Safety Data Sheet
GREENLEAF 34.6.12 + TE

Safety Data Sheet dated 29/4/2020, version 1.1

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

1.1. Product identifier

Trade name:

GREENLEAF 34.6.12 + TE

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

Recommended use:

Fertiliser in powder. Agricultural use.

1.3. Details of the supplier of the safety data sheet

Company:

Biolchim S.p.A. - Via San Carlo 2130 - 40059 Medicina (BO) - Italy

Biolchim spa - tel 051 6971811

NZ Supplier:

Biolchim NZ Ltd – PO Box 5451, Mt Maunganui, 3150, New Zealand – Phone 027 272 0799

Competent person responsible for the safety data sheet:

biolchim@biolchim.it

1.4. Emergency telephone number

0800 CHEMCALL (0800 243 622)

0800 POISON (0800 764 766)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

HSNO Approval Number, Group Standards: HSR002571 Fertilisers (Subsidiary Hazard).

HSNO Hazard Class:

6.3B	Mildly irritating to the skin
6.4A	Irritating to the eye
6.8B	Suspected human reproductive or developmental toxicants
9.3C	Harmful to terrestrial vertebrates

Adverse physicochemical, human health and environmental effects:

No other hazards

2.2. Label elements

The product is not classified as dangerous according to Regulation EC 1272/2008 (CLP).

Hazard pictograms:

Warning

Hazard statements:

H316 Causes mild skin irritation.

H320 Causes eye irritation.

H341 Suspected of causing genetic defects.

H361 Suspected of damaging fertility or the unborn child

H433 Harmful to terrestrial vertebrates.

Precautionary statements:

P264 Wash thoroughly with water after handling.

P273 Avoid release to the environment.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P308+P313 IF exposed or concerned: Get medical advice/ attention.

P332+P313 If skin irritation occurs: Get medical advice/ attention.

P337+P313 If eye irritation persists: Get medical advice/attention.

P341 If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing.
P405 Store locked up.
P501 Dispose of contents/container in accordance with applicable regulations.

Special Provisions:
None

Special provisions according to Annex XVII of REACH and subsequent amendments:
None

2.3. Other hazards
vPvB Substances: None - PBT Substances: None

Other Hazards:
No other hazards

SECTION 3: Composition/information on ingredients

3.1. Substances
N.A.

3.2. Mixtures
Hazardous components within the meaning of the CLP regulation and related classification:

Qty	Name	Ident. Number	Classification
>= 0.1% - < 0.25%	boric acid	Index number: 005-007-00-2 CAS: 10043-35-3 EC: 233-139-2 REACH No.: 01-2119486683-25	 3.7/1B Repr. 1B H360FD Specific Concentration Limits: C >= 5,5%: Repr. 1B H360FD

SVHC Substances:
>= 0.1% - < 0.25% boric acid
REACH No.: 01-2119486683-25, Index number: 005-007-00-2, CAS: 10043-35-3, EC: 233-139-2
Substance SVHC

SECTION 4: First aid measures

4.1. Description of first aid measures

In case of skin contact:
Wash with plenty of water and soap.

In case of eyes contact:
In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

In case of Ingestion:
Do not under any circumstances induce vomiting. OBTAIN A MEDICAL EXAMINATION IMMEDIATELY.

In case of Inhalation:
Remove casualty to fresh air and keep warm and at rest.

4.2. Most important symptoms and effects, both acute and delayed
None

4.3. Indication of any immediate medical attention and special treatment needed
Treatment:
None

SECTION 5: Firefighting measures

5.1. Extinguishing media
Suitable extinguishing media:
Water.

Carbon dioxide (CO2).
Extinguishing media which must not be used for safety reasons:
None in particular.

5.2. Special hazards arising from the substance or mixture
Do not inhale explosion and combustion gases.
Burning produces heavy smoke.

5.3. Advice for firefighters
Use suitable breathing apparatus .
Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Move undamaged containers from immediate hazard area if it can be done safely.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Wear personal protection equipment.
Remove persons to safety.
See protective measures under point 7 and 8.

6.2. Environmental precautions
Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains.
Retain contaminated washing water and dispose it.
In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.
Suitable material for taking up: absorbing material, organic, sand

6.3. Methods and material for containment and cleaning up
Wash with plenty of water.

6.4. Reference to other sections
See also section 8 and 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Avoid contact with skin and eyes, inhaltion of vapours and mists.
See also section 8 for recommended protective equipment.
General recommendations on occupational hygiene:
Do not eat or drink while working.

7.2. Conditions for safe storage, including any incompatibilities
Keep away from food, drink and feed.
Incompatible materials:
None in particular.
Instructions as regards storage premises:
Adequately ventilated premises.

7.3. Specific end use(s)
None in particular

SECTION 8: Exposure controls/personal protection

8.1. Control parameters
boric acid - CAS: 10043-35-3
AGS - TWA(8h): 0.5 mg/m3 - STEL: 1 mg/m3 - Notes: Gerrmany : Inhalable fraction, 15 minutes average value
DFG - TWA(8h): 10 mg/m3 - STEL: 10 mg/m3 - Notes: Germany : Calculated as boron: 1,8 mg/m³ - 15 minutes average value In the case of simultaneous appearance of boric acid and tetraborates counts 0,75 mg/m³ calculated as boron
ACGIH - TWA: 2 mg/m3 - STEL: 6 mg/m3 - Notes: A4 - URT irr (inhalable particulate)
National - TWA(8h): 10 mg/m3 - Notes: Latvia
National - TWA(8h): 2 mg/m3 - STEL: 6 mg/m3 - Notes: Spain
DNEL Exposure Limit Values

boric acid - CAS: 10043-35-3
Worker Industry: 8.3 mg/m3 - Worker Professional: 8.3 mg/m3 - Consumer: 4.15 mg/m3 - Exposure: Human Inhalation - Frequency: Long Term, systemic effects
Worker Industry: 392 mg/kg body mass/day - Worker Professional: 392 mg/kg body mass/day - Consumer: 196 mg/kg body mass/day - Exposure: Human Dermal - Frequency: Long Term, systemic effects
Consumer: 0.98 mg/kg body mass/day - Exposure: Human Oral - Frequency: Long Term, systemic effects
Consumer: 0.98 mg/kg body mass/day - Exposure: Human Oral - Frequency: Short Term, systemic effects

PNEC Exposure Limit Values
boric acid - CAS: 10043-35-3
Target: Fresh Water - Value: 1.35 mg/l - Notes: As Boron (B)
Target: Intermittent release - Value: 9.1 mg/l - Notes: As Boron (B)
Target: Marine water sediments - Value: 1.8 mg/kg - Notes: As Boron (B)
Target: STP - Value: 1.75 mg/kg - Notes: As Boron (B)
Target: Soil - Value: 5.7 mg/kg soil dw

8.2. Exposure controls

Eye protection:
Safety glasses.
(see standard EN 166)

Protection for skin:
Disposable suit.
(see standard EN 13034)
Safety shoes.
(see standard UNI EN ISO 20345)

Protection for hands:
Suitable gloves type:
One-time gloves.
Suitable material:
NBR (nitrile rubber).
(see standard EN 374)
Wash hands before eating, drinking or smoking.

Respiratory protection:
Avoid inhaling the product.
Provide adequate ventilation. Good local ventilation and a good general air exchange system must be ensured.

Thermal Hazards:
None

Environmental exposure controls:
Use according to good working practices, avoiding to disperse the product in the environment.
Do not discharge the product into the sewers.

Appropriate engineering controls:
Ensure adequate ventilation, especially in confined areas.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Properties	Value	Method:	Notes
Appearance and colour (20°C-101,3kPa):	Solid, white	--	The product may undergo color changes that are not relevant for classification and product quality.
Odour:	Not Relevant	--	Not relevant for product classification purposes.

Odour threshold:	N.A.	--	--
pH (20°C):	4.1 (Sol.1% w/w)	--	--
Melting point / freezing point:	Not Relevant	--	Melting point higher than the temperature range of use of the product.
Initial boiling point and boiling range:	Not Relevant	--	Boiling point higher than the temperature range of use of the product.
Flash point:	N.A.	--	NOT FLAMMABLE: mixture consisting of inorganic components (Annex VII REACH) and / or non-flammable organic components.
Evaporation rate:	N.A.	--	Solid
Solid/gas flammability:	Not inflammable	--	Mixture consisting of inorganic components (Annex VII REACH) and / or non-flammable organic components.
Upper/lower flammability or explosive limits:	N.A.	--	Not flammable.
Vapour pressure:	N.A.	--	Solid
Vapour density:	N.A.	--	Solid
Relative density (20°C):	Not Relevant	--	--
Solubility in water:	Soluble	--	--
Solubility in oil:	Not Relevant	--	Not relevant for classification and use of the product.
Partition coefficient (n-octanol/water):	N.A.	--	See paragraph 12 for values referring to individual substances.
Auto-ignition temperature:	N.A.	--	Not flammable.
Decomposition temperature:	Not Relevant	--	Decomposition temperature higher than the temperature range of use of the product.
Viscosity:	N.A.	--	Solid
Explosive properties:	Not Explosive	--	Mixture consisting of non-explosive components.
Oxidizing properties:	Not Oxidizing	--	--

9.2. Other information

Properties	**Value**	**Method:**	**Notes**
Miscibility:	N.A.	--	Solid
Fat Solubility:	Not Relevant	--	Not relevant for classification and use of the product.
Conductivity (25°C):	3.3 mS/cm (Sol.1% w/w)	--	--
Substance Groups relevant properties	Not Relevant	--	--

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable under normal conditions

10.2. Chemical stability

Stable under normal conditions

10.3. Possibility of hazardous reactions

None

10.4. Conditions to avoid

Stable under normal conditions.

10.5. Incompatible materials

None in particular.

10.6. Hazardous decomposition products

None.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicological information of the main substances found in the product:

boric acid - CAS: 10043-35-3

a) acute toxicity:

Test: LD50 - Route: Oral - Species: Rat >= 3500 mg/kg bw/day
Test: LD50 - Route: Skin - Species: Rabbit = 2000 mg/kg bw/day
Test: LC50 - Route: Inhalation - Species: Rat > 2 g/m3

c) serious eye damage/irritation:

Negative

g) reproductive toxicity:

Test: NOAEL - Route: Oral - Species: Rat = 100 mg/kg bw/day

SECTION 12: Ecological information

12.1. Toxicity

Adopt good working practices, so that the product is not released into the environment.

boric acid - CAS: 10043-35-3

a) Aquatic acute toxicity:

Endpoint: EC50 - Species: Algae = 40 mg/l - Duration h: 72 - Notes: As Boron (B) or 229 mg boric acid/L
Endpoint: LC50 - Species: Daphnia = 133 mg/l - Duration h: 48 - Notes: As Boron (B) or 760 mg boric acid/L
Endpoint: LC50 - Species: Fish = 79.7 mg/l - Duration h: 96 - Notes: As Boron (B) or 456 mg boric acid/L

12.2. Persistence and degradability

None

boric acid - CAS: 10043-35-3

Biodegradability: Not biodegradable.

12.3. Bioaccumulative potential

boric acid - CAS: 10043-35-3

Bioaccumulation: Not significantly bioaccumulative.

12.4. Mobility in soil

boric acid - CAS: 10043-35-3

Mobility in soil: Soluble in water and permeable through normal soil.

12.5. Results of PBT and vPvB assessment

vPvB Substances: None - PBT Substances: None

12.6. Other adverse effects

None

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Recover if possible. In so doing, comply with the local and national regulations currently in force.

SECTION 14: Transport information

14.1. UN number

Not classified as dangerous in the meaning of transport regulations.

14.2. UN proper shipping name

N.A.

14.3. Transport hazard class(es)

N.A.

14.4. Packing group

N.A.

14.5. Environmental hazards

N.A.

14.6. Special precautions for user

N.A.

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

N.A.

SECTION 15: Regulatory information

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

HSNO Approval Number, Group Standards: HSR002571 Fertilisers (Subsidiary Hazard).
Dir. 98/24/EC (Risks related to chemical agents at work)
Dir. 2000/39/EC (Occupational exposure limit values)
Regulation (EC) n. 1907/2006 (REACH)
Regulation (EC) n. 1272/2008 (CLP)
Regulation (EC) n. 790/2009 (ATP 1 CLP) and (EU) n. 758/2013
Regulation (EU) 2015/830
Regulation (EU) n. 286/2011 (ATP 2 CLP)
Regulation (EU) n. 618/2012 (ATP 3 CLP)
Regulation (EU) n. 487/2013 (ATP 4 CLP)
Regulation (EU) n. 944/2013 (ATP 5 CLP)
Regulation (EU) n. 605/2014 (ATP 6 CLP)
International Regulations of the transport of dangerous goods (ADR, RID, IMDG, ICAO/IATA).
Regulation (EU) n. 2015/1221 (ATP 7 CLP)
Regulation (EU) n. 2016/918 (ATP 8 CLP)
Regulation (EU) n. 2016/1179 (ATP 9 CLP)
Regulation (EU) n. 2017/776 (ATP 10 CLP)
Regulation (EU) n. 2018/699 (ATP 11 CLP)

Restrictions related to the product or the substances contained according to Annex XVII Regulation (EC) 1907/2006 (REACH) and subsequent modifications:

Restrictions related to the product:

No restriction.

Restrictions related to the substances contained:

Restriction 30

Where applicable, refer to the following regulatory provisions :

Directive 2012/18/EU (Seveso III)
Regulation (EC) nr 648/2004 (detergents).
Dir. 2004/42/EC (VOC directive)

SVHC Substances:

Substances in candidate list (Art. 59 Reg. 1907/2006, REACH):

boric acid

Toxic to reproduction

Provisions related to directive EU 2012/18 (Seveso III):

Seveso III category according to Annex 1, part 1

None

15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out for the mixture.

SECTION 16: Other information

Full text of phrases referred to in Section 3:

H360FD May damage fertility. May damage the unborn child.

Hazard class and hazard category	Code	Description
Repr. 1B	3.7/1B	Reproductive toxicity, Category 1B

This document was prepared by a competent person who has received appropriate training.
Main bibliographic sources:

ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre, Commission of the European Communities

SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition - Van Nostrand Reinold

The information contained herein is based on our state of knowledge at the above-specified date. It refers solely to the product indicated and constitutes no guarantee of particular quality.
It is the duty of the user to ensure that this information is appropriate and complete with respect to the specific use intended.
This MSDS cancels and replaces any preceding release.

ADR:	European Agreement concerning the International Carriage of Dangerous Goods by Road.
ATE:	Acute Toxicity Estimate
ATEmix:	Acute toxicity Estimate (Mixtures)
CAS:	Chemical Abstracts Service (division of the American Chemical Society).
CLP:	Classification, Labeling, Packaging.
DNEL:	Derived No Effect Level.
EINECS:	European Inventory of Existing Commercial Chemical Substances.
GefStoffVO:	Ordinance on Hazardous Substances, Germany.
GHS:	Globally Harmonized System of Classification and Labeling of Chemicals.
HSNO:	Hazardous Substances and New Organisms (Act and Regulation).
IATA:	International Air Transport Association.
IATA-DGR:	Dangerous Goods Regulation by the "International Air Transport Association" (IATA).
ICAO:	International Civil Aviation Organization.
ICAO-TI:	Technical Instructions by the "International Civil Aviation Organization" (ICAO).
IMDG:	International Maritime Code for Dangerous Goods.
INCI:	International Nomenclature of Cosmetic Ingredients.
KSt:	Explosion coefficient.
LC50:	Lethal concentration, for 50 percent of test population.
LD50:	Lethal dose, for 50 percent of test population.
PNEC:	Predicted No Effect Concentration.
RID:	Regulation Concerning the International Transport of Dangerous Goods by Rail.
STEL:	Short Term Exposure limit.
STOT:	Specific Target Organ Toxicity.
TLV:	Threshold Limiting Value.
TWA:	Time-weighted average
WGK:	German Water Hazard Class.