

SAFETY DATA SHEET
VitaFer Algi – Suspension Foliar Fertilizer

SECTION 1 IDENTIFICATION OF THE MIXTURE AND OF THE COMPANY

1.1 Product identifier	VitaFer Algi
Substances decisive for the classification	Boric acid REACH: 01-2119486683-25-0006
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. Aleja Krakowska 19, 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

2.1.1 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 – H360FD
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: **Danger**

Hazard statements:

H 360FD May damage fertility or the unborn child.
H 412 Harmful to aquatic life with long lasting effects.

Precautionary statements:

P 201 Obtain special instructions before use
P 202 Do not handle until all safety precautions have been read and understood
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.

2.3 Other hazards

“EC Fertilizer”

“Type E 2.4.1. A mixture of micronutrients: boron (B), manganese (Mn), and zinc (Zn)”.
For professional use only.

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 boric acid, manganese sulphate and zinc sulphate.

Dangerous components:

Name of the substance	Index number	CE number	CAS number	Concentration	EC No. 1272/2008 classification
Boric acid *	01-2119486683-25-0006	233-139-2	10043-35-5	15 - 20%	H360FD
Manganese sulphate	01-2119456624-35-XXXX	232-086-9	10034-96-5	>2 –<3%	H318; H373 H411
Zinc sulphate	01-2119474684-27-0021	231-793-3	7446-19-7	>1 - 1.5%	H 302; H 318 H 400; H 410

*Specific concentrations:

Boric acid: Repr. 1B C \geq 5.5 %
(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 and wash before using again.

Inhalation – Remove from the area of exposure to fresh air.

Skin contact – Wash contaminated skin with a lot of cold water.

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 immediately.

Ingestion – Do not give any medicines to the unconscious person. A conscious person may drink 2 glasses of water. Seek medical attention and present the label of the product or the safety data sheet

Personal protective equipment for a paramedic – not specified.

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

Eyes: no data available

Skin: no data available.

Inhalation: no data available

Ingestion: no data available

4.3 Indication of immediate medical attention and special treatment needed

Hand the doctor the safety data sheet of the mixture. If more than 6 g of boric acid are consumed, the correct functioning of kidneys must be monitored and provide liquids.

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 nitrogen and sulphur 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 sprinkle with a sorbent). Dispose of selectively 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 – appropriate general and local ventilation must be used

Environment protection measures – the product must be used in accordance with the manufacturer's instructions (appropriate dilution)

Follow the occupational health and safety regulations and use protective equipment (see section 8). Avoid contamination of eyes and skin.

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. The warehouse should be locked and inaccessible for unauthorised persons. Avoid exposure to high temperatures and direct sunlight.

The appropriate range of storage temperature is +5°C to +30°C (the optimum temperature is 25°C). Store in a dry and well ventilated place. Secure the containers against physical damage.

Incompatible materials – oxidisers

7.3 Specific end use(s)

No additional instructions.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Permissible national occupational exposure limits

Manganese sulphate monohydrate: CAS no.: 10034-96-5

Normative: TLV-TWA 0.3 mg/m³ (expressed in Mn); TLV-STEL – not determined, TLV-CL not determined

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.

DNEL values:

Boric acid:

Exposure	Value	Population	Consequences
Inhalation	8.3 mg/m ³	Workers	Long-term effect
Skin	3924800 mg/day	Workers	Long-term effect
Oral	0.98 mg/kg bw/day	Society	Acute effect
Skin (outside)	196 mg/kg bw/day	Society	Long-term effect
Skin (general)	0.98 mg/kg bw/day	Society	Long-term effect
Inhalation	4.15 mg/m ³	Society	Long-term effect
Oral	0.98 mg/kg bw/day	Society	Long-term
Manganese sulphate monohydrate			
Skin	0.00414 mg/day bw/day	Workers	Long-term systemic effects
Inhalation	0.2 mg/m ³	Workers	Long-term systemic effects
Oral	omitted	Workers	Long-term systemic effects
Skin (general)	0.0021 mg/kg bw/day	Society	Long-term systemic effects
Inhalation	0.043 mg/m ³	Society	Long-term systemic effects
Oral	omitted	Society	Long-term systemic effects

PNEC values

Boric acid:

Surface water – 1.35 mg B/l

Sea water – 1.35 mg B/l

Fresh water sediment – 1.8 mg B/kg dw

Sea water sediment – 676 mg/kg dw

Sum, periodic water reservoirs – 9.1 mg B/l

Sum, water treatment plant – 1.75 mg B/l

Manganese sulphate monohydrate:

Water (fresh water) – 0.0128 mg/l

Water (sea water) – 0.0004 mg/l

Water (sporadic releases) – 0.03 mg/l

Sediment (fresh water) – 0.0114 mg/kg sediment

Sediment (sea water) – 0.00114 mg/kg sediment

Water treatment plant – 56 mg/l

Soil – 25.1 mg/kg soil

Zinc sulphate

Water (fresh water) – 20.6 mg/l

Water (sea water) – 6.1 mg/l

Sediment (fresh water) – 117.8 mg/kg sediment

Sediment (sea water) – 56.5 mg/kg sediment

Soil – 35.6 mg/kg soil

8.2 Exposure controls

Appropriate engineering controls

If the user generates dust, gas, vapour or mist, use process barriers, local exhaust vents or other technical safety devices that help maintain the level of exposure under the statutory limits.

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,
- Respiratory protection – AP filters required when vapours/mists are generated
- Skin protection – protective clothing
- Environmental exposure controls – do not allow the product to enter the sewerage system.

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	Brown suspension	Organoleptic
Odour	Typical	Organoleptic
Odour threshold	N/A	
pH of 1% solution in 20°C	5.0 – 6.5	Potentiometer
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	1.23 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	
Viscosity	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

No data available.

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

It can cause corrosion of common metals.

10.6. Hazardous decomposition products

During fire or on heating it may produce nitrogen and sulphur 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: no data on the mixture available

Reproductive toxicity: no data on the mixture available

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

Information on boric acid:

Reproduction toxicity: May damage fertility or the unborn child, category 1B.

The tests on animals (rat, mouse, dog) fed with large quantities of boric acid revealed that it affects the fertility and the functioning of testicles. The tests carried out on rats, mice and rabbits revealed that large quantities of the substance may affect the development of the foetus, causing i.a. a decrease in body mass of the foetus and small skeletal deformation. The administered doses were several times larger than those which a human would be exposed to under normal conditions. The epidemiological tests among humans did not show an increase in the incidence of pulmonary diseases with people chronically exposed to dust of boric acid and sodium borate in their working environment. The latest epidemiological test carried out under normal exposure to borate dust in a working environment did not reveal any negative effect on fertility.

Aspiration risk: Low acute respiratory toxicity: LC50 in rats it is higher than 2.0 mg/l (or g/m³).

SECTION 12 ECOLOGICAL INFORMATION

12.1 Toxicity - for 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

12.2. Persistence and degradability – does not apply to inorganic substances.

Abiotic degradation – no data available

Physical and photochemical elimination – no data available

Biodegradation – no data available

12.3 Bioaccumulative potential – does not apply to inorganic substances.

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

Bioconcentration factor (BCF) – no data available

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.

Acute toxicity for: zinc sulphate monohydrate – Nr. CAS: 7446-19-7

Toxicity for fish: *Jordanella floridae* LC50: > 1.5 mg/l/96 h (anhydrous substance)

Toxicity for aquatic invertebrates: *Daphnia magna* EC50: 0.75 mg/l/48 h (anhydrous substance)

Toxicity for aquatic plants: *Ankistrodemus falcatus* EC50: 32 mg/l/4 h (anhydrous substance)

Toxicity for bacteria: *Eulenea* sp. NOEC50: ≥ 1.95 g/l/7 day (anhydrous substance)

M coefficient for acute toxicity = 1, M coefficient for chronic toxicity = 1

Acute toxicity for: manganese sulphate pentahydrate – Nr. CAS: 7758-99-8

Toxicity for fish: LC50 (96 h) = 30 mg/l Mn

LC50 (96 h) = 14.5 mg/l Mn

Toxicity for aquatic invertebrates: no data available

Toxicity for aquatic plants: no data available

Toxicity for bacteria: no data available

SECTION 13 DISPOSAL CONSIDERATIONS

Waste treatment methods:

Empty, not cleaned container – recycling

Mixture – dilute with water, it is not recommended to drain the product that is not diluted.

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.

Annex XVI SVHC

Boric acid is on the list of prospective substances of very high concern (SVHC) which can be included in the annex XIV of the Regulation REACH 1907/2006 (list of permits). (18.06.2010-ED/30/2010).

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)

15.2 Chemical safety assessment

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

SECTION 16 OTHER INFORMATION

Abbreviations and acronyms:

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

Classification according to Regulation (EC) 1272/2008

May damage fertility or the unborn child, cat. 1B – H360FD – Specific concentrations
Boric acid: C >= 5.5 Repr. 1B
Harmful to aquatic life with long lasting effects cat. 3 – H412 – calculation method

Full text of H phrases and other abbreviations referring to Section 2 and 3

H 360D	May damage fertility or the unborn child.
H 318	Causes serious eye damage
H 373	May cause damage to organs through prolonged or repeated exposure
H 302	Harmful if swallowed
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.

Sections amended: N/A

