Evaporation rate	No data available
Flammability (solid, gas)	N/A
Upper/lower flammability limit	N/A
Upper/lower explosive limit	N/A
Vapour pressure	No data available
Vapour density	No data available
Relative density	1.34 kg/l No data available
Water solubility	Soluble in water
Partition coefficient n-octanol/water	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Explosive properties	No data available
Oxidizing properties	No data available

9.2 Other information none

SECTION 10 STABILITY AND REACTIVITY

10.1. Reactivity

Non-reactive while stored, used and applied under normal conditions.

10.2. Chemical stability

The product is stable under recommended use and storage conditions.

10.3. Possibility of hazardous reactions

An exothermic reaction may be triggered in contact with bases. During fire dangerous smoke and vapours containing sulphur compounds and nitrogen oxides may be produced.

10.4. Conditions to avoid

Keep away from high temperature and direct sunlight. Avoid changes in temperature. Do not allow the temperature to drop below 5°C.

10.5. Incompatible materials No data available

No data available.

10.6. Hazardous decomposition products

Vapours of sulphur compounds (SO_x), nitrogen oxides.

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects of the mixture

Acute toxicity: no data on the mixture available

Skin irritation/corrosion: no data on the mixture available

Eye irritation/damage: no data on the mixture available

Respiratory or skin sensitisation: no data on the mixture available

Mutagenicity: no data on the mixture available

Carcinogenicity: Carcinogenicity, Category 1A: May cause cancer.

Reproductive toxicity: May damage fertility or the unborn child cat. 1B

Specific target organ toxicity – single exposure: no data on the mixture available

Specific target organ toxicity – repeated exposure: no data on the mixture available

Aspiration risk: no data on the mixture available

Data on the components – acute toxicity

Ammonium nitrate:

LD50 (oral, rat) 2950 mg/kg

LD50 (skin rat) 5000 mg/kg

Manganese chloride:

LD50 (oral, rat) 1484 mg/kg

Information on the probable ways of exposure

Skin – possible sensitisation

Symptoms related to physical, chemical and toxicological properties

No data available

Delayed, direct or chronic effects of short-term and long-term exposure

Skin –sensitisation

Interaction effects

No data available

SECTION 12 ECOLOGICAL INFORMATION

12.1 Toxicity of the mixture:

Acute toxicity (short-term):

Fish - no data available

Crustaceans - no data available

Algae/aquatic plants - no data available

Other organisms - no data available

Chronic toxicity

Fish - no data available

Crustaceans - no data available

Algae/aquatic plants - no data available

Other organisms - no data available

Data for the components:

Ammonium nitrate

Fresh water fish – LC(48 h): 447 mg/l

Invertebrates – EC50(48 h): 447 mg/l

Copper sulphate

Acute toxicity (LC50/96 h) for fish \leq 1 mg/l – very toxic for aquatic organisms.

IC50/72 h (half maximal concentration inhibiting growth) for algae < 1 mg/l

Acute toxicity for aquatic environment, Category 1: Very toxic for aquatic organisms.

M coefficient for acute toxicity

Manganese chloride – information on manganese ions:

Toxic for aquatic organisms.

Toxicity threshold for tubifex (*policelis nigra*) 660 mg/l.

CE0 (microegma) 31 mg/l.

Toxicity for fish: CL0 (orfe) 2490 mg/l.

Trout 2.91 mg/l (28 days)

Toxicity for daphnia: CL0 (*daphnia magna*) 50 mg/l.

Acute toxicity: *Pseudomonas putida* 10.6 mg/l.

Photobacterium phosphoreum 14.7 mg/l.

In running water, depending on the mixture, the toxicity is moderate to high.

12.2. Persistence and degradability – no data on the mixture available.

Abiotic degradation – no data available

Physical and photochemical elimination – no data available

Biodegradation – no data available

Components – copper sulphate is not biodegradable.

12.3 Bioaccumulative potential – no data on the mixture available.

Partition coefficient n-octanol/water (log Kow) – no data available

Bioconcentration factor (BCF) – no data available

Components:

Copper sulphate – the value of the bioconcentration factor for copper sulphate determined in the tests is higher than 100, which suggests substantial bioaccumulation.

12.4 Mobility in soil – no data on the mixture available.

12.5 Results of PBT and vPvB assessment – no data on the mixture available.

12.6. Other adverse effects – no data on the mixture available.

Components:

High concentration of nitrates in water accelerates the growth of algae and a decreased amount of oxygen in water (eutrophication).

Copper sulphate – It is very toxic to aquatic organisms; it may have long lasting effects in the aquatic environment.

SECTION 13 DISPOSAL CONSIDERATIONS

Waste treatment methods:

Empty, not cleaned container – recycling

Mixture – thin with water, it is not recommended to drain the product that is not thinned.

Sorbent with the mixture – consult an expert

Waste catalogue no.:

02 01 08* - Agrochemical waste containing dangerous substances, including pesticides of I and II toxicity class (very toxic and toxic)

15 01 10* - Packaging containing residues of or contaminated by dangerous substances.

Recycling waste – key information – no data available

Sewage disposal – key information – no data available

Other instructions on waste treatment

The containers must be well emptied and then disposed of in accordance with the applicable regulations.

The waste must be treated appropriately, in consideration of the regional, national and European regulations as well as in consideration of the local conditions, by the entity whose business is waste treatment. The regulations of the Waste Act of 14 December 2012 (Journal of Laws 2013, item 21) must be applied accordingly. The regulations of the act of 13 June 2013 on packaging and packaging waste management (Journal of Laws 2013, item 888) must be applied accordingly.

SECTION 14 TRANSPORT INFORMATION

The product is not classified as hazardous in transport.

SECTION 15 REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture Special legal regulations referring to this mixture

Directive 96/82/EC and the decree of the Minister of Economy on the types and amount of dangerous substances whose presence in a facility make it a high risk facility or a facility with a high risk of a serious industrial emergency, dated 10 October 2013 (Journal of Laws 2013, item 1479).

The mixture is not mentioned in an annex to this decree.

EU regulations

1. Regulation (EC) No. 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No. 793/93 and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EEC AND 2000/21/EC. (Revision of the Regulation L136/3 of 29-05-2007)
2. Regulation EC No. 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006
3. Commission Regulation (EU) No. 453/2010 of 20 May 2010 amending Regulation (EC) No. 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)
4. Regulation (EC) No. 2003/2003 of the European Parliament and of the Council of 13 October 2003 relating to fertilizers

National regulations:

5. Act of 25 February 2011 on chemical substances and their mixtures (Journal of Laws 2011, No. 63, item 322 as amended)
6. Act of 27 April 2011 – Environmental Protection Law - (uniform text, Journal of Laws 2013, No. 0, item 1232 as amended)
7. Decree of the Minister of Health, dated 20 April 2012, on the labelling of the packaging of dangerous substances and dangerous mixtures and some other mixtures (Journal of Laws 2012, No. 0, item 445 as amended)
8. Decree of the Minister of Health, dated 10 August 2012, on the criteria and method of the classification of chemical substances and their mixtures (Journal of Laws 2012, No. 0, item 1018 as amended)
9. Government order, dated 24 August 2004, on the list of works that the juveniles are not allowed to perform and the conditions in which they can perform those works (Journal of Laws 2004, No. 200, item 2047 as amended)
10. Government order, dated 10 September 1996, on the list of works that women are not allowed to perform (Journal of Laws 1996, No. 114, item 545 as amended)
11. Government announcement, dated 28 May 2013, on the amendments to the Annexes A and B to the European Agreement concerning the International Carriage of Dangerous Goods by Road ADR, concluded in Geneva on 30 September 1957, becoming effective (Journal of Laws 2013_0_815)
12. Act of 10 July 2007 on fertilizers and fertilization and its later amendments
13. Waste Act of 14 December 2012 (Journal of Laws 2012.21 as amended)
14. Decree of the Minister of Labour and Social Policy, dated 29 November 2002, on maximum allowable concentrations and threshold limit values of agents with adverse health effects in workplace (Journal of Laws.02.217.1833 as amended)

15.2 Chemical safety assessment

The manufacturer has not performed a chemical safety assessment of the mixture.

SECTION 16 OTHER INFORMATION

List of amendments: N/A

Abbreviations and acronyms:

ADR: European Agreement concerning the International Carriage of Dangerous Goods by ROAD

RID: Regulations Concerning the International Transport of Dangerous Goods by Rail

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

IATA-DGR: Dangerous Goods Regulations by IATA

ICAO: International Civil Aviation Organization

ICAO-TI: Technical Instructions by ICAO

IBC: International Bulk Chemical Code

DNEL: Derived No Effect Level

PNEC: Predicted No Effect Concentration

SVHC: Substance of Very High Concern

TLV-TWA: Threshold limit value - time-weighted average

TLV-STEL: Threshold limit value - short-time exposure limit

PBT: Persistent bioaccumulative toxic chemical

vPvB: very persistent and very bioaccumulative

LD50: Median lethal dose

LC50: Lethal concentration

EC50: Median effective concentration

NOEC: No observable effect concentration

Classification according to Regulation (EC) 1272/2008

May damage fertility or the unborn child cat. 1B – H360D – calculation method

May cause cancer cat. A – H350 – calculation method

Harmful to aquatic life with long lasting effects cat. 3 – H412 – calculation method

Full text of H referring to Section 2 and 3

H 272	May intensify fire; oxidizer
H 302	Harmful if swallowed
H 317	May cause an allergic skin reaction
H 318	Causes serious eye damage
H 319	Causes serious eye irritation
H 350	May cause cancer.
H 360D	May damage fertility or the unborn child.
H 373	May cause damage to organs through prolonged or repeated exposure
H 400	Very toxic to aquatic life
H 410	Very toxic to aquatic life with long lasting effects
H 411	Toxic to aquatic life with long lasting effects
H 412	Harmful to aquatic life with long lasting effects.

Recommended training:

- On-the-job training
- Training on the hazards related to the mixture and the preventive measures in the occupational hazard assessment
- Training on actions to be taken in the event of a release of the substance
- Training on the use of the fertilizer

Other information

The information above has been prepared based on our current knowledge and describe the product in terms of environmental protection and safe use. The information is no guarantee of the product quality or a quality specification of the product and no complaints can be based on the information.