

## Cal Boron Liquid

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

#### 1.1. Product identifier

Product form : Mixture  
Trade name : Van Iperen Cal Boron Liquid

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

##### 1.2.1. Relevant identified uses

Main use category : Professional use  
Use of the substance/mixture : Fertilizer

##### 1.2.2. Uses advised against

Not identified

#### 1.3. Details of the supplier of the safety data sheet

Van Iperen International BV  
Smidsweg 24  
3273 LK Westmaas - Nederland  
T +31 (0) 186 578 888 - F +31 (0) 186 573 452  
[info@iperen.com](mailto:info@iperen.com) - [www.vaniperen.com](http://www.vaniperen.com)

#### 1.4. Emergency telephone number

Country	Official advisory body	Address	Emergency number
Netherlands	Nationaal Vergiftigingen Informatie Centrum National Institute for Public Health and the Environment, NB this service is only available to health professionals	Huispostnummer B.00.118, PO Box 85500 3508 GA Utrecht	+31 30 274 88 88

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

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

Acute Tox. 4 (Oral) H302  
Eye Dam. 1 H318

Full text of H-phrases: see section 16

##### Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

Xn; R22  
Xi; R41

Full text of R-phrases: see section 16

##### Adverse physicochemical, human health and environmental effects

No additional information available

#### 2.2. Label elements

##### Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :



CLP Signal word : Danger

Hazardous ingredients : Calcium nitrate, Boric acid

Hazard statements (CLP) : H302 - Harmful if swallowed  
H318 - Causes serious eye damage

Precautionary statements (CLP) : P264 - Wash hands thoroughly after handling  
P270 - Do not eat, drink or smoke when using this product  
P280 - Wear protective gloves, protective clothing, eye protection  
P301+P312 - IF SWALLOWED: Call a doctor if you feel unwell  
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

#### 2.3. Other hazards

This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII

This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

## Calboron

### SECTION 3: Composition/information on ingredients

#### 3.1. Substance

Not applicable

#### 3.2. Mixture

Name	Product identifier	%	Classification according to Directive 67/548/EEC
Calcium nitrate	(CAS No) 10124-37-5 (EC no) 233-332-1 (REACH-no) 01-2119495093-35	45 - 55	O; R8 Xn; R22 Xi; R41
Boric acid substance listed as REACH Candidate	(CAS No) 10043-35-3 (EC no) 233-139-2 (EC index no) 005-007-00-2 (REACH-no) 01-2119486683-25	< 1	Repr.Cat.2; R60 Repr.Cat.2; R61
Name	Product identifier	Specific concentration limits	
Boric acid	(CAS No) 10043-35-3 (EC no) 233-139-2 (EC index no) 005-007-00-2 (REACH-no) 01-2119486683-25	(C >= 5,5) Repr.Cat.2; R60-61	
Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Calcium nitrate	(CAS No) 10124-37-5 (EC no) 233-332-1 (REACH-no) 01-2119495093-35	45 - 55	Ox. Sol. 3, H272 Acute Tox. 4 (Oral), H302 Eye Dam. 1, H318
Boric acid substance listed as REACH Candidate	(CAS No) 10043-35-3 (EC no) 233-139-2 (EC index no) 005-007-00-2 (REACH-no) 01-2119486683-25	< 1	Repr. 1B, H360FD
Name	Product identifier	Specific concentration limits	
Boric acid	(CAS No) 10043-35-3 (EC no) 233-139-2 (EC index no) 005-007-00-2 (REACH-no) 01-2119486683-25	(C >= 5,5) Repr. 1B, H360FD	

Full text of R- and H-phrases: see section 16

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

First-aid measures general

- : Check the vital functions.  
Unconscious: maintain adequate airway and respiration.  
Respiratory arrest: artificial respiration or oxygen.  
Cardiac arrest: perform resuscitation.  
Victim conscious with laboured breathing: half-seated.  
Victim in shock: on his back with legs slightly raised.  
Vomiting: prevent asphyxia/aspiration pneumonia.  
Prevent cooling by covering the victim (no warming up).  
Keep watching the victim. Give psychological aid.  
Keep the victim calm, avoid physical strain.  
Depending on the victim's condition: doctor/hospital

First-aid measures after inhalation

- : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Respiratory problems: consult a doctor/medical service.

First-aid measures after skin contact

- : Rinse with water. Soap may be used. Remove all contaminated clothing and footwear. Take victim to a doctor if irritation persists. Wash contaminated clothing before reuse.

First-aid measures after eye contact

- : Immediately flush eyes with plenty of water (> 15min), occasionally lifting the upper and lower eyelids. Remove contact lenses, if present and easy to do. Continue rinsing. Take victim to an ophthalmologist.

First-aid measures after ingestion

- : Consult a doctor/medical service if you feel unwell. Rinse mouth with water. Immediately after ingestion: give lots of water to drink. If swallowed, do NOT induce vomiting. Do not give an unconscious person anything to drink.

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

Symptoms/injuries after eye contact

- : Redness of the eye tissue. Irritation of the eye tissue.

Symptoms/injuries after ingestion

- : Nausea. Abdominal pain. After absorption of high quantities: Methemoglobinemia. Blue/grey discolouration of the skin. Feeling of weakness. Dizziness. Respiratory difficulties.

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

Normally no immediate medical service and special treatment is needed. Follow the advices in chapter 4.1. The product can cause methemoglobinemia.

## Calboron

### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

- Suitable extinguishing media : Use fire extinguishing methods suitable to surrounding conditions. Preferably: water.
- Unsuitable extinguishing media : No unsuitable extinguishing media known.

#### 5.2. Special hazards arising from the substance or mixture

- Fire hazard : Direct fire hazard: Non combustible.
- Explosion hazard : No direct explosion hazard.
- Hazardous decomposition products in case of fire : On heating/burning: release of toxic and corrosive gases/vapours (nitrous vapours)

#### 5.3. Advice for firefighters

- Precautionary measures fire : Exposure to fire/heat: keep upwind, consider evacuation and have neighbourhood close doors and windows.
- Firefighting instructions : Dilute toxic gases with water spray.
- Protection during firefighting : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Ensure adequate air ventilation. Do not get in eyes, on skin, or on clothing.  
Keep away from naked flames/heat.

##### 6.1.1. For non-emergency personnel

- Protective equipment : Wear protective gloves/protective clothing/eye protection as advised in section 8.
- Emergency procedures : Mark the danger area. No naked flames. Keep containers closed. Wash contaminated clothes.  
In case of hazardous reactions: keep upwind. In case of reactivity hazard: consider evacuation.

##### 6.1.2. For emergency responders

- Protective equipment : Wear protective gloves/protective clothing/eye protection as advised in section 8.

#### 6.2. Environmental precautions

Stop leaks if possible. Dam up the liquid spill. Prevent spreading in sewers. Prevent soil and water pollution. Contain leaking substance, pump over in suitable containers. Turn leaking containers leak-side up to prevent the escape of liquid. Notify authorities if product enters sewers or public waters.

#### 6.3. Methods and material for containment and cleaning up

- For containment : Any spillage should be cleaned up immediately. Collect spill in closed and suitable containers for disposal. Take up rest of liquid spill into absorbent material sand, earth, vermiculite.  
Scoop absorbed substance into closing containers.
- Methods for cleaning up : Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling.
- Other information : Dispose the product, depending on the degree and type of contamination, either as fertilizer or in an authorized waste disposal site.

#### 6.4. Reference to other sections

See section 1 for emergency contact information.

See section 8 for information on appropriate personal protective equipment.

See section 13 for additional waste treatment information

## Calboron

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

- Precautions for safe handling : Use sufficient ventilation. Do not get in eyes, on skin, or on clothing. Wear protective gloves/protective clothing/eye protection as advised in section 8. Care for eyewashstations at the workplace. Avoid splashing.
- Hygiene measures : Do not eat, drink or smoke during use. Always wash hands after handling the product. Remove contaminated clothing and protective equipment before entering eating areas. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Do not discharge the waste into the drain.

#### 7.2. Conditions for safe storage, including any incompatibilities

- Storage conditions : Keep preferably in the original container.
- Incompatible materials : Keep away from iron. Do not use with copper/aluminium/zinc - risk of corrosion.
- Storage temperature : -5 - 30 °C
- Heat and ignition sources : Keep substance away from: heat sources.
- Prohibitions on mixed storage : Keep substance away from: combustible materials, reducing agents, (strong) acids, (strong) bases, organic materials, metals.
- Storage area : Store in dry, cool, well-ventilated area. Keep out of direct sunlight. Provide for a tub to collect spills.
- Special rules on packaging : Meets the legal requirements. correctly labelled. closing. Secure fragile packagings in solid containers.
- Packaging materials : Suitable material: glass, synthetic material, stainless steel  
Material to avoid: aluminium, iron, copper

#### 7.3. Specific end use(s)

Fertilizers.

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

Calcium nitrate, anhydrous (10124-37-5)	
DNEL/DMEL (Workers)	
Long-term - local effects, dermal	13,9 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	98 mg/m <sup>3</sup>
DNEL/DMEL (General population)	
Long-term - systemic effects, oral	8,33 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	29 mg/m <sup>3</sup>
Long-term - systemic effects, dermal	8,33 mg/kg bodyweight/day
PNEC (Water)	
PNEC aqua (freshwater)	0,45 mg/l
PNEC aqua (marine water)	0,045 mg/l
PNEC aqua (intermittent, freshwater)	4,5 mg/l
PNEC (STP)	
PNEC sewage treatment plant	18 mg/l

Boric acid (10043-35-3)	
DNEL/DMEL (Workers)	
Long-term - systemic effects, dermal	392 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	8,3 mg/m <sup>3</sup>
DNEL/DMEL (General population)	
Acute - systemic effects, oral	0,98 mg/kg bodyweight
Long-term - systemic effects, oral	0,98 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	4,15 mg/m <sup>3</sup>
Long-term - systemic effects, dermal	196 mg/kg bodyweight/day

## Calboron

### SECTION 8: Exposure controls/personal protection (continue)

#### 8.1. Control parameters

Boric acid (10043-35-3)	
PNEC (Water)	
PNEC aqua (freshwater)	2,02 mg/l (expressed as element)
PNEC aqua (marine water)	2,02 mg/l (expressed as element)
PNEC aqua (intermittent, freshwater)	9,1 mg/l
PNEC (Sediment)	
PNEC sediment (freshwater)	1,8 mg/kg dwt
PNEC sediment (marine water)	1,8 mg/kg dwt
PNEC (Soil)	
PNEC soil	5,4 mg/kg dwt (expressed as element)
PNEC (STP)	
PNEC sewage treatment plant	10 mg/l

#### 8.2. Exposure controls

Appropriate engineering controls

: No particular/specific measures required.  
Good practice advice: Ensure good ventilation of the work station. Care for eyewashstations at the workplace.

Personal protective equipment

: Protective clothing. Gloves. Safety glasses.



Hand protection

: Gloves.  
Good resistance gives: Nitrile rubber (NBR). Permeation time: minimum >480min long term exposure; material / thickness [mm]: 0.38 mm

Material selection gloves

: Take advice to your gloves' supplier. Replace damaged gloves

Eye protection

: Safety glasses

Skin and body protection

: Normal working clothes are suitable

Respiratory protection

: Ensure adequate air ventilation. Mist formation: aerosol mask with filter type P2

Environmental exposure controls

: In some cases proces modifications will be necessary to reduce emissions to acceptable levels. Emissions from ventilation or work process equipment should be checked to ensure they comply with legislation.

### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Liquid.
Colour	: Colourless-yellow.
Odour	: Characteristic.
Odour threshold	: No data available
pH	: 4 - 5
Crystallization temperature	: < -5 °C
Boiling point	: ± 100 °C
Flash point	: > 100 °C
Vapour pressure	: +/- 2300 Pa (as water)
Density	: 1,50 kg/l (@25°C)
Solubility	: Soluble in water. Water: complete
Log Pow	: No data available
Decomposition temperature	: No data available
Explosive properties	: Not explosive.
Oxidising properties	: Not oxidising.

#### 9.2. Other information

No additional information available

## Calboron

### SECTION 10: Stability and reactivity

#### 10.1. Reactivity

Stable under use and storage conditions as recommended in section 7.

#### 10.2. Chemical stability

The product is stable at normal handling and storage conditions.

#### 10.3. Possibility of hazardous reactions

Thermal decomposition can lead to the escape of irritating gases and vapours (oxides of nitrogen).  
Decontamination with reducing agents or strong acids can cause formation of toxic gases (oxides of nitrogen). It can enhance combustion of other substances.

#### 10.4. Conditions to avoid

Avoid high temperatures. Temperatures lower than -10°C. Contamination with combustible materials.

#### 10.5. Incompatible materials

May be corrosive to some metals. Keep substance away from: reducing agents, combustible materials.

#### 10.6. Hazardous decomposition products

On heating/burning: release of toxic and corrosive gases/vapours (nitrous vapours).

### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects

Acute toxicity : Oral: Harmful if swallowed.

Calboron	
ATE (oral)	990,099 mg/kg bodyweight

Calcium nitrate, anhydrous (10124-37-5)	
LD50 oral rat	300 - 2000 mg/kg bodyweight (OECD 423)
LD50 dermal rat	> 2000 mg/kg bodyweight (OECD 402 with potassium pentacalcium nitrate decahydrate)
LC50 inhalation rat (mg/l)	(no data, low vapour pressure)
ATE (oral)	500 mg/kg

Boric acid (10043-35-3)	
LD50 oral rat	2660 mg/kg (Rat; OECD 401: Acute Oral Toxicity; Literature study; >2600 mg/kg bodyweight; Rat; Experimental value)
LD50 dermal rabbit	> 2000 mg/kg Rabbit; Experimental value; FIFRA (40 CFR)

Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Causes serious eye damage.
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified Based on available data, the classification criteria are not met
Reproductive toxicity	: Not classified
Specific target organ toxicity (single exposure)	: Not classified Based on available data, the classification criteria are not met
Specific target organ toxicity (repeated exposure)	: Not classified Based on available data, the classification criteria are not met

Calcium nitrate, anhydrous (10124-37-5)	
NOAEL (subacute, oral, animal/male, 28 days)	150 mg/kg bodyweight (OECD 407, EU B.7. Nitcal-/ K (potassium pentacalcium nitrate decahydrate)

Aspiration hazard : Not classified

## Calboron

### SECTION 12: Ecological information

#### 12.1. Toxicity

Ecology - general	: Classification concerning the environment: not applicable.
Ecology - water	: Mild water pollutant (surface water) Ground water pollutant For Flanders: maximum concentration in drinking water: 270 mg/l (calcium)(M.B. 28/1/2003) Maximum concentration in drinking water: 50 mg/l (nitrate) (Directive 98/83/EC) Not harmful to fishes (LC50(96h) >1000 mg/l) May cause eutrophication

<b>Calcium nitrate (10124-37-5)</b>	
LC50 fish 1	1378 mg/l 96-h (OECD 203, with potassium nitrate)
EC50 Daphnia 1	490 mg/l 48-h (no guideline followed, fresh water, with potassium nitrate)

<b>Boric acid (10043-35-3)</b>	
LC50 fish 1	100 ppm (96 h; Salmo gairdneri (Oncorhynchus mykiss); Soft water)
EC50 Daphnia 1	658 - 875 mg/l (48 h; Daphnia magna)
LC50 fish 2	79 ppm (96 h; Salmo gairdneri (Oncorhynchus mykiss); Hard water)
EC50 Daphnia 2	19,7 mg/l (336 h; Daphnia magna)
TLM fish 1	1800 ppm (24 h; Gambusia affinis)
Threshold limit algae 1	5 mg/l (672 h; Elodea sp.)
Threshold limit algae 2	0.4 - 0.8,336 h; Chlorella sp.; Growth

#### 12.2. Persistence and degradability

<b>Calboron</b>	
Persistence and degradability	Biodegradable in the soil.

<b>Calcium nitrate (10124-37-5)</b>	
Persistence and degradability	Biodegradable in the soil.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable
Biodegradation	The average biodegradation rate in a wastewater plant at 20 °C (dissolved solid/day): 70 g N/kg

<b>Boric acid (10043-35-3)</b>	
Persistence and degradability	Biodegradability: not applicable. Biodegradability in soil: not applicable. No (test)data on mobility of the substance available.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

#### 12.3. Bioaccumulative potential

<b>Calboron</b>	
Bioaccumulative potential	Slightly or not bioaccumulative.

<b>Calcium nitrate (10124-37-5)</b>	
Log Kow	Not relevant as the substance is inorganic, considered to be low (based on high water solubility)
Bioaccumulative potential	Not bioaccumulative.

<b>Boric acid (10043-35-3)</b>	
BCF fish 1	0 (Salmo gairdneri (Oncorhynchus mykiss); Chronic)
BCF fish 2	< 0,1 (60 days; Oncorhynchus tshawytscha; Fresh weight)
Log Pow	-1,09 (Experimental value; EU Method A.8: Partition Coefficient; 22 °C)
Log Kow	-1,09
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

## Calboron

### SECTION 12: Ecological information

#### 12.4. Mobility in soil

<b>Calboron</b>	
Ecology - soil	Soluble in water. Low potential for adsorption (based on substance properties).
<b>Calcium nitrate (10124-37-5)</b>	
Ecology - soil	Soluble in water. Low potential for adsorption (based on substance properties).
<b>Boric acid (10043-35-3)</b>	
Ecology - soil	May be harmful to plant growth, blooming and fruit formation.

#### 12.5. Results of PBT and vPvB assessment

<b>Calboron</b>	
This mixture does not meet the PBT criteria of REACH regulation, annex XIII	
This mixture does not meet the vPvB criteria of REACH regulation, annex XIII	

#### 12.6. Other adverse effects

Other information : No other effects known.

### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

European List of Waste (LoW) code	: 06 03 14 - solid salts and solutions other than those mentioned in 06 03 11 and 06 03 13 <i>Depending on branch of industry and production process, also other EURAL codes may be applicable</i>
Regional legislation (waste)	: Disposal must be done according to official regulations.
Waste treatment methods	: Dispose the product, depending on the degree and type of contamination, either as fertilizer or in an authorized waste disposal site. Empty and rinsed containers can be disposed as non-hazardous material or be returned for recycling.
Waste disposal recommendations	: Do not discharge into drains or the environment. Care should be taken when handling emptied containers that have not been cleaned or rinsed out.

### SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

#### 14.1. UN number

Not regulated for transport

#### 14.2. UN proper shipping name

Proper Shipping Name : Not applicable

#### 14.3. Transport hazard class(es)

Transport hazard class(es) : Not applicable

#### 14.4. Packing group

Packing group : Not applicable

#### 14.5. Environmental hazards

Dangerous for the environment : No  
Marine pollutant : No  
Other information : No supplementary information available

#### 14.6. Special precautions for user

Not applicable

#### 14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

## Calboron

### SECTION 15: Regulatory information

#### 15.1.1. EU-Regulations

Contains no substances with Annex XVII restrictions

Contains a substance on the REACH candidate list in concentration  $\geq 0.1\%$  or with a lower specific limit: Boric acid (EC 233-139-2)

Contains no REACH Annex XIV substances

#### 15.1.2. National regulations

No additional information available

#### 15.2. Chemical safety assessment

Chemical safety assessments for substances in this preparation were carried out

### SECTION 16: Other information

Version	: 1.1
Revision date	: 17/03/2015
Date of issue	: 29/06/2012
Supersedes	: 29/06/2012
Indication of changes	: Refer table below.

SDS changed items			
3	Composition/information on ingredients	Modified	
9.1	Other properties	Modified	Density and pH

Abbreviations and acronyms:

REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
DNEL	Derived-No Effect Level
DMEL	Derived Minimal Effect level
PNEC	Predicted No-Effect Concentration

Data sources : BIG-database  
ECHA Website: Information on Registered Substances  
Handbook of Chemistry and Physics CRC Press Inc  
Information from suppliers.

Training advice : Before using/handling the product one must read carefully the MSDS. Normal use of this product shall imply use in accordance with the instructions on the packaging.

Full text of R-, H- and EUH-phrases:

Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Ox. Sol. 3	Oxidising Solids, Category 3
Repr. 1B	Reproductive toxicity, Category 1B
H272	May intensify fire; oxidiser
H302	Harmful if swallowed
H318	Causes serious eye damage
H360FD	May damage fertility. May damage the unborn child
R22	Harmful if swallowed
R41	Risk of serious damage to eyes
R60	May impair fertility
R61	May cause harm to the unborn child
R8	Contact with combustible material may cause fire
O	Oxidising
Xi	Irritant
Xn	Harmful

#### Company disclaimer

*The information provided in this safety data sheet is given in good faith and belief in its accuracy based on our knowledge of the substance/preparation concerned at the date of publication. It does not imply the acceptance of any legal liability or responsibility whatsoever by the company for the consequences of its use or misuse in any particular circumstances, also given by our standard terms and conditions as filed on January 13, 2012 at the District Court of Dordrecht in which liability is excluded or limited.*