Safety Data Sheet
GREENLEAF 20.20.20

Safety Data Sheet version 3.0 dated 15/3/2022

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

1.1. Product identifier

Trade name:

GREENLEAF 20.20.20

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 764 766 (National Poison Centre)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

HSNO Hazard Classification:

NOT Classified as hazardous according to Regulation (EC) No. 1272/2008 [CLP] which meets New Zealand jurisdiction criteria as per EPA Hazardous Substances (Safety Data Sheets) Notice 2017 Part B Clause 9.

EC regulation criteria 1272/2008 (CLP)

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

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:

None

Hazard statements:

None

Precautionary statements:

None

Special Provisions:

None

Special provisions according to Annex XVII of REACH and subsequent amendments:

None

2.3. Other hazards

No PBT, vPvB or endocrine disruptor substances present in concentration >= 0.1%

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: CAS: EC: REACH No.:	005-007-00-2 10043-35-3 233-139-2 01-2119486683-25	 3.7/1B Repr. 1B H360FD

SVHC, PBT, vPvB, endocrine disruptor 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

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.

After contact with skin, wash immediately with soap and plenty of water for at least 10-15 min.

In case of eyes contact:

After contact with the eyes, rinse with water with the eyelids open for at least 10-15 min., then consult an ophthalmologist immediately.

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

In case of Ingestion:

Do not induce vomiting.

Seek immediate medical attention.

Do not give anything that is not expressly authorized by your doctor.

In case of Inhalation:

Remove casualty to fresh air and keep warm and at rest.

First aid self-protection:

Adopt adequate precautions for the rescuer in accordance with the contents of the first aid kit (Ministerial Decree No. 388/2003)

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

There are no known episodes of damage to health attributable to the product.

4.3. Indication of any immediate medical attention and special treatment needed

Treatment:

No specific treatments related to the product are known. Contact specialized medical personnel.

For information on the substances contained, see sections 3 and 11.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

Carbon dioxide, foam, powder and water.

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

Cool the containers with jets of water.

Always wear full fire protection equipment.

Collect the extinguishing water which must not be fed into the sewers.

Dispose of the contaminated water used for extinguishing and the residue of the fire according to current regulations.
EQUIPMENT:
Normal clothing for firefighting, such as an open circuit compressed air breathing apparatus (EN 137), flame retardant suit (EN 469), flame retardant gloves (EN 659) and fire brigade boots (HO A29 or A30).

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
For containment:
Collect the product for re-use, if possible, or for disposal.
For recovery or disposal, vacuum or clean and place in appropriate labeled containers.
For cleaning up:
Provide sufficient ventilation of the place affected by the leak. Disposal of contaminated material must be carried out in accordance with the provisions of section 13.
Clear spills immediately

6.4. Reference to other sections
Any information regarding personal protection and disposal is given in sections 8 and 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Handle the product after consulting all the other sections of this safety data sheet.
Avoid the dispersion of the product in the environment outside the indicated uses.
Avoid contact with skin and eyes, inhalation of vapors and mists.
See also section 8 for recommended protective equipment.
Advice on general occupational hygiene:
Do not eat, drink or smoke when using this product.
Wash hands after use
Contamined clothing should be changed before entering eating areas.

7.2. Conditions for safe storage, including any incompatibilities
Keep the product in clearly labeled containers.
Store with care and attention, avoiding precarious storage.
Keep the containers closed in a well-ventilated place.
Store the containers in a dry place away from sunlight or other atmospheric agents.
Keep away from food, drink and feed.
Incompatible materials:
See the following paragraph 10.
Instructions as regards storage premises:
Cool and adequately ventilated.

7.3. Specific end use(s)
Refer to section 1.2

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(8h): 2 mg/m3 - STEL: 6 mg/m3 - Notes: (I), A4 - URT irr
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: 2.9 mg/l - Notes: As Boron (B)
Target: Marine water - Value: 2.9 mg/l - Notes: As Boron (B)
Target: Intermittent release - Value: 13.7 mg/l - Notes: As Boron (B)
Target: STP - Value: 10 mg/l - Notes: As Boron (B)
Target: Soil - Value: 5.7 mg/kg soil dw - Notes: As Boron (B)

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
Physical state (20°C-101,3kPa):	Solid	--	--
Colour:	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.
Melting point/freezing point:	Not Relevant	--	Melting point higher than the temperature range of use of the product.
Boiling point or initial boiling point and boiling range:	Not Relevant	--	Boiling point higher than the temperature range of use of the product.
Flammability:	Non-flammable	--	--
Lower and upper explosion limit:	N.A.	--	Not flammable.
Flash point:	N.A.	--	NOT FLAMMABLE: mixture consisting of inorganic components (Annex VII REACH) and / or non-flammable organic components.
Auto-ignition temperature:	N.A.	--	Not flammable.
Decomposition temperature:	Not Relevant	--	Decomposition temperature higher than the temperature range of use of the product.
pH (20°C):	5.3 (sol. 1% w/w)	--	--
Kinematic viscosity:	N.A.	--	solid
Solubility in water:	Soluble	--	--
Solubility in oil:	Not Relevant	--	Not relevant for classification and use of the product.
Partition coefficient n-octanol/water (log value):	N.A.	--	See paragraph 12 for values referring to individual substances.
Vapour pressure:	N.A.	--	Solid
Density and/or relative density (20°C):	1.05 g/mL	--	--
Relative vapour density:	N.A.	--	Solid
Particle characteristics:			
Particle size:	N.A.	--	--

9.2. Other information

Properties	Value	Method:	Notes
Miscibility:	N.A.	--	Solid
Conductivity (25°C):	7.6 mS/cm (sol. 1% w/w)	--	--
Oxidizing properties:	Not Oxidizing	--	--

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable under normal conditions
Substances Information:
N.A.

10.2. Chemical stability
Stable under normal conditions
Substances Information:
boric acid - CAS: 10043-35-3
Boric acid is a stable product under normal conditions of use, storage and transport. When heated (more than 100°C) it loses water giving rise first to metaboric acid (HBO_2) and if further heated it is converted into boron oxide (B_2O_3).

10.3. Possibility of hazardous reactions
None
Substances Information:
boric acid - CAS: 10043-35-3
In reaction with reducing agents it produces hydrogen gas which can create an explosion hazard.

10.4. Conditions to avoid
Stable under normal conditions.
Substances Information:
boric acid - CAS: 10043-35-3
Exposure to moisture.
High temperatures
Heat, flames and sparks

10.5. Incompatible materials
None in particular.
Substances Information:
boric acid - CAS: 10043-35-3
Strong reducing agents.

10.6. Hazardous decomposition products
According to the data in our possession, no one in particular to report.
Substances Information:
N.A.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008
Toxicological information of the product:
GREENLEAF 20.20.20
a) acute toxicity
Not classified
Based on available data, the classification criteria are not met
b) skin corrosion/irritation
Not classified
Based on available data, the classification criteria are not met
c) serious eye damage/irritation
Not classified
Based on available data, the classification criteria are not met
d) respiratory or skin sensitisation
Not classified
Based on available data, the classification criteria are not met
e) germ cell mutagenicity
Not classified
Based on available data, the classification criteria are not met
f) carcinogenicity
Not classified
Based on available data, the classification criteria are not met

g) reproductive toxicity
Not classified
Based on available data, the classification criteria are not met
h) STOT-single exposure
Not classified
Based on available data, the classification criteria are not met
i) STOT-repeated exposure
Not classified
Based on available data, the classification criteria are not met
j) aspiration hazard
Not classified
Based on available data, the classification criteria are not met

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 (Male) 3450 mg/kg bw
Test: LD50 - Route: Oral - Species: Rat (Female) 4080 mg/kg bw
Test: LD50 - Route: Oral - Species: Rat (Male) > 2600 mg/kg bw - Notes: (Boron trioxide) OECD Guideline 401
Test: LC50 - Route: Inhalation - Species: Rat > 2.03 mg/l air - Duration: 5h - Notes: OECD Guideline 403
Test: LD50 - Route: Skin - Species: Rabbit > 2000 mg/kg bw - Notes: FIFRA (40 CFR 163)

d) respiratory or skin sensitisation:
Route: Skin - Species: Guinea pig Negative - Notes: 95% boric acid solution (OECD Guide-line 406)

g) reproductive toxicity:
Test: NOAEL - Route: Oral - Species: Rat (Male) 17.5 mg/kg - Notes: as B
Test: LOAEL - Route: Oral - Species: Rat 58.5 mg/kg bw - Notes: as B

i) STOT-repeated exposure:
Test: NOAEL - Route: Oral - Species: Rat 17.5 mg/kg bw/day - Notes: as B
Test: LOAEL - Route: Oral - Species: Rat 58.5 mg/kg bw/day - Notes: as B

11.2. Information on other hazards

Endocrine disrupting properties:
No endocrine disruptor substances present in concentration >= 0.1%

SECTION 12: Ecological information

12.1. Toxicity

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

GREENLEAF 20.20.20

Not classified for environmental hazards
Based on available data, the classification criteria are not met

boric acid - CAS: 10043-35-3

a) Aquatic acute toxicity:
Endpoint: LC50 - Species: Fish 79.7 mg/l - Duration h: 96 - Notes: Pimephales promelas (freshwater fish)
Endpoint: LC50 - Species: Fish 74 mg/l - Duration h: 96 - Notes: Dab L. limanda (marine fish)
Endpoint: LC50 - Species: Aquatic invertebrates - Duration h: 4d - Notes: 64 - 544 mg/L
Endpoint: LC50 - Species: Aquatic invertebrates - Duration h: 48 - Notes: 91 - 165 mg/L
Endpoint: NOEC - Species: Aquatic invertebrates 103 mg/l - Duration h: 4d
Endpoint: EC50 - Species: Algae - Duration h: 72 - Notes: 40.2 - 66 mg/L
Endpoint: NOEC - Species: Algae - Duration h: 72 - Notes: 17.5 - 27.9 mg/L
Endpoint: EC10 - Species: Algae - Duration h: 72 - Notes: 24.5 - 50.7 mg/L

b) Aquatic chronic toxicity:
Endpoint: NOEC - Species: Fish - Duration h: 32d - Notes: 11.2 - 44.5 mg/L
Endpoint: LOEC - Species: Fish 23 mg/l - Duration h: 32d
Endpoint: NOEC - Species: Fish 6.4 mg/l - Duration h: 34d
Endpoint: NOEC - Species: Aquatic invertebrates - Duration h: 42d - Notes: 6.6 - 25.9 mg/L
Endpoint: NOEC - Species: Aquatic invertebrates - Duration h: 28d - Notes: 16.6 - 43.3 mg/L
Endpoint: NOEC - Species: Aquatic invertebrates - Duration h: 21d - Notes: 6 - 34.2 mg/L
Endpoint: NOEC - Species: Aquatic invertebrates - Duration h: 14d - Notes: 13.8 - 14.3 mg/L
Endpoint: NOEC - Species: Aquatic invertebrates 33.1 mg/l - Duration h: 12d

c) Bacteria toxicity:
Endpoint: EC50 - Species: Micro organism - Duration h: 3 - Notes: 175 - 10000 mg/L (OECD Guideline 209)
Endpoint: NOEC - Species: Micro organism - Duration h: 72 - Notes: 10 - 20 mg/L (OECD Guideline 209)

d) Terrestrial toxicity:
Endpoint: EC10 - Species: Arthropods - Duration h: 28d - Notes: 13.8 - 68.1 mg/kg
Endpoint: NOEC - Species: Arthropods - Duration h: 35d - Notes: 21.9 - 175 mg/kg
Endpoint: NOEC - Species: Arthropods 174.8 mg/kg bw - Duration h: 21d
Endpoint: EC10 - Species: Micro organism - Duration h: 102d - Notes: 15.4 - 17.2 mg/kg soil (OCSE Guideline 216)
Endpoint: EC50 - Species: Micro organism 17.5 mg/Kg soil - Duration h: 102d - Notes: OCSE Guideline 216

e) Plant toxicity:
Endpoint: NOEC 56 mg/Kg soil - Duration h: 7d - Notes: Allium cepa
Endpoint: NOEC 28 mg/Kg soil - Duration h: 5d - Notes: Brassica rapa

12.2. Persistence and degradability
None
boric acid - CAS: 10043-35-3
Biodegradability: There is no need to carry out the study if the substance is inorganic.

12.3. Bioaccumulative potential
boric acid - CAS: 10043-35-3
Bioaccumulation: Not relevant for inorganic substances

12.4. Mobility in soil
boric acid - CAS: 10043-35-3
Mobility in soil: Soluble in water and permeable through normal soil. - Notes: Log Pow: - 1.09 (22°C)

12.5. Results of PBT and vPvB assessment
vPvB Substances: None - PBT Substances: None

12.6. Endocrine disrupting properties
No endocrine disruptor substances present in concentration >= 0.1%

12.7. Other adverse effects
None

SECTION 13: Disposal considerations

13.1. Waste treatment methods
Do not dispose of the unused product and the container in the environment.
The dangerousness of the waste that partially contains this product must be evaluated according to the laws in force.
Disposal must be entrusted to an authorized waste management company, in compliance with national and possibly local regulations.
CONTAMINATED PACKAGING:

Contaminated packaging must be sent for recovery or disposal in compliance with national waste management regulations.

SECTION 14: Transport information

This product is NOT classified as a Dangerous Good for transport in NZ; NZS 5433:2012

14.1. UN number or ID 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. Maritime transport in bulk according to IMO instruments
N.A.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
NOT Classified as hazardous according to Regulation (EC) No. 1272/2008 [CLP] which meets New Zealand jurisdiction criteria as per EPA Hazardous Substances (Safety Data Sheets) Notice 2017 Part B Clause 9.
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) n. 2020/878
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. 2018/669 (ATP 11 CLP)
Regulation (EU) n. 2018/1480 (ATP 13 CLP)
Regulation (EU) n. 2019/521 (ATP 12 CLP)
Regulation (EU) n. 2020/217 (ATP 14 CLP)
Regulation (EU) n. 2020/1182 (ATP 15 CLP)
Regulation (EU) n. 2021/643 (ATP 16 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
Restriction 75

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)
Regulation (EU) 2019/1148
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

Provisions relating to Regulation (EU) 2019/1148:
'This product is regulated by Regulation (EU) 2019/1148: all suspicious transactions, and significant disappearances and thefts should be reported to the relevant national contact point. Please see https://ec.europa.eu/home-affairs/sites/homeaffairs/files/what-we-do/policies/crisis-and-terrorism/explosives/explosives-precursors/docs/list_of_competent_authorities_and_national_contact_points_en.pdf'
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 safety data sheet has been completely updated in compliance to Regulation 2020/878.

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.
EPA:	Environmental Protection Authority.
GefStoffVO:	Ordinance on Hazardous Substances, Germany.

GHS:	Globally Harmonized System of Classification and Labeling of Chemicals.
HSNO:	Hazardous Substances and New Organisms.
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.