

TRIBODyn AG
37154 Northeim

Date printed 12.02.2014, Revision 27.06.2013

Version 01

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SECTION 1: Identification of the substance / preparation and of the company

1.1 Product identifier

LITHOvit BORON 5 - TRIBODyn Foliar Fertilizer

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

1.2.1 Relevant uses

Foliar and soil fertilizers for field crops, grassland, fodder plants, intensive cultivation, forestry, horticulture and plant cultivation

1.2.2 Uses advised against

None known.

1.3 Details of the supplier of the safety data sheet

Company TRIBODyn AG
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37154 Northeim / GERMANY
Phone +49-5551-908907-0
Fax +49-5551-908907-9
Homepage www.tribodyn.ag
E-mail info@tribodyn.ag

Address enquiries to

Technical information info@tribodyn.ag
Safety Data Sheet sdb@chemiebuero.de

1.4 Emergency phone

Advisory body +49 (0)89-19240 (24h) (english)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

2.1.1 Classification according to Regulation (EC) No 1272/2008 [CLP]

see SECTION 16

2.1.2 Classification according to Regulation 67/548/EEC or 1999/45/EC

T, toxic for reproduction category 2 - R 60: May impair fertility.
T, toxic for reproduction category 2 - R 61: May cause harm to the unborn child.

2.2 Label elements

The product is classified and required to be labelled in accordance with EC-Directives

Labelling according to Regulation 67/548/EEC or 1999/45/EC

Hazard symbols



Toxic

Contains:

Diboron trioxide

R-phrases

R 60: May impair fertility.
R 61: May cause harm to the unborn child.

S-phrases

S 53: Avoid exposure - obtain special instructions before use.
S 45: In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Special labelling

Restricted to professional users.

2.3 Other hazards

Physico-chemical hazards

No particular hazards known.

Human health dangers

Frequent persistent contact with the skin can cause skin irritation.
Danger of serious damage to health by prolonged exposure through inhalation.

Environmental hazards

Does not contain any PBT or vPvB substances.

Other hazards

Further hazards were not determined with the current level of knowledge.

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SECTION 3: Composition / Information on ingredients

Product-type:

The product is a mixture.

Range [%]	Substance
10 - 25	Diboron trioxide
	CAS: 1303-86-2, EINECS/ELINCS: 215-125-8, EU-INDEX: 005-008-00-8, ECB-Nr.: 01-2119486655-24-xxxx
	GHS/CLP: Repr. 1B: H360FD
	EEC: T, R 60-61
< 5	Silicon dioxide
	CAS: 7631-86-9, EINECS/ELINCS: 231-545-4
	GHS/CLP: STOT RE 2: H373
	EEC: Xn, R 48/20

Comment on component parts

SVHC (Candidate List of Substances of Very High Concern for authorisation) \geq 0,1%
CAS 1303-86-2 - Diboron trioxide
For full text of H-statements and R-phrases: see SECTION 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General information

Take off contaminated clothing and wash before reuse.

Inhalation

Ensure supply of fresh air.
In the event of symptoms seek for medical treatment.

Skin contact

In case of contact with skin wash off immediately with soap and water.
Consult a doctor if skin irritation persists.

Eye contact

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.

Ingestion

Rinse out mouth and give plenty of water to drink.
Seek medical advice immediately.

4.2 Most important symptoms and effects, both acute and delayed

None known.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media

Product itself is non-combustible. Fire extinguishing method of surrounding areas must be considered.

Extinguishing media that must not be used

Full water jet.

5.2 Special hazards arising from the substance or mixture

Unknown risk of formation of toxic pyrolysis products.
Metal oxides.

5.3 Advice for firefighters

Use self-contained breathing apparatus.
Fire residues and contaminated firefighting water must be disposed of in accordance within the local regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Avoid dust formation.
Ensure adequate ventilation.
Use personal protective equipment (protective gloves, safety glasses, protective clothing).

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6.2 Environmental precautions

Do not discharge into the drains/surface waters/groundwater.

6.3 Methods and material for containment and cleaning up

Take up mechanically.

Avoid raising dust.

Dispose of absorbed material in accordance within the regulations.

6.4 Reference to other sections

See SECTION 8+13

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Avoid the formation and deposition of dust.

Provide vacuuming if dust raised.

Dust deposits that cannot be avoided must be taken up regularly.

Do not eat, drink, smoke or take drugs at work.

After worktime and before work breaks the affected skin areas must be thoroughly cleaned.

Take off contaminated clothing and wash before reuse.

Use barrier skin cream.

7.2 Conditions for safe storage, including any incompatibilities

Keep only in original container.

Prevent penetration into the ground.

Do not store together with food and animal food/diet.

Store in a dry place.

Keep container tightly closed.

Keep under lock and key. Should only be accessible to specialists or people authorized by them.

7.3 Specific end use(s)

See product use, SECTION 1.2

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SECTION 8: Exposure controls / personal protection

8.1 Control parameters

Ingredients with occupational exposure limits to be monitored (GB)

Range [%]	Substance
10 - 25	Diboron trioxide
	CAS: 1303-86-2, EINECS/ELINCS: 215-125-8, EU-INDEX: 005-008-00-8, ECB-Nr.: 01-2119486655-24-xxxx
	Long-term exposure: 10 mg/m ³
	Short-term exposure (15-minute): 20 mg/m ³
> 70	Calcium carbonate
	CAS: 471-34-1, EINECS/ELINCS: 207-439-9
	Long-term exposure: 10 mg/m ³ , inhalable dust
< 5	Silicon dioxide
	CAS: 7631-86-9, EINECS/ELINCS: 231-545-4
	Long-term exposure: 6 mg/m ³ , total inhalable dust
< 5	Magnesiumcarbonat
	CAS: 546-93-0, EINECS/ELINCS: 208-915-9
	Long-term exposure: 10 mg/m ³ , inhalable dust; respirable dust: TWA=4 mg/m ³

DNEL

Range [%]	Substance
10 - 25	Diboron trioxide, CAS: 1303-86-2
	Industrial, dermal, Long-term - systemic effects: 4800 mg/day B.
	Industrial, inhalative, Long-term - systemic effects: 1,45 mg/m ³ B.
	general population, dermal, Long-term - systemic effects: 0,17 mg/kg bw/day B.
	general population, oral, Long-term - systemic effects: 0,17 mg/kg bw/day B.

PNEC

Range [%]	Substance
10 - 25	Diboron trioxide, CAS: 1303-86-2
	sewage treatment plants (STP), 1,75 mg B/l.
	sediment (marine water), 1,8 mg B/kg.
	sediment (fresh water), 1,8 mg B/kg.
	marine water, 1,35 mg B/l.
	fresh water, 1,35 mg B/l.

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8.2 Exposure controls

Additional advice on system design	Ensure adequate ventilation on workstation. To pay attention to dust limit value (ACGIH-2011: 10 mg/m ³ particle inhalable; 3 mg/m ³ particle respirable).
Eye protection	safety glasses
Hand protection	Nitrile rubber, >120 min (EN 374). The details concerned are recommendations. Please contact the glove supplier for further information.
Skin protection	Protective clothing.
Other	Avoid contact with eyes and skin. Do not inhale dust. Personal protective equipment should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled. The resistance of these equipments to chemicals should be ascertained with the respective supplier. It is essential for pregnant women to avoid inhaling the product and not to let it come in contact with the skin.
Respiratory protection	Respiratory protection in the case of dust formation. Short term: filter apparatus, filter P3.
Thermal hazards	none
Delimitation and monitoring of the environmental exposition	Protect the environment by applying appropriate control measures to prevent or limit emissions.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Form	Powder
Color	grey beige yellow
Odor	odourless
Odour threshold	not applicable
pH-value	not applicable
pH-value [1%]	not determined
Boiling point [°C]	not applicable
Flash point [°C]	not applicable
Flammability [°C]	not applicable
Lower explosion limit	not applicable
Upper explosion limit	not applicable
Oxidizing properties	no
Vapour pressure/gas pressure [kPa]	not applicable
Density [g/ml]	not determined
Bulk density [kg/m³]	not determined
Solubility in water	partially soluble
Partition coefficient [n-octanol/water]	not determined
Viscosity	not applicable
Relative vapour density determined in air	not applicable
Evaporation speed	not applicable
Melting point [°C]	not determined
Autoignition temperature [°C]	not applicable
Decomposition temperature [°C]	not determined

9.2 Other information

none

SECTION 10: Stability and reactivity

10.1 Reactivity

No dangerous reactions known if used as directed.

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10.2 Chemical stability

The product is stable under standard conditions.

10.3 Possibility of hazardous reactions

Reactions with strong oxidizing agents.

10.4 Conditions to avoid

See SECTION 7.2.

10.5 Incompatible materials

Oxidizing agent

10.6 Hazardous decomposition products

No hazardous decomposition products known.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Range [%]	Substance
10 - 25	Diboron trioxide, CAS: 1303-86-2
	LD50, dermal, Rabbit: > 2000 mg/kg.
	LD50, oral, Rat: 1970 - 2100 mg/kg.

Serious eye damage/irritation	not determined
Skin corrosion/irritation	not determined
Respiratory or skin sensitisation	not determined
Specific target organ toxicity — single exposure	not determined
Specific target organ toxicity — repeated exposure	not determined
Mutagenicity	not determined
Reproduction toxicity	not determined
Carcinogenicity	not determined
General remarks	

The product was classified on the basis of the calculation procedure of the preparation directive.

Toxicological data of complete product are not available.

The toxicity data listed pertaining to the ingredients are intended for those working in the medicinal professions, experts for occupational health and safety and toxicologists. The toxicity data pertaining to the ingredients were supplied by the manufacturers of raw materials.

SECTION 12: Ecological information

12.1 Toxicity

Range [%]	Substance
10 - 25	Diboron trioxide, CAS: 1303-86-2
	LC50, (96h), Pimephales promelas: 79,7 mg/l B.
	EC50, (48h), Daphnia magna: 133 mg/l B.
	EC50, (72h), Pseudokirchneriella subcapitata: 40 mg/l B.

12.2 Persistence and degradability

Behaviour in environment compartments	not determined
Behaviour in sewage plant	not determined
Biological degradability	not applicable

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12.3 Bioaccumulative potential

not applicable

12.4 Mobility in soil

not applicable

12.5 Results of PBT and vPvB assessment

Based on all available information not to be classified as PBT or vPvB respectively.

12.6 Other adverse effects

No classification on the basis of the calculation procedure of the preparation directive.

The toxicity data pertaining to the ingredients were supplied by the manufacturers of raw materials.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Waste material must be disposed of in accordance with the Directive on waste 2008/98/EC as well as other national and local regulations. It is not possible to determine a waste code for this product in accordance with the European Waste Catalogue (EWC) since it is only possible to classify it according to how it is used by the customer. The waste code is to be determined within the EU in liaison with the waste-disposal operator.

Product

For recycling, consult manufacturer.
Dispose of as hazardous waste.

Waste no. (recommended)

020108*

Contaminated packaging

Uncontaminated packaging may be taken for recycling.
Packaging that cannot be cleaned should be disposed of as for product.

Waste no. (recommended)

150110*

SECTION 14: Transport information

14.1 UN number

See SECTION 14.2 in accordance with UN shipping name

14.2 UN proper shipping name

Transport by land according to ADR/RID NO DANGEROUS GOODS

Inland navigation (ADN) NO DANGEROUS GOODS

Marine transport in accordance with IMDG NOT CLASSIFIED AS "DANGEROUS GOODS"

Air transport in accordance with IATA NOT CLASSIFIED AS "DANGEROUS GOODS"

14.3 Transport hazard class(es)

See SECTION 14.2 in accordance with UN shipping name

14.4 Packing group

See SECTION 14.2 in accordance with UN shipping name

14.5 Environmental hazards

See SECTION 14.2 in accordance with UN shipping name

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14.6 Special precautions for user

Relevant information under SECTION 6 to 8.

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

not applicable

SECTION 15: Regulatory information

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

EEC-REGULATIONS 1967/548 (1999/45); 1991/689 (2001/118); 1999/13; 2004/42; 648/2004; 1907/2006 (Reach); 1272/2008; 75/324/EEC (2008/47/EC); 453/2010/EC

TRANSPORT-REGULATIONS DOT-Classification, ADR (2013); IMDG-Code (2013, 36. Amdt.); IATA-DGR (2013).

NATIONAL REGULATIONS (GB): EH40/2005 Workplace exposure limits (Second edition, published December 2011). CHIP 3/ CHIP 4

- **Observe employment restrictions for people** Observe employment restrictions for mothers-to-be and nursing mothers. Observe employment restrictions for young people.

- **VOC (1999/13/CE)** 0%

15.2 Chemical safety assessment

not applicable

SECTION 16: Other information

16.1 Classification according to Regulation (EC) No 1272/2008 [CLP]

Hazard pictograms



Signal word

DANGER

Repr. 1B: H360FD May damage fertility. May damage the unborn child.

16.2 R-phrases (SECTION 3)

R 60: May impair fertility.

R 61: May cause harm to the unborn child.

R 48/20: Harmful - danger of serious damage to health by prolonged exposure through inhalation.

16.3 Hazard statements (SECTION 3)

H373 May cause damage to lung through prolonged or repeated exposure through inhale.
H360FD May damage fertility. May damage the unborn child.

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16.4 Abbreviations and acronyms:

ADR = Accord européen relatif au transport international des marchandises Dangereuses par Route
RID = Règlement concernant le transport international ferroviaire de marchandises dangereuses
ADN = Accord européen relatif au transport international des marchandises dangereuses par voie de navigation intérieure
CAS = Chemical Abstracts Service
CLP = Classification, Labelling and Packaging
DMEL = Derived Minimum Effect Level
DNEL = Derived No Effect Level
EC50 = Median effective concentration
ECB = European Chemicals Bureau
EEC = European Economic Community
EINECS = European Inventory of Existing Commercial Chemical Substances
ELINCS = European List of Notified Chemical Substances
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC-Code = International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
IC50 = Inhibition concentration, 50%
IMDG = International Maritime Code for Dangerous Goods
IUCLID = International Uniform Chemical Information Database
LC50 = Lethal concentration, 50%
LD50 = Median lethal dose
MARPOL = International Convention for the Prevention of Marine Pollution from Ships
PBT = Persistent, Bioaccumulative and Toxic substance
PNEC = Predicted No-Effect Concentration
REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals
TLV@/TWA = Threshold limit value – time-weighted average
TLV@STEL = Threshold limit value – short-time exposure limit
VOC = Volatile Organic Compounds
vPvB = very Persistent and very Bioaccumulative

16.5 Other information

Modified position

none

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