



# SAFETY DATA SHEET

## Valagro Brexil Ca

Date of Issue: April 2016

### 1. IDENTIFICATION

**Product Identifier:** Valagro Brexil Ca

**Other Means of Identification:** None

**Recommended Use of the Chemical and Restrictions on Use:** Fertiliser

**Details of Manufacturer or Importer:** Campbells Fertilisers Australasia  
18 Raymond Road, Laverton North, Victoria, 3026  
Phone: (03) 9931 2211  
Fax: (03) 9931 2201  
[www.campbellsfert.com.au](http://www.campbellsfert.com.au)

**Emergency Telephone Number:** (03) 9931 2211 (business hours only 8.30 am to 5.00 pm)  
0418 350 726 (after business hours)

### 2. HAZARD(S) IDENTIFICATION

**GHS Classification:** Not classified as hazardous according to the GHS

**ADG Classification:** Based on available information, not classified as a Dangerous Good under the Australian Code for the Transport of Dangerous Goods by Road and Rail, 7<sup>th</sup> Edition

**SUSMP Classification:** Exempt from Poison Scheduling

### 3. COMPOSITION AND INFORMATION ON INGREDIENTS

Component:	CAS Number:	Proportion (%w/w):
Disodium octaborate	-	1-3

### 4. FIRST AID MEASURES

#### Description of Necessary First Aid Measures:

**Inhalation:** Remove casualty to fresh air and keep warm and at rest.

**Skin Contact:** Wash with plenty of soap and water.

**Eye Contact:** Rinse immediately with plenty of water and seek medical advice.

**Ingestion:** Do not under any circumstances induce vomiting. OBTAIN A MEDICAL EXAMINATION IMMEDIATELY.

**First Aid** Ensure washing facilities, including an eyewash, are available and

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**Facilities:** maintained.  
**Advice:** Persons providing first aid must use personal protection equipment (latex gloves and safety glasses).

**Symptoms caused by Exposure:** No data available

### Medical Attention and Special Treatment:

The product contains disodium octaborate and in general medical observation is required in case of ingestion of less than 5 g of disodium octaborate tetrahydrate. For greater quantities, maintain proper function of the kidneys and give fluids. Gastric lavage is recommended for symptomatic patients only. Hemodialysis should be reserved for massive acute ingestion or for patients with renal failure. Analyses of urine and blood are only useful for documenting exposure and should not be used to evaluate severity of poisoning or to guide treatment.

## 5. FIRE FIGHTING MEASURES

**Suitable Extinguishing Equipment:** Water, carbon dioxide (CO<sub>2</sub>)

**Specific Hazards arising from the Chemical:** Do not inhale explosion and combustion gases. Burning produces smoke containing calcium oxide, boron oxide, carbon oxides, nitrogen oxides, sulfur oxides, ammonia.

**Special Protective Equipment and Precautions for Fire Fighters:** Use suitable breathing apparatus. Collect contaminated fire extinguishing water separately. This must not be discharged into drains. If the product has escaped into a water course, into the drainage system, or has contaminated the ground or vegetation, notify the competent authorities. Move undamaged containers from immediate hazard area if it can be done safely. Use Protective clothing for firefighters conforming to European standard EN 469, self-contained breathing apparatus (SCBA), wear full protective suit.

## 6. ACCIDENTAL RELEASE MEASURES

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**Personal Precautions, Protective Equipment and Emergency Procedures:**

For non-emergency personnel:

- No action shall be taken involving any personal risk or without suitable training.
- Wear protective clothes giving total skin protection, latex gloves and safety glasses
- Keep people not involved in the emergency intervention away from the affected area.
- Ensure adequate ventilation
- Alert the internal emergency team

For emergency responders:

- Wear protective clothes giving total skin protection, latex gloves and safety glasses
- See protective measures in section 8
- Avoid dust generation. Dusts at sufficient concentrations can form explosive mixtures with air
- Avoid any accumulation of electrostatic charge which may create a hazardous condition and cause an ignition.
- Product layer on hot surface might cause glowing or auto-ignition
- Ensure adequate ventilation, move people into a safe place

**Environmental Precautions:**

Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains. Dilute with water and retain contaminated wash water and dispose of in approved landfill. If possible, collect in clean plastic labeled containers and reuse as fertilizer. In case of gas escape or entry into waterways, soil or drains, inform the responsible authorities. Suitable material for taking up: absorbing material, soil, sand.

**Methods and Materials for Containment and Cleaning Up:**

Wash with plenty of water. Retain contaminated wash water and dispose of in approved landfill. If possible, collect in clean plastic labeled containers and reuse as fertilizer.

<b>7. HANDLING AND STORAGE</b>
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**Precautions for Safe Handling:**

Avoid contact with skin and eyes, inhalation of vapours and mists. Do not use empty containers before they have been cleaned. Before transferring product, ensure there are no incompatible material residuals in the containers. Contaminated clothing should be changed before entering eating areas. Do not drink or eat in work areas. See section 8 for recommended protective equipment.

**Conditions for Safe Storage, including any Incompatibilities:**

Keep away from food, drink or feed.  
 Incompatible materials: bases, oxidizing and reducing agents.  
 Adequately ventilate premises. Avoid dust generation.  
 Keep in original plastic packaging in a well-ventilated area, away from moisture, heat sources, and direct sunlight. Dusts at sufficient

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concentrations can form explosive mixtures with air.  
Avoid any accumulation of electrostatic charge

### 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

<b>Exposure Standards:</b>	<p>ACGIH (2003) : recommended value inhalable dust: TLV/TWA: 10 mg/m<sup>3</sup> ACGIH (2003) : recommended value breathable dust: TLV/TWA: 3 mg/m<sup>3</sup></p> <p>- Disodium octaborate EC: 234-541-0 OSHA/PEL (total dust): 15 mg/m<sup>3</sup> OSHA/PEL (respirable dust): 5 mg/m<sup>3</sup> ACGIH TLV (Threshold Limit Value) : 10 mg/m<sup>3</sup></p> <p><u>DNELs (Derived No Effects Level) for workers:</u> Worker-DNEL long-term, inhalation, systemic = 6.92 mg/m<sup>3</sup> or 1.45 mg B/m<sup>3</sup>. Worker-DNEL long-term cutaneous systemic = 22901 mg/day or 4800 mg B/day.</p> <p><u>DNELs (Derived No Effects Level) for the population (consumers):</u> DNEL long-term oral systemic = 0.81 mg/kg or 0.17 mg B/kg bw/day. DNEL long-term, inhalation, systemic = 3.48 mg/m<sup>3</sup> or 0.73 mg B/m<sup>3</sup>. DNEL long-term cutaneous systemic = 164 mg/kg body weight/day or 34.3 mg B/kg bw/day. DNEL long-term, oral, local = 12 mg/m<sup>3</sup> or 2.52 mg B/m<sup>3</sup>.</p> <p><u>PNECs (Predicted No Effect Concentrations):</u> PNEC add, water = 1.35 mg B/L (fresh water and sea water) and 9.1 mg B/L (water with intermittent releases). PNECadd, sediment B = 1.8 mg/kg daily (sediment of freshwater and sea). PNEC soil = 5.4 mg B/kg soil weight daily. PNEC STP (sewage treatment plant - industrial waste water) = 1.75 mg B/L</p>
<b>Biological Monitoring:</b>	Not available.
<b>Control Banding:</b>	Not available.
<b>Engineering Controls:</b>	Use local exhaust ventilation to keep airborne concentrations of dust below permissible exposure levels.
<b>Individual Protection Measures e.g. Personal Protective Equipment (PPE):</b>	<p>Wash hands before breaks and at the end of workday Remove and wash dirty or contaminated clothing. Please observe the usual precautionary measures for handling of chemicals</p> <p><i>Eye and Face Protection:</i> Use close fitting safety goggles according to the standard EN166. Do not use contact lenses.</p> <p><i>Skin Protection:</i> Use protective gloves that provide comprehensive protection e.g.</p>

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neoprene, natural rubber (latex), NBR, according to EN374. Wear protective clothing.

*Respiratory Protection:*

In case of dust formation, use dust mask with P2 filters according to the EN143. Respect the occupational exposure limits.

*Thermal Hazards:*

Thermal decomposition may produce calcium oxide, boron oxide, carbon oxides (COx), nitrogen oxides (NOx), Sulfur oxides (SOx)..

### 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance:</b>	Brown microgranules
<b>Odour:</b>	Not available
<b>Vapour Pressure (mm Hg):</b>	Not available
<b>Apparent Density:</b>	0.5 kg/dm <sup>3</sup>
<b>Boiling Point:</b>	Not available
<b>Freezing/Melting Point:</b>	Not available
<b>Solubility (aqueous solution):</b>	250 g/L at 25°C
<b>Specific Gravity:</b>	Not available
<b>pH:</b>	6.5
<b>Flash Point:</b>	Not available
<b>Flammability (explosive) Limits:</b>	Not available
<b>Auto-Ignition Temperature:</b>	Not available
<b>Octanol/Water Partition Coefficient:</b>	Not available
<b>Conductivity (1%):</b>	0.67 mS/cm 18°C

### 10. STABILITY AND REACTIVITY

<b>Chemical Stability:</b>	Stable under normal conditions of storage and handling
<b>Possibility of Hazardous Reactions:</b>	The product can release gaseous ammonia if in contact with alkaline substances such as lime and hydrogen if in contact with reducing agents. Product layer on hot surface might cause glowing or auto-ignition.
<b>Conditions to Avoid:</b>	Avoid high temperatures which induce thermal decomposition Dusts at sufficient concentrations can form explosive mixtures with air Avoid any accumulation of Electrostatic charge which may create a hazardous condition and cause an ignition.
<b>Incompatible Materials:</b>	The product can release gaseous ammonia if in contact with alkaline substances such as lime and hydrogen if in contact with reducing agents. Avoid contact with oxidants.
<b>Hazardous Decomposition Products:</b>	In case of fire and high temperatures can develop calcium oxide, boron oxide, carbon oxides (COx), nitrogen oxides (NOx), Sulfur oxides (SOx)..

### 11. TOXICOLOGICAL INFORMATION

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The product may have a minimal effect on the health of susceptible individuals. Exposure can occur through inhalation, ingestion or contact with skin and eyes. The product should be handled with caution and in accordance with good industrial hygiene and safety practices.

**Toxicological information of the mixture:** No data available

**Toxicological Information of Main Substances found in Mixture:** Disodium octaborate

<b>Acute Toxicity:</b>	<p><u>Oral:</u> Low acute oral toxicity. LD50 (Lethal dose - lethal doses) (male rat):&gt;2000 mg/kg body weight (Material Test boron trioxide, OECD Guideline 401 (Acute Oral Toxicity)) LD50 (male white rat): 3450 mg/kg (604 mg B/kg body weight (Material Test: Boric acid). LD50 (female white rat): 4080 mg/kg (714 mg B/kg body weight) (Material Test: Boric Acid) <u>Inhalation:</u> Low acute toxicity by inhalation. LD50 (4h) (rat male/female):&gt;2.01 mg/L air (Test equipment: Disodium octaborate tetrahydrate, OECD Guideline 403 (Acute Inhalation Toxicity). LC50 (5h) (rat male/female):&gt;2030 mg/m<sup>3</sup> air (Test equipment: Boric acid). <u>Dermal toxicity:</u> No acute dermal toxicity LD50 (24h) (rabbit male/female):&gt;2000 mg/kg body weight (Material Test: Boric acid, according to FIFRA 40 CFR 163 and OECD Guideline 402 (Acute Dermal Toxicity)). There were no clinical signs or pathological. The Disodium octaborate tetrahydrate has a low absorption through the skin unharmed</p>
<b>Skin Corrosion/Irritation:</b>	<p>Studies on rabbits did not show any irritation. (Material Test: Disodium octaborate tetrahydrate, according to FIFRA (40 CFR 158, 162, 163) and Toxic Substances Control Act (40 CFR 798). Based on the available data, the classification criteria are not met as a skin irritant.</p>
<b>Serious Eye Damage/Irritation:</b>	<p>No evidence of corrosion (FIFRA guidelines (40 CFR 162) and TSCA (40 CFR 798). The test material applied by washing every 24 hours on the eyes of New Zealand white rabbits causes conjunctival irritation and iris. (FIFRA guidelines (40 CFR 162) and TSCA (40 CFR 798). (FIFRA guidelines (40 CFR 162) and TSCA (40 CFR 798). Years of occupational exposure to disodium tetrahydrate octaborate showed no adverse effects on the human eye. Consequently the product is not irritating to eyes in normal use Industrial. Based on the available data, the classification criteria as eye irritant are not met.</p>
<b>Respiratory or Skin Sensitisation:</b>	<p>Not skin sensitizer for guinea pigs, OECD Guideline 406 (Skin Sensitization). Based on the available data, the classification criteria are not met as a sensitizer</p>
<b>Germ Cell Mutagenicity:</b>	<p>The bacterial reverse mutation test (Ames test) was performed on <i>S. typhimurium</i> TA 1535, TA 1537, TA 98 and TA 100. There was no mutagenic activity. (Material Test: Boric acid). Based on the available data, the classification criteria as a mutagen are not met.</p>

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<b>Carcinogenicity:</b>	<p>The test performed according to OECD Guideline 451 B6C3F1 (mice treated in the diet for 103 weeks with Boric acid 0, 2500 or 5000 ppm) showed no evidence of carcinogenicity. Based on the available data, the classification criteria as a carcinogen are not met.</p>
<b>Reproductive Toxicity:</b>	<p>Animal feeding studies in rat, mouse and dog, at high doses, have demonstrated negative effects on fertility and testes.</p> <p>Studies with the chemically related boric acid in the rat, mouse and rabbit, at high doses, demonstrate developmental effects on the fetus, including fetal weight loss and minor skeletal variations.</p> <p>The doses administered were many times in excess of those to which humans would normally be exposed.</p> <p>The exposure tests at 50 and 155 mg Borax Deca Hydrate/kg body weight (equivalent to 5.9 and 17.5 mg B/kg body weight) made of three generations of Sprague-Dawley rats showed no adverse effects on fertility, lactation, litter size, weight or other abnormalities of the unborn.</p> <p>NOAEL (No Observed Adverse Effect Level) for fertility (male rats): 17.5 mg B/kg/day.</p> <p>Rats exposed to doses of 518 mg Borax decahydrate/kg body weight (equivalent to 58.5 mg B/kg body weight) were infertile. Microscopic examination of the testes atrophied of all the males in this group showed no viable sperm. Furthermore, the examination of the ovaries in the female rats, exposed to 58.5 mg B/kg body weight has detected a decreased ovulation in most of the ovaries examined. None of the females exposed to high doses has generated pups as a result of mating with males in the control group.</p> <p>LOAEL (Lowest Observed Adverse Effect Level) for fertility (rat female / male): 58.5 mg B/kg bw/day. The group of male and female rats at high dose (58.5 mg B/kg body weight) showed clinical signs of toxicity such as sleeping rough, scaly tail, respiratory distress and inflamed eyelids.</p> <p>Based on the data obtained from this study it was concluded that the exposure of rats at levels up to 17.5 mg B/kg body weight does not cause adverse reproductive effects.</p> <p>Studies of humans exposed to high boron, have not shown any adverse effects on the developing fetus.</p> <p>The Disodium octaborate tetrahydrate is classified as toxic for reproduction, Repro 1B, H360FD according to the new classification criteria of the EC Regulation 1272/2008 (CLP).</p> <p>Repeated dose toxicity: 2-year feeding studies of Sprague Dawley rats (male / female) exposed to different concentrations of boric acid (0, 33 (5.9) 100 (17.5), 334 (58, 5) mg boric acid (B)/kg body weight daily) showed adverse effects such as: rough coat, hunched posture, fingers swollen, eyes inflamed and bleeding, atrophy testicular, degeneration of the seminiferous tubules, effects observed in animals exposed to the highest levels of boric acid.</p> <p>NOAEL 17.5 mg boron/kg body weight/day LOAEL 58.5 mg boron/kg body weight/day</p> <p>There were no adverse effects in the group exposed to a minimum and medium level.</p>
<b>Specific Target Organ</b>	No data available



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### Toxicity (STOT) -

#### Single Exposure:

**Specific Target Organ** No data available

### Toxicity (STOT) -

#### Repeated Exposure:

**Aspiration Hazard:** No data available

**Symptoms related to the physical, chemical and toxicological properties:** There are no known health effects of the mixture as a whole. In base on the components present:

**Inhalation:** Irritating to nose and throat

**Skin:** Contact with the skin is usually not a problem because the product is minimally absorbed through the skin unharmed.

**Eye:** Non-irritating to eyes in normal use of the product.

**Ingestion:** Gastrointestinal symptoms such as nausea, vomiting and diarrhea

## 12. ECOLOGICAL INFORMATION

**Ecotoxicity:** Adopt good working practices so that the product is not released to the environment. The release of large quantities may affect the parameters of BOD and COD.

### Disodium octaborate:

#### Aquatic compartment

##### *Short-term toxicity to fish:*

Fathead minnow, *Pimephales promelas*: 96-hr LC50 = 79.7 mg B/L (mortality)

##### *Long-term toxicity to fish:*

Fathead minnow, *Pimephales promelas*:

32-d NOEC (No Observed Effect Concentration) = 11.2 mg B/L

32-d LOEC (Lowest Observed Effect Concentration) = 23 mg B/L

##### *Short-term toxicity to aquatic invertebrates:*

Daphnids, *Daphnia magna*: 48-hr LC50 = 133 mg B/L (mortality)

##### *Long-term toxicity to aquatic invertebrates:*

Daphnids, *Daphnia magna*: 21-d LC50 = 34 mg B/L

21-d LOEC = 56 mg B/L

*Hyalella azteca*: 42-d NOEC = 25.9 mg B/L

42-d LOEC = 51.1 mg B/L

##### *Short-term toxicity to algae:*

Green algae, *Pseudokirchneriella subcapitata*: 72-hr EC50 - biomass = 40 mg B/L (mortality)

##### *Long-term toxicity to algae:*

Blue-green algae, *Agmenellum quadruplicatum*: 10-d NOEC  $\geq$  100 mg B/L (growth rate)



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### *Toxicity to microorganisms:*

The study was performed in accordance with OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test). It was found an inhibitory effect on the respiratory rate of microorganisms:

3-hr EC50 = 175 mg B/L  
3-hr EC20 = 112 mg B/L  
3-hr EC10 = 35.4 mg B/L  
3-d NOEC = 17.5 mg B/L

### *Bodies of sediment:*

*Chironomus riparius*: 28-d NOEC = 180 mg B/kg sediment, daily weights (mortality)

28-d LOEC = 320 mg B/kg sediment, daily weights (mortality and emergency)

28-d LD50 = 278 mg B / kg sediment, daily weight (nominal)

### Terrestrial compartment

#### *Toxicity to terrestrial arthropods:*

The study was performed in accordance with ISO 11267 (Inhibition of Reproduction of Collembola by Soil Pollutants) on the *Folsomia candida*, Collembola. The results obtained on artificial soil are:

28-d EC10 = 68.1 mg B/kg body weight (mortality)  
28-d EC10 = 13.8 mg B/kg body weight (reproduction)  
28-d EC50 = 26.1 mg B/kg body weight (reproduction)  
28-d LC50 > 70 mg B/kg body weight

#### *Toxicity to terrestrial plants:*

The studies were performed on different species of plants of the group of Monocotyledonae (as *Allium cepa*) and the Dicotyledonae (as *Brassica rapa*) with the following results:

*Allium cepa*, 7-d NOEC = 56 mg B/kg soil, daily weight (growth in length of the bud) - clay soil.

*Brassica rapa*, 5-d NOEC = 28 mg B/kg soil, daily weight (root growth) - artificial soil

#### *Toxicity to soil microorganisms:*

The study was performed in accordance with OECD Guideline 216 (Soil Microorganisms: Nitrogen Transformation Test) based on the calculation of the rate of nitrification on the basis of the concentration of nitrates in the soil after x days (without taking into account the value of the concentration of nitrates of the day 0) for a number of days. Rate of formation of nitrate:

102-d EC10 = 15.4 mg B/kg soil weight daily (sandy soil)  
102-d EC50 > 17.5 mg B/kg soil weight daily (sandy soil and sandy loam)  
102-d EC10 = 17.2 mg B/kg daily weight soil (sandy loam)

### **Persistence and Degradability:**

The mixture contains ammonium lignosulfate that is a natural biodegradable product. Disodium Octaborate Tetrahydrate decomposes in the environment to natural boron.

### **Bioaccumulative Potential:**

Not applicable

Boron accumulates in the terrestrial and aquatic plants. The BSAF values (Biota / Sediment Accumulation Factor) derived from tests carried

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out on the soil are generally <100.  
 Studies in animals and humans show that boron is rapidly eliminated via faeces and urine and the concentration of boron in organisms does not increase. Consequently the likelihood of secondary poisoning (via the food chain) is not significant

**Mobility in Soil:** The product is soluble and mobile in both terrestrial and aquatic compartments

### 13. DISPOSAL CONSIDERATIONS

**Product Disposal:** Recover if possible. In doing so, comply with state, federal and local regulations.

**Container Disposal:** Dispose of according to local regulations.

### 14. TRANSPORT INFORMATION

**Classification:** Based on available information, not classified as Dangerous Goods for transport by road or rail according to the Australian Code for the Transport of Dangerous Goods by Road and Rail, 7<sup>th</sup> Edition.

**UN Number:** Not applicable

**Proper Shipping Name or Technical Name:** Not applicable

**Transport Hazard Class:** Not applicable

**Packing Group:** Not applicable

**Environmental Hazards for Transport Purposes:** Not applicable

**Special Precautions for User:** Not applicable

**HAZCHEM Code:** Not applicable

**HAZCHEM Code:** Not applicable

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### 15. REGULATORY INFORMATION

**SUSMP:** Exempt from Poison Scheduling

**APVMA:** Exempt from registration

**State Departments of Agriculture / Primary Industries:** Registration not required

**Australian Inventory of Chemical Substances (AICS):** All components listed



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Toxic Substance – NZ

Exempt

### 16. OTHER INFORMATION

**Edition:** Initial edition

**Revision Due:** April 2021

**Reason for Revision:** Initial version

**Preparation Information:** Prepared by Campbells Fertilisers Australasia

**Data Sources:** Supplier SDS

**Trademark Information:**

#### Glossary:

**APVMA** Australian Pesticides and Veterinary Medicines Authority

**CAS** Chemical Abstract Services number, used to uniquely identify chemical compounds

**PPE** Personal protective equipment

**SUSMP** Standard for the Uniform Scheduling of Medicines and Poisons

This SDS summarises our best knowledge of the health and safety hazard information available for this product and how to safely handle and use it. Since the use of this information and the conditions of the use of this product are not under the control of Campbell's Fertilisers, it is the user's responsibility to determine conditions of safe use of the product.

END OF SDS