

SAFETY DATA SHEET

VALAGRO BREXIL TOP

Date of Issue: December 2016

1. IDENTIFICATION

Product Identifier:	VALAGRO BREXIL TOP
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
Emergency Telephone Number:	(03) 9931 2211 (business hours only 8.30 am to 5.00 pm) 0418 350 726 (after business hours) Poisons Information Centre 131126

2. HAZARD(S) IDENTIFICATION

Adverse physicochemical, human health and environmental effects:
Avoid contact with eyes, skin and ingestion. High concentrations of dust in the air may cause irritation of the nose and of respiratory tract.
If the product is involved in a fire, the fumes of the thermal decomposition are very toxic (carbon oxides (COx), nitrogen oxides (NOx), sulphur oxides (SOx), metal oxides).
The product can release gaseous ammonia if in contact with alkaline substances such as lime.



Pictograms: Health Hazard, Corrosion, Environment

GHS Hazard Class and Category:

Eye Damage/Irritation – category 1: “Danger”
H318 Causes serious eye damage

Specific target Organ Toxicity (Repeated Exposure) – category 2: “Warning”
Hazard statement: H373 May cause damage to the brain through prolonged or repeated exposure per inhalation

Hazardous to the Aquatic Environment (Long-Term Hazard) – category 2:
Hazard statement: H411 Toxic to aquatic life with long lasting effects

SAFETY DATA SHEET

VALAGRO BREXIL TOP

Date of Issue: December 2016

Precautionary Statements:

Prevention

P260 Do not breathe dust/fume/gas/mist/vapours/spray

P273 Avoid release to the environment

P280 Wear eye protection/face protection

Response

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310 Immediately call a POISON CENTRE/doctor

P314 Get medical advice/attention if you feel unwell

P391 Collect spillage

Storage

No relevant statements

Disposal

P501 Dispose of contents/container in accordance with local/regional/national regulations.

ADG Based on available information, not classified as a Dangerous Good under the Australian Code for the Transport of Dangerous Goods by Road and Rail, 7th Edition refer section 14.

SUSMP Schedule 6
Classification:

3. COMPOSITION AND INFORMATION ON INGREDIENTS

Component:	CAS Number:	Proportion (%):
Manganese sulphate	7785-87-7	12.5-15
Zinc sulphate	7446-19-7	12.5-15

4. FIRST AID MEASURES

Description of Necessary First Aid Measures:

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

Skin Contact: Take off immediately all contaminated clothing and dispose of safely. Rinse immediately and abundantly with running water and soap the contaminated body parts, even if only suspected of contact. If irritation develops, get medical attention.

Eye Contact: Rinse immediately and abundantly with water for a sufficient length of time. Eyelids should be held away from the eyeball to ensure thorough rinsing. Consult an ophthalmologist immediately. Protect uninjured eye.

Ingestion: Never give anything by mouth to an unconscious person. If person is conscious, rinse mouth with water and then give plenty of water to drink. Do not induce vomiting unless instructed to do so by medical personnel.

SAFETY DATA SHEET

VALAGRO BREXIL TOP

Date of Issue: December 2016

First Aid Facilities: OBTAIN A MEDICAL EXAMINATION IMMEDIATELY.
Ensure washing facilities, including an eyewash, are available and maintained. Ensure first aider uses individual protection equipment (gloves, safety goggles, protective clothing).

Symptoms caused by Exposure: No data available for the mixture. Possible symptoms that may occur:

Inhalation: May cause irritation to the respiratory tract. Cough, shortness of breath.

Skin: May cause irritation to the skin. Redness, itching, pain.

Eye: Causes serious eye damage. Pain, redness.

Ingestion: The product dissolved in water or in presence of moisture, causes an acid reaction and if swallowed can cause irritation and burns of the mouth, throat and digestive tract. Vomiting, abdominal pain, gastrointestinal disorders.

Medical Attention and Special Treatment:

In case of accident or if feeling unwell, seek medical advice immediately (show directions for use or safety data sheet if possible).

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Equipment: Water spray, foam, carbon dioxide (CO₂), powder

Specific Hazards arising from the Chemical: Do not inhale explosion and combustion gases. Burning produces smoke containing carbon oxides, nitrogen oxides, sulphur oxides, metal oxides

Special Protective Equipment and Precautions for Fire Fighters: Use suitable breathing apparatus, protective clothing, eye protection and gloves resistant to chemicals according to EN469. 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. In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.

SAFETY DATA SHEET

VALAGRO BREXIL TOP

Date of Issue: December 2016

ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures:	<p><u>For non-emergency personnel:</u></p> <ul style="list-style-type: none"> -No action shall be taken involving any personal risk or without suitable training. -Wear protective clothes giving total skin protection, PVC gloves, safety glasses and mask with filter P2. -Keep people not involved in the emergency intervention away from the affected area. -Ensure adequate ventilation, move people to a safe place. -Alert the internal emergency team <p><u>For emergency responders:</u></p> <ul style="list-style-type: none"> -Wear protective clothes giving total skin protection, PVC gloves, safety glasses and mask with filter P2. -Ensure adequate ventilation, move people to a safe place. -See protective measures in sections 7 and 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.
Environmental Precautions:	<p>Do not allow to enter soil/subsoil. Do not allow to enter into surface water or drains. Retain contaminated washing water and dispose of it in an approved landfill. If possible collect in clean plastic containers labelled and reuse as fertilizer. In case of gas escape or of entry into waterways, soil or drains, notify the relevant authorities. Suitable material for absorption: absorbing material, earth, sand.</p>
Methods and Materials for Containment and Cleaning Up:	<p>Collect the product, for example, using shovel and broom. Avoid raising dust. Wash with plenty of water, contain the spill with absorbent material, earth, sand.</p>

6. HANDLING AND STORAGE

Precautions for Safe Handling:	<p>Avoid contact with skin and eyes, inhalation of vapours and mists. Do not use empty containers before they have been cleaned. Before making transfer operations, ensure there are not any incompatible material residuals in the containers. Contaminated clothing should be changed before entering eating areas. Do not eat or drink while working.</p>
Conditions for Safe Storage, including any Incompatibilities:	<p>Keep in original containers tightly closed in a well-ventilated place far from humidity, heat and ignition sources. Avoid exposure to direct sunlight. Keep away from food, drink and feed.</p> <p>Incompatible materials: strong acids and bases, oxidizing and reducing agents. Ensure storage premises are adequately ventilated, cool and dry.</p>

SAFETY DATA SHEET

VALAGRO BREXIL TOP

Date of Issue: December 2016

7. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure Standards: *Manganese sulphate:*
Exposure limit Manganese TWA 0.2 mg/m³
Critical effect: central nervous system

Workers:
DNEL skin = 0.00414 mg/kg/day
DNEL inhalation = 0.2 mg/kg/day

Population:
DNEL skin = 0.0021 mg/kg/day
DNEL inhalation = 0.043 mg/m³

Environment:
PNEC water (fresh water) = 0.0128 mg/L
PNEC water (sea water) = 0.0004 mg/L
PNEC water (intermittent emissions) = 0.03 mg/L
PNEC STP = 56 mg/L
PNEC sediment (fresh water) = 0.0114 mg/kg dw sediment
PNEC sediment (sea water) = 0.00114 mg/ kg dw sediment
PNEC soil = 25.1 mg/kg soil dw

Zinc sulphate:
Exposure limit Zinc
Soluble zinc compounds

Country/organization	8 hr-TWA mg/m ³	15 min-STEL mg/m ³	References
USA	1	2	ACGIH (1991)
The Netherlands	1		SZW (1997)
UK	1	2 ^a	HSE (1998)
Sweden	1 ^b		National Board of Occupational Safety and Health, Sweden (1993)
Denmark	0.5		Arbejdstilsynet, 1992

^aThis value is a 10 mins-STEL

^bThis TWA is determined for dust

DNELs:

Oral:

DNEL_{oral soluble Zn} = 50 mg Zn/day (i.e. 0.83 mg Zn/kg bw/day)

DNEL_{oral insoluble Zn} = 50 mg Zn/day (i.e. 0.83 mg Zn/kg bw/day)

Dermal:

DNEL_{dermal soluble Zn} = 500 mg Zn/day (i.e. 8.3 mg Zn/kg bw/day)

DNEL_{dermal insoluble Zn} = 5000 mg Zn/day (i.e. 83 mg Zn/kg bw/day)

Inhalation – Worker:

DNEL_{inhal soluble Zn (worker)} = 1 mg Zn/m³

DNEL_{inhal insoluble Zn (worker)} = 5 mg Zn/m³

Inhalation – Consumer:

SAFETY DATA SHEET

VALAGRO BREXIL TOP

Date of Issue: December 2016

DNEL_{inhal soluble Zn (consumer)} = 1.3 mg Zn/m³
 DNEL_{inhal insoluble Zn (consumer)} = 2.5 mg Zn/m³

PNECs derived for the zinc ion:

Compartment (Environment)	PNEC value for Zn ion
Freshwater	20.6* µg/L
Saltwater	6.1* µg/L
STP	52 µg/L
Freshwater sediment	117.8* mg/kg sediment dw A generic bioavailability factor of 0.5 is applied by default: PNEC _{bioav} :235.6 mg/kg sediment dw
Saltwater sediment	56.5* mg/kg sediment dw A generic bioavailability factor of 0.5 is applied by default: PNEC _{bioav} :113 mg/kg sediment dw
Soil	35.6* mg/kg soil dw A generic bioavailability/ageing factor of 3 is applied by default: PNEC _{bioav} :106.8 mg/kg soil dw
Oral	No potential for bioaccumulation

*added value

ACGIH (2003): recommended value inhalable dust: TLV/TWA: 10 mg/m³
 ACGIH (2003): recommended value breathable dust: TLV/TWA: 3 mg/m³

Biological Monitoring: Not available

Control Banding: Not available

Engineering Controls: Not available

Individual Protection Measures e.g. Personal Protective Equipment (PPE):
Respiratory Protection:
 In case of dust generation, use dust mask with P2 filters according to the standard EN149:2001. The powder exposition limit must be respected.

Skin Protection:
 Wear protective clothing. Wear PVC gloves with long cuffs according to the standard EN374.

Eye Protection:
 Use close-fitting safety goggles according to the standard EN166. Do not use contact lenses.

Thermal Hazards:
 None known.

8. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Brown microgranules
Odour: Coffee
Vapour Pressure: Not applicable, solid
Apparent Density: 0.6 kg/dm³

SAFETY DATA SHEET

VALAGRO BREXIL TOP

Date of Issue: December 2016

Vapour Density:	Not applicable, solid
Boiling Point:	Not applicable, solid
Melting Point:	No data available
Solubility (in water):	300 g/L at 20°C
pH 1% at 20°C	7
Flash Point:	Not applicable, solid
Flammability (explosive) Limits:	Not applicable, product does not contain any flammable or explosive substance
Auto-Ignition Temperature:	No data available
Octanol/Water Partition Coefficient:	No data available
Thermal decomposition:	No data available
Conductivity:	No data available

9. STABILITY AND REACTIVITY

Reactivity:	Product is stable under normal conditions of storage.
Chemical Stability:	Product is stable under normal conditions of storage.
Possibility of Hazardous Reactions:	The product can release gaseous ammonia if in contact with alkaline substances such as lime
Conditions to Avoid:	Avoid heating the product at high temperatures. 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.
Incompatible Materials:	Avoid contact with strong acids and bases, oxidizing and reducing agents. The product can release gaseous ammonia if in contact with alkaline substances such as lime.
Hazardous Decomposition Products:	Does not decompose when used for intended uses. In case of fire and high temperatures, can develop carbon oxides, nitrogen oxides, sulphur oxides, meal oxides.

10. TOXICOLOGICAL INFORMATION

High concentrations of dust in the air may cause irritation of the respiratory tract. Nitrogen oxides (NOx) produced by heating the product at high temperatures may cause pulmonary edema. Contact with skin causes irritation and itching, direct contact with eyes causes irritation.

Toxicological Information of the Mixture: No data available

Toxicological Information of the Main Substances in the Mixture:

Acute Toxicity:	<i>Manganese sulphate</i> LC50 Inhalation >4.98 mg/L LD50 Oral = 2150 4.98 mg/kg bw Skin: absorption through skin is unlikely
------------------------	--

SAFETY DATA SHEET

VALAGRO BREXIL TOP

Date of Issue: December 2016

Zinc sulphate

Product	Results	Species	Doses mg/kg	Ref.
Zinc sulphate monohydrate hexahydrate heptahydrate	LD50 Oral	Rat	574 to 2949 862 to 4429 920 to 4725	Litton Bionetics 1974 Courtois <i>et al.</i> 1978
Zinc sulphate	LD50 Dermal	Rat	>2000	Van Huygevoort (1999a)

Skin

Corrosion/Irritation:

Manganese sulphate

In vivo test on rabbit OECD 404: Not irritating – Ref Pooles (2010)

Zinc sulphate

Not irritant (Van Huygevoort 1999b; Lansdown 1991)

Serious Eye

Damage/Irritation:

Manganese sulphate

Test *in vivo*: irreversible eye damage (test based on one rabbit)

Zinc sulphate

Severe irritant (Van Huygevoort 1999f)

Respiratory or Skin

Sensitisation:

Manganese sulphate

Skin: no sensitizing according to OECD 429

Respiratory system: no data available

Zinc sulphate

No sensitizing effect known (Van Huygevoort 1999i; Ikarashi *et al.* 1992)

Germ Cell

Mutagenicity:

Manganese sulphate

Result:negative (read-across results *in vivo* and *in vitro* test

Manganese chloride)

Zinc sulphate

No biologically relevant genotoxic activity (based on cross-reading between Zn compounds; no classification for mutagenicity required)(Chemical Safety Report (CSR) zinc sulphate 2010)

Carcinogenicity:

Manganese sulphate

Not carcinogenic

Zinc sulphate

Not carcinogenic

Reproductive

Toxicity:

Manganese sulphate

Not classified

Zinc sulphate

Not classified

Specific Target Organ

Toxicity (STOT) -

Single Exposure:

Manganese sulphate

Not classified

Zinc sulphate

Not classified

Specific Target Organ

Manganese sulphate

SAFETY DATA SHEET

VALAGRO BREXIL TOP

Date of Issue: December 2016

Toxicity (STOT) - Repeated Exposure: STOT RE 2 May cause damage to the brain through prolonged or repeated exposure by inhalation
Zinc sulphate
 Not classified

Aspiration Hazard: *Manganese sulphate*
 STOT RE 2 May cause damage to the brain through prolonged or repeated exposure by inhalation
Zinc sulphate
 No data available

Likely Routes Of Exposure: No data available for the mixture. Possible symptoms that may occur:

Inhalation: May cause irritation to the respiratory tract. Cough, shortness of breath

Skin: May cause irritation to the skin. Redness, itching, pain

Eye: Causes serious eye damage. Pain, redness

Ingestion: The product dissolved in water or in presence of moisture, can cause an acid reaction and if swallowed can cause irritation and burns of the mouth, throat and digestive tract. Vomiting, abdominal pain, gastrointestinal disorders

11. ECOLOGICAL INFORMATION

Ecotoxicity: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Manganese sulphate

Aquatic compartment	Results	Substance	Reference
Short-term toxicity: <i>Oncorhynchus mykiss</i> Fresh water	LC50 (96 h): 14.5 mg/L Mn	Test material: Manganese sulphate monohydrate	Davies PH (1980)
Long-term toxicity: <i>Oncorhynchus mykiss</i> Fresh water	NOEC (4 mo): 0.6 mg/L Mn	Test material (EC name): Manganese sulphate	Davies P & Brinkman S (1994)
Short-term toxicity: <i>Daphnia magna</i> Fresh water	LC50 (48 h): 9.8 mg/L dissolved (meas. (arithm. mean)) based on: as Mn ²⁺	Test material (EC name): Manganese chloride	Biesinger KE & Christensen GM (1972)
Long-term toxicity: <i>Daphnia magna</i>	LC50 (3 wk): 5700 µg/L dissolved	Test material (EC name): Manganese	Biesinger KE & Christensen GM (1972)

SAFETY DATA SHEET

VALAGRO BREXIL TOP

Date of Issue: December 2016

Salt water	(meas. (arithm. mean)) based on: mortality	chloride	
Algae: <i>Desmodesmus subspicatus</i> (algae, growth inhibition test) Fresh water	EC50 (72 h): 61 mg/L test mat. (nominal) based on: growth rate	Test material: Manganese sulphate monohydrate	Vryenhoef H (2010)

Zinc sulphate

Acute aquatic toxicity

For zinc heptahydrate (a ZnSO₄.7H₂O/Zn molecular weight ratio of 4.4)

For pH<7: 1.82 mg Zn/L (based on 48 h *Ceriodaphnia dubia* test cfr above)

For pH>7-8.5: 0.60 mg Zn/L (based on 72 h *Selenastrum capricornutum* test cfr above)

Persistence and Degradability:

No data available for the mixture

Bioaccumulative Potential:

The mixture does not contain any bioaccumulative component

Mobility in Soil:

In general, the mobility in the soil of the microelements in the mixture is influenced by several factors such as pH, CO₂ concentration, redox conditions, availability of organic and inorganic compounds

Manganese sulphate

No data available

Zinc sulphate

Solids-water partitioning coefficient = 158.5 L/kg (log=2.2 value)

Other Adverse Effects:

Not available

12. DISPOSAL CONSIDERATIONS

Product Disposal:

Recover the product, if possible, or send to the incineration and disposal system in accordance with local/national regulations. Avoid discharging in sewer and water courses.

Container Disposal:

Dispose in a safe manner in accordance with local/national regulations.

13. TRANSPORT INFORMATION

Classification:

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, 7th Edition. (ADG7) when being transported in IBCs or other receptacles <500 L (kg), (Special Provision AU01).

SAFETY DATA SHEET

VALAGRO BREXIL TOP

Date of Issue: December 2016

SEA and AIR

UN Number: 3077

Proper Shipping Name or Technical Name: SOLID SUBSTANCE – HARMFUL FOR THE ENVIRONMENT, N.A.S.(manganese sulphate, zinc sulphate)

Transport Hazard Class: 9

Packing Group: III

Environmental Hazards for Transport Purposes: ADR-environmental pollutant – Yes
IMDG Marine pollutant - No

Special Precautions for User: Not applicable

HAZCHEM Code: 2X

14. REGULATORY INFORMATION

SUSMP: S6

APVMA: Exempt from registration

State Departments of Agriculture / Primary Industries: Registration not required

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

15. OTHER INFORMATION

Edition: Initial edition

Revision Due: December 2021

Reason for Revision: Initial version

Preparation Information: Prepared by Campbells Fertilisers Australasia

Data Sources: Supplier SDS

Glossary:

ACGIH American Conference of Government Industrial Hygienists

ADR European Agreement concerning the International Carriage of Dangerous Goods by Road

APVMA Australian Pesticides and Veterinary Medicines Authority

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



SAFETY DATA SHEET

VALAGRO BREXIL TOP

Date of Issue: December 2016

DNEL	Derived No Effect Level
IMDG	International Maritime Code for Dangerous Goods
PNEC	Predicted No Effect Concentration
PPE	Personal protective equipment
STEL	Short Term Exposure Limit
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
TLV	Threshold Limiting Value
TWATLV	Threshold Limit Value for the Time Weighted Average 8 hour day (ACGIH Standard)

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