Safety Data Sheet
GREENLEAF 20.20.20

Safety Data Sheet dated 8/10/2018, version 1.1

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 - 8 Cherokee Place, Unit A0 (c/o ULTIMATE COATINGS), MT MAUNGANUI, 3116, New Zealand - Ph: + 64 27 272 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:

6.1E	Acutely toxic – May be harmful.
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

Hazard pictograms:

Warning

Hazard statements:

H303 May be harmful if swallowed.

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
>= 40% - < 50%	potassium nitrate	CAS: 7757-79-1 EC: 231-818-8 REACH No.: 01-2119488224-35	 2.14/3 Ox. Sol. 3 H272
>= 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

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:
Immediately take off all contaminated clothing.
Areas of the body that have - or are only even suspected of having - come into contact with the product must be rinsed immediately with plenty of running water and possibly with soap.
Wash thoroughly the body (shower or bath).
Remove contaminated clothing immediatley and dispose off safely.
After contact with skin, wash immediately with soap and plenty of water.

In case of eyes contact:

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an opthalmologist immediately.
Protect uninjured eye.

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

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).
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.
Don't use empty container before they have been cleaned.
Before making transfer operations, assure that there aren't any incompatible material residuals in the containers.
Contamined clothing should be changed before entering eating areas.

Do not eat or drink while working.
See also section 8 for recommended protective equipment.

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

potassium nitrate - CAS: 7757-79-1

TLV TWA - 10 mg/m3 (IOELV) - 15 mg/m3 (ACGIH)
TLV STEL - 3 mg/m3 (IOELV) - 5 mg/m3 (ACGIH) respirable fr.

boric acid - CAS: 10043-35-3

OSHA - TWA: 15 mg/m3 - Behaviour: Total dust
OSHA - TWA: 5 mg/m3 - Behaviour: Inhalable dust
ACGIH - TWA(8h): 2 mg/m3 - STEL: 6 mg/m3 - Notes: (I), A4 - URT irr

DNEL Exposure Limit Values

potassium nitrate - CAS: 7757-79-1

Worker Industry: 36.7 mg/m3 - Worker Professional: 36.7 mg/m3 - Consumer: 10.9 mg/m3 - Exposure: Human Inhalation - Frequency: Long Term, systemic effects
Worker Industry: 20.8 mg/kg body mass/day - Worker Professional: 20.8 mg/kg body mass/day - Consumer: 12.5 mg/kg body mass/day - Exposure: Human Dermal - Frequency: Long Term, systemic effects
Consumer: 12.5 mg/kg body mass/day - Exposure: Human Oral - Frequency: Long Term, systemic effects

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 - Exposure: Human Oral - Frequency: Long Term, systemic effects

PNEC Exposure Limit Values

potassium nitrate - CAS: 7757-79-1

Target: Fresh Water - Value: 0.45 mg/l
Target: Marine water - Value: 0.045 mg/l
Target: Intermittent release - Value: 4.5 mg/l
Target: STP - Value: 18 mg/l

boric acid - CAS: 10043-35-3

Target: Fresh Water - Value: 2.9 mg/l - Notes: (mgB/L)
Target: Marine water - Value: 2.9 mg/l - Notes: (mgB/L)
Target: Marine water sediments - Value: 1.8 mg/kg - Notes: (mgB/L)
Target: Freshwater sediments - Value: 1.8 mg/kg - Notes: (mgB/L)
Target: Soil (agricultural) - Value: 5.7 mg/kg - Notes: (mgB/L)

8.2. Exposure controls

Eye protection:

Use close fitting safety goggles, don't use eye lens.

Protection for skin:

Use clothing that provides comprehensive protection to the skin, e.g. cotton, rubber, PVC or viton.

Protection for hands:
Use protective gloves that provides comprehensive protection, e.g. P.V.C., neoprene or rubber.
Respiratory protection:
Not needed for normal use.
Thermal Hazards:
None
Environmental exposure controls:
None
Appropriate engineering controls:
None

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Properties	Value	Method:	Notes
Appearance and colour:	Solid, white	--	--
Odour:	Characteristic	--	--
Odour threshold:	Not Relevant	--	--
pH:	5,3 (Sol. 1%; 20°C)	--	--
Melting point / freezing point:	Not Relevant	--	--
Initial boiling point and boiling range:	Not Relevant	--	--
Flash point:	Not Relevant	--	--
Evaporation rate:	Not Relevant	--	--
Solid/gas flammability:	Not Relevant	--	--
Upper/lower flammability or explosive limits:	Not Relevant	--	--
Vapour pressure:	Not Relevant	--	--
Vapour density:	Not Relevant	--	--
Relative density:	Not Relevant	--	--
Solubility in water:	Soluble	--	--
Solubility in oil:	Not Relevant	--	--
Partition coefficient (n-octanol/water):	Not Relevant	--	--
Auto-ignition temperature:	Not Relevant	--	--
Decomposition temperature:	Not Relevant	--	--
Viscosity:	Not Relevant	--	--
Explosive properties:	Not Relevant	--	--
Oxidizing properties:	Not Relevant	--	--

9.2. Other information

Properties	Value	Method:	Notes
Miscibility:	Not Relevant	--	--
Fat Solubility:	Not Relevant	--	--
Conductivity:	7,6 mS/cm (sol. 1%; 25°C)	--	--
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 product:
N.A.
Toxicological information of the main substances found in the product:
potassium nitrate - CAS: 7757-79-1
a) acute toxicity:
Test: LD50 - Route: Skin - Species: Rat > 5000 mg/kg
Test: LD50 - Route: Oral - Species: Rat > 2000 mg/kg
b) skin corrosion/irritation:
Test: Skin Irritant Negative
c) serious eye damage/irritation:
Test: Eye Irritant Negative
d) respiratory or skin sensitisation:
Test: Skin Sensitization Negative
Test: LC50 - Route: Inhalation - Species: Rat > 527 mg/m3
e) germ cell mutagenicity:
Test: Mutagenesis - Species: Mammals (Animal) Cell: Germs Negative
f) carcinogenicity:
Test: Carcinogenicity Negative
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: Human = 3765 mg/kg bw - Notes: CRS
Test: LD50 - Route: Oral - Species: Mouse = 3450 mg/kg bw
Test: LD50 - Route: Oral - Species: Dog (Male) 2000 mg/kg bw
Test: LD50 - Route: Skin - Species: Rabbit > 2000 mg/kg bw
Test: LC50 - Route: Inhalation - Species: Rat > 2.03 mg/l air - Duration: 4h

If not differently specified, the information required in Regulation (EU)2015/830 listed below must be considered as N.A.:
a) acute toxicity;
b) skin corrosion/irritation;
c) serious eye damage/irritation;
d) respiratory or skin sensitisation;
e) germ cell mutagenicity;
f) carcinogenicity;
g) reproductive toxicity;
h) STOT-single exposure;
i) STOT-repeated exposure;

j) aspiration hazard.

SECTION 12: Ecological information

12.1. Toxicity

Adopt good working practices, so that the product is not released into the environment.
potassium nitrate - CAS: 7757-79-1
a) Aquatic acute toxicity:
Endpoint: EC50 - Species: Algae > 1700 mg/l - Duration h: 10 d
Endpoint: EC50 - Species: Daphnia = 490 mg/l - Duration h: 48 h
Endpoint: LC50 - Species: Fish = 1378 mg/l - Duration h: 96 h
boric acid - CAS: 10043-35-3
a) Aquatic acute toxicity:
Endpoint: EC50 - Species: Algae = 229 mg/l - Duration h: 72
Endpoint: LC50 - Species: Daphnia = 760 mg/l - Duration h: 48
Endpoint: LC50 - Species: Fish = 456 mg/l - Duration h: 96

12.2. Persistence and degradability

None
N.A.

12.3. Bioaccumulative potential

N.A.

12.4. Mobility in soil

N.A.

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)

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.
H272 May intensify fire; oxidiser.

Hazard class and hazard category	Code	Description
Ox. Sol. 3	2.14/3	Oxidising solid, Category 3
Eye Irrit. 2	3.3/2	Eye irritation, Category 2
Repr. 1B	3.7/1B	Reproductive toxicity, Category 1B

This safety data sheet has been completely updated in compliance to Regulation 2015/830.
Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Classification according to Regulation (EC) Nr. 1272/2008	Classification procedure
Eye Irrit. 2, H319	Calculation method

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.