VitaFer sp. z o.o. sp. k.
Al. Krakowska 19, 05-555 Tarczyn
NIP:1231426805; KRS: 0000772883

SAFETY DATA SHEET
VitaFer Bor – Liquid Foliar Fertilizer

SECTION 1 IDENTIFICATION OF THE MIXTURE AND OF THE COMPANY

1.1 Product identifier	**VitaFer Bor**
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. 19 Al. Krakowska 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)
Product not classified as dangerous.

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

2.3 Other hazards
"EC Fertilizer"
Type E.1.1d Boronethanolamine
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

The mixture contains: boric acid and ethanolamine

Name of the substance	Index number	CE number	CAS number	Weighted %	EC No. 1272/2008 classification
Boric acid *	01-2119486683-25-0006	233-139-2	10043-35-5	50 - 70	H360FD
Ethanolamine	01-2119486455-28-XXXX	205-483-3	141-43-5	20 – 25	H332; H302 H312; H314 H335

(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 – Remove contaminated clothing, wash skin with a lot of cold 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 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. 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 toxic and caustic gases 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 – not specified
- 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 +5ºC to +30ºC (the optimum temperature is 25ºC). Store in a dry and well ventilated place. Secure the containers against physical damage.

Incompatible materials – oxidisers
Storage 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
Monoethanolamine: CAS no.: 141-43-5
Normative: TLV-TWA 3 mg/m3; TLV-STEL: 10 mg/m3, 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/m3	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/m3	Society	Long-term effect
Oral	0.98 mg/kg bw/day	Society	Long-term

Monoethanolamine 80%

Skin	0.24 mg/day bw/day	Workers	Long-term effects
Oral	0.3.75 mg/kg bw/day	Workers	Long-term effects
Inhalation	2 mg/m3	Workers	Long-term effects
Skin (general)	1 mg/kg bw/day	Society	Long-term effects
Inhalation	3.3 mg/m3	Society	Long-term 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
Total, periodic water reservoirs – 9.1 mg B/l
Total, water treatment plant – 1.75 mg B/l
Monoethanolamine 80%
Fresh water – 0.085 mg/l
Sea water – 0.0085 mg/l
Sporadic releases – 0.025 mg/l
Water treatment plant – 100 mg/l
Sediment fresh water – 0.425 mg/kg dw
Sediment sea water – 0.0425 mg/kg dw
Soil – 0.035 mg/kg

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	Clear pale yellow solution	Organoleptic
Odour	Typical	Organoleptic
Odour threshold	N/A	
pH of 1% solution in 20ºC	7.0 – 8.0	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	1.36 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 5ºC.
10.5. Incompatible materials No data available
None known.
10.6. Hazardous decomposition products
During fire or on heating it may produce toxic and caustic gases (carbon oxide, carbon dioxide, ammonia).

SECTION 11 TOXICOLOGICAL INFORMATION

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 the probable ways of exposure
No data available
Symptoms related to physical, chemical and toxicological properties

No data available
Delayed, direct or chronic effects of short-term and long-term exposure
No data available
Interaction effects
No data available

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.

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.

Waste catalogue no.:
02 01 09 - Agrochemical waste other than those mentioned in 02 01 08
15 01 12 - Plastic packaging.
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)

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

The components of the mixture react and produce boric acid salt of ethanolamine CAS 94095-04-2; EC 302-207-4, not classified as dangerous.

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

H 360D	May damage fertility or the unborn child.
H 332	Harmful if inhaled
H 302	Harmful if swallowed
H 312	Harmful in contact with skin
H 314	Causes severe skin burns and eye damage
H 335	May cause respiratory irritation

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

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.