1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND THE COMPANY/UNDERTAKING

Product Identifier

Material Name: Valbazen™ Suspension

Trade Name: Valbazen, Valbantel

Synonyms: Valbantel 1.9% Suspension; Albendazole/Closantel; Valbazen 1.9% Suspension

Chemical Family: Benzimidazole

Relevant Identified Uses of the Substance or Mixture and Uses Advised Against

Intended Use: Veterinary product used as anti-worm agent (anthelmintic)

Restrictions on Use: Not for human use

2. HAZARDS IDENTIFICATION

Appearance: Clear Pale Brown Liquid

Classification of the Substance or Mixture

GHS - Classification

- Reproductive Toxicity: Category 1B
- Specific target organ systemic toxicity (repeated exposure): Category 2
- Acute aquatic toxicity: Category 2
- Chronic aquatic toxicity: Category 2

EU Classification:

- EU Indication of danger: Toxic to reproduction, Category 2
- Dangerous for the Environment

EU Symbol: T N

EU Risk Phrases:

- R61 - May cause harm to the unborn child.
- R51/53 - Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Label Elements

Signal Word: Danger
2. HAZARDS IDENTIFICATION

Hazard Statements:
H360D - May damage the unborn child
H373 - May cause damage to organs through prolonged or repeated exposure (liver, reproductive system, adrenal gland, blood forming organs)
H411 - Toxic to aquatic life with long lasting effects

Precautionary Statements:
P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P273 - Avoid release to the environment
P308 + P313 - IF exposed or concerned: Get medical attention/advice
P314 - Get medical attention/advice if you feel unwell
P391 - Collect spillage
P405 - Store locked up
P501 - Dispose of contents/container in accordance with all local and national regulations

Other Hazards
Short Term: May produce slight eye irritation. Signs and symptoms might include redness, swelling, blurred vision or pain. May cause slight skin irritation. Signs and symptoms might include skin rash, itching, redness or swelling.

Long Term: May cause damage to organs; may have the potential to produce effects on the developing fetus.

Australian Hazard Classification (NOHSC):

Note:
This document has been prepared in accordance with standards for workplace safety, which requires the inclusion of all known hazards of the product or its ingredients regardless of the potential risk. The precautionary statements and warning included may not apply in all cases. Your needs may vary depending upon the potential for exposure in your workplace.

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS Number</th>
<th>EU EINECS/ELINCS List</th>
<th>EU Classification</th>
<th>GHS Classification</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propylene glycol</td>
<td>57-55-6</td>
<td>200-338-0</td>
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<td>Not Listed</td>
<td>10</td>
</tr>
<tr>
<td>Closantel sodium</td>
<td>57808-65-8</td>
<td>260-967-1</td>
<td>Xn; R22 Repr. 3; R62/63 Xn; R48/22 N; R51/53</td>
<td>Acute tox. 3 (H301) Repr. 2 (H361) STOT RE 2 (H373) Aq. Acute 2 (H401) Aq. Chronic 2 (H411)</td>
<td>3.0</td>
</tr>
</tbody>
</table>
### 3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS Number</th>
<th>EU EINECS/ELINCS List</th>
<th>EU Classification</th>
<th>GHS Classification</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albendazole</td>
<td>54965-21-8</td>
<td>259-414-7</td>
<td>Xn;R48/22, Repr. Cat.2;R61 N;R50/53</td>
<td>STOT RE2 (H373) Repr. 1B (H360D) Aq. Acute 1 (H400) Aq. Chronic 1 (H410)</td>
<td>1.9</td>
</tr>
<tr>
<td>Microcrystalline cellulose</td>
<td>9004-34-6</td>
<td>232-674-9</td>
<td>Not Listed</td>
<td>Not Listed</td>
<td>&lt;1.0</td>
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<tr>
<td>Sodium Lauryl Sulfate</td>
<td>151-21-3</td>
<td>205-788-1</td>
<td>Xn R22 T R24 Acute Tox 4 (H302) Acute Tox 3 (H311)</td>
<td>Acute Tox 4 (H302) Acute Tox 3 (H311)</td>
<td>&lt;1.0</td>
</tr>
</tbody>
</table>

Additional Information: * Proprietary Ingredient(s) indicated as hazardous have been assessed under standards for workplace safety. In accordance with 29 CFR 1910.1200, the exact percentage composition of this mixture has been withheld as a trade secret.

For the full text of the R phrases and CLP/GHS abbreviations mentioned in this Section, see Section 16

### 4. FIRST AID MEASURES

**Description of First Aid Measures**

**Eye Contact:** Flush with water while holding eyelids open for at least 15 minutes. Seek medical attention immediately.

**Skin Contact:** Remove contaminated clothing. Flush area with large amounts of water. Use soap. Seek medical attention.

**Ingestion:** Never give anything by mouth to an unconscious person. Wash out mouth with water. Do not induce vomiting unless directed by medical personnel. Seek medical attention immediately.

**Inhalation:** Remove to fresh air and keep patient at rest. Seek medical attention immediately.

**Most Important Symptoms and Effects, Both Acute and Delayed**

**Symptoms and Effects of Exposure:** For information on potential signs and symptoms of exposure, See Section 2 - Hazards Identification and/or Section 11 - Toxicological Information.

**Medical Conditions Aggravated by Exposure:** None known

**Indication of the Immediate Medical Attention and Special Treatment Needed**

**Notes to Physician:** None

### 5. FIRE-FIGHTING MEASURES

**Extinguishing Media:** Extinguish fires with CO2, extinguishing powder, foam, or water.

**Special Hazards Arising from the Substance or Mixture**

**Hazardous Combustion Products:** Formation of toxic gases is possible during heating or fire.

**Fire / Explosion Hazards:** Fine particles (such as dust and mists) may fuel fires/explosions.
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Advice for Fire-Fighters
During all fire fighting activities, wear appropriate protective equipment, including self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures
Ensure adequate ventilation. Avoid contact with skin, eyes and clothing. Avoid dust and mist generation. Personnel involved in clean-up should wear appropriate personal protective equipment (see Section 8). Minimize exposure.

Environmental Precautions
Place waste in an appropriately labeled, sealed container for disposal. Care should be taken to avoid environmental release.

Methods and Material for Containment and Cleaning Up

Measures for Cleaning / Collecting:
Contain the source of spill if it is safe to do so. Collect spill with absorbent material. Clean spill area thoroughly. Place waste in an appropriate container for disposal.

Additional Consideration for Large Spills:
Non-essential personnel should be evacuated from affected area. Report emergency situations immediately. Clean up operations should only be undertaken by trained personnel.

7. HANDLING AND STORAGE

Precautions for Safe Handling
When handling, use proper personal protective equipment as specified in Section 8. Avoid inhalation and contact with skin, eye, and clothing. Wash hands and any exposed skin after removal of PPE. Avoid open handling. Use local exhaust ventilation or perform work under fume hood/fume cupboard. Releases to the environment should be avoided. Review and implement appropriate technical and procedural waste water and waste disposal measures to prevent occupational exposure or environmental releases. Potential points of process emissions of this material to the atmosphere should be controlled with dust collectors, HEPA filtration systems or other equivalent controls.

Conditions for Safe Storage, Including any Incompatibilities

Storage Conditions: Store at room temperature in properly labeled containers. Keep away from heat, sparks and flames.
Specific end use(s): No data available

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control Parameters
Refer to available public information for specific member state Occupational Exposure Limits.

Propylene glycol

<table>
<thead>
<tr>
<th>Country</th>
<th>Limit</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia TWA</td>
<td>150 ppm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>474 mg/m³</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Ireland OEL - TWAs</td>
<td>150 ppm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>470 mg/m³</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Latvia OEL - TWA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lithuania OEL - TWA</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Albendazole

<table>
<thead>
<tr>
<th>Country</th>
<th>Limit</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zoetis OEL TWA 8-hr</td>
<td>200µg/m³</td>
<td></td>
</tr>
</tbody>
</table>

Microcrystalline cellulose

<table>
<thead>
<tr>
<th>Limit</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH Threshold Limit Value (TWA)</td>
<td>10 mg/m³</td>
</tr>
</tbody>
</table>
8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Controls

Engineering Controls: Engineering controls should be used as the primary means to control exposures. Use process containment, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits.

Personal Protective Equipment: Refer to applicable national standards and regulations in the selection and use of personal protective equipment (PPE).

Hands: Wear impervious gloves if skin contact is possible.

Eyes: Safety glasses or goggles

Skin: Use protective clothing (uniforms, lab coats, disposable coveralls, etc.) in both production and laboratory areas.

Respiratory protection: If the applicable Occupational Exposure Limit (OEL) is exceeded, wear an appropriate respirator with a protection factor sufficient to control exposures to below the OEL. Respiratory protection should be provided in instances where exposure to dust, mists, aerosols or vapors are likely.

---

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Liquid

Color: Pale brown

Odor: No data available.

Odor Threshold: No data available.

Molecular Formula: Mixture

Molecular Weight: Mixture

Solvent Solubility: No data available

Water Solubility: No data available

pH: 8.5 - 10

Melting/Freezing Point (°C): No data available

Boiling Point (°C): No data available.

Partition Coefficient: (Method, pH, Endpoint, Value)

Albendazole

Predicted 7.4 Log D 3.06

Decomposition Temperature (°C): No data available.

Evaporation Rate (Gram/s): No data available

Vapor Pressure (kPa): No data available

Vapor Density (g/ml): No data available
SAFETY DATA SHEET

Relative Density: 1.02 - 1.04 g/ml
Viscosity: 70 - 150 cPs at 20C/68F

Flammability:
Autoignition Temperature (Solid) (°C): No data available
Flammability (Solids): No data available
Flash Point (Liquid) (°C): No data available
Upper Explosive Limits (Liquid) (% by Vol.): No data available
Lower Explosive Limits (Liquid) (% by Vol.): No data available

10. STABILITY AND REACTIVITY

Reactivity: No data available
Chemical Stability: Stable under normal conditions of use.
Possibility of Hazardous Reactions
Oxidizing Properties: No data available
Conditions to Avoid: Fine particles (such as dust and mists) may fuel fires/explosions.
Incompatible Materials: As a precautionary measure, keep away from strong oxidizers
Hazardous Decomposition Products: Thermal decomposition products may include carbon monoxide, carbon dioxide and other toxic vapors.

11. TOXICOLOGICAL INFORMATION

Information on Toxicological Effects
General Information: Toxicological properties of the formulation have not been investigated. The information in this section describes the potential hazards of the individual ingredients and the formulation.
Routes of exposure: eye contact, skin contact

Acute Toxicity: (Species, Route, End Point, Dose)

Albendazole
Mouse Oral LD50 > 3000 mg/kg
Rat Oral LD50 > 1320 mg/kg

Closantel sodium
Rat Oral LD50 262 mg/kg

Propylene glycol
Rat Oral LD 50 22,000 mg/kg
Mouse Oral LD 50 24,900 mg/kg
Rabbit Dermal LD 50 20,800 mg/kg

Carboxymethylcellulose sodium
Mouse Oral LD50 > 27,000 mg/kg
Rat Oral LD50 27,000 mg/kg
Rabbit Dermal LD50 > 2000 mg/kg

Microcrystalline cellulose
Rat Oral LD50 > 5000 mg/kg
Rabbit Dermal LD50 > 2000 mg/kg
11. TOXICOLOGICAL INFORMATION

**Sodium Lauryl Sulfate**
- Rat  Oral  LD50  977 mg/kg
- Rabbit  Dermal  LD50  580 mg/kg
- Rat  Inhalation  LC50  > 3900 mg/m³ 1 h

**Irritation / Sensitization: (Study Type, Species, Severity)**

**Albendazole**
- Eye Irritation  Rabbit  Non-irritating
- Skin Irritation  Rabbit  Non-irritating
- Skin Sensitization - Beuhler  Guinea Pig  Negative

**Propylene glycol**
- Skin Irritation  Rabbit  Mild
- Eye Irritation  Rabbit  Mild

**Microcrystalline cellulose**
- Skin Irritation  Rabbit  Non-irritating
- Eye Irritation  Rabbit  Non-irritating

**Repeated Dose Toxicity: (Duration, Species, Route, Dose, End Point, Target Organ)**

**Albendazole**
- 4 Week(s)  Rat  Oral  25 mg/kg/day  NOAEL  Adrenal gland, Blood forming organs, Male reproductive system, Spleen
- 3 Month(s)  Rat  Oral  30 mg/kg/day  NOAEL  No effects at maximum dose
- 90 Day(s)  Mouse  Oral  20 (M); 40 (F) mg/kg/day  NOAEL  Liver
- 4 Week(s)  Dog  Oral  4 mg/kg/day  NOAEL  Adrenal gland, Blood forming organs, Bone Marrow, Male reproductive system
- 6 Month(s)  Dog  Oral  5 mg/kg/day  NOAEL  Blood forming organs, Kidney, Liver, Female reproductive system, Male reproductive system

**Carboxymethylcellulose sodium**
- 13 Week(s)  Rat  Oral  227 g/kg  LOAEL  Liver, Kidney, Ureter, Bladder

**Reproduction & Developmental Toxicity: (Study Type, Species, Route, Dose, End Point, Effect(s))**

**Albendazole**
- Prenatal & Postnatal Development  Rat  Oral  6 mg/kg/day  NOAEL  Developmental toxicity
- Prenatal & Postnatal Development  Mouse  Oral  30 mg/kg/day  NOAEL  No effects at maximum dose
- Reproductive & Fertility  Rat  Oral  1 mg/kg/day  NOAEL  Negative
- Prenatal & Postnatal Development  Rabbit  Oral  5 mg/kg/day  NOAEL  Developmental toxicity,

**Genetic Toxicity: (Study Type, Cell Type/Organism, Result)**

**Albendazole**
- Bacterial Mutagenicity (Ames)  Salmonella  Negative
- In Vitro Chromosome Aberration  Chinese Hamster Ovary (CHO) cells  Negative
- Cell Transformation Assay  Mouse  Negative
11. TOXICOLOGICAL INFORMATION

Carcinogenicity: (Duration, Species, Route, Dose, End Point, Effect(s))

Albendazole
25 Month(s) Mouse Oral 400 mg/kg/day NOAEL Not carcinogenic
28 Month(s) Rat Oral 20 mg/kg/day NOAEL Not carcinogenic

Carcinogen Status: None of the components of this formulation are listed as a carcinogen by IARC, NTP or OSHA.

Product Level Toxicity Data
Acute Toxicity Estimate (ATE), oral > 5000 mg/kg
Acute Toxicity Estimate (ATE), dermal > 5000 mg/kg

12. ECOLOGICAL INFORMATION

Environmental Overview: Environmental properties have not been investigated. The following information is available for the individual ingredients. Releases to the environment should be avoided.

Toxicity:

Aquatic Toxicity: (Species, Method, End Point, Duration, Result)

Albendazole
*Daphnia magna* (Water Flea) TAD 4.08 EC50 48 Hours 0.024 mg/L
*Pseudokirchneriella subcapitata* (Green Alga) OECD 201 EC50 72 Hours > 0.42 mg/L

Persistence and Degradability:
Albendazole Not Ready

Bio-accumulative Potential: No data available

Albendazole
Predicted 7.4 Log D 3.06

Mobility in Soil: No data available

13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods: Dispose of waste in accordance with all applicable laws and regulations. Member State specific and Community specific provisions must be considered. Considering the relevant known environmental and human health hazards of the material, review and implement appropriate technical and procedural waste water and waste disposal measures to prevent occupational exposure and environmental release. It is recommended that waste minimization be practiced. The best available technology should be utilized to prevent environmental releases. This may include destructive techniques for waste and wastewater.
14. TRANSPORT INFORMATION

As of January 1, 2015, materials offered for transport that are classified for transportation only as Marine Pollutants and which are packaged in single or combination packagings containing a net quantity per single or inner packaging of 5 Liters or less for liquids or having a net mass per single or inner packaging of 5 kilograms or less for solids are NOT subject to ICAO/IATA, IMDG, or ADR transport regulations provided the general packaging requirements of those regulations are met. Refer to ICAO/IATA A197, IMDG 2.10.2.7, ADR SP 375.

UN number: UN 3082
UN proper shipping name: Environmentally hazardous substances, liquid, n.o.s. (albendazole)
Transport hazard class(es): 9
Packing group: III
Environmental Hazard(s): Marine Pollutant

Please refer to the applicable dangerous goods regulations for additional information. Transport according to the requirements of the appropriate regulatory body.

DOT / ANTT: Not regulated for transportation

15. REGULATORY INFORMATION

Safety, Health and Environmental Regulations/Legislation Specific for the Substance or Mixture

Canada - WHMIS: Classifications
WHMIS hazard class:
Class D, Division 2, Subdivision A
This product has been classified in accordance with the hazard criteria of the CPR and the SDS contains all of the information required by the CPR.

Propylene glycol
CERCLA/SARA 313 Emission reporting Not Listed
California Proposition 65 Not Listed
Inventory - United States TSCA - Sect. 8(b) Present
Australia (AICS): Present
EU EINECS/ELINCS List 200-338-0

Closantel sodium
CERCLA/SARA 313 Emission reporting Not Listed
California Proposition 65 Not Listed
Australia (AICS): Present
Standard for the Uniform Scheduling for Drugs and Poisons: Schedule 6
15. REGULATORY INFORMATION

<table>
<thead>
<tr>
<th>Material Name</th>
<th>EU EINECS/ELINCS List</th>
<th>CERCLA/SARA 313 Emission reporting</th>
<th>California Proposition 65</th>
<th>Australia (AICS)</th>
<th>Standard for the Uniform Scheduling for Drugs and Poisons</th>
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<tbody>
<tr>
<td>Albendazole</td>
<td>260-967-1</td>
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<td>Not Listed</td>
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<td>Schedule 4</td>
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<td></td>
<td>Schedule 6</td>
</tr>
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<td>Microcrystalline cellulose</td>
<td>259-414-7</td>
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<td>Not Listed</td>
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<td></td>
</tr>
<tr>
<td>Sodium Lauryl Sulfate</td>
<td>232-674-9</td>
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<td>Not Listed</td>
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<tr>
<td>Water, purified</td>
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<td>Not Listed</td>
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</tbody>
</table>

16. OTHER INFORMATION

Text of R phrases and GHS Classification abbreviations mentioned in Section 3
Acute toxicity, oral-Cat.3; H301 - Toxic if swallowed
Specific target organ toxicity, repeated exposure-Cat.2; H373 - May cause damage to organs through prolonged or repeated exposure
Hazardous to the aquatic environment, acute toxicity-Cat.1; H400 - Very toxic to aquatic life
Hazardous to the aquatic environment, chronic toxicity-Cat.1; H410 - Very toxic to aquatic life with long lasting effects
Hazardous to the aquatic environment, acute toxicity-Cat.2; H401 - Toxic to aquatic life
Hazardous to the aquatic environment, chronic toxicity-Cat.2; H411 - Toxic to aquatic life with long lasting effects
Reproductive toxicity-Cat.1B; H360D - May damage the unborn child
Reproductive toxicity-Cat.2; H361 - Suspected of damaging fertility or the unborn child
Acute toxicity, oral-Cat.4; H302 - Harmful if swallowed
Acute toxicity, dermal-Cat.3; H311 - Toxic in contact with skin

Xn - Harmful
N - Dangerous for the environment
Toxic to Reproduction: Category 2
Toxic to Reproduction: Category 3
T - Toxic

R22 - Harmful if swallowed.
R61 - May cause harm to the unborn child.
R24 - Toxic in contact with skin.
R62 - Possible risk of impaired fertility.
R63 - Possible risk of harm to the unborn child.
R50/53 - Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R51/53 - Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R48/22 - Harmful: danger of serious damage to health by prolonged exposure if swallowed.

Data Sources: The data contained in this SDS may have been gathered from confidential internal sources, raw material suppliers, or from the published literature.

Reasons for Revision: Updated Section 1 - Identification of the Substance/Preparation and the Company/Undertaking.
Updated Section 2 - Hazard Identification. Updated Section 8 - Exposure Controls / Personal Protection. Updated Section 14 - Transport Information.

Prepared by: Toxicology and Hazard Communication
Zoetis Global Risk Management

Zoetis Inc. believes that the information contained in this Safety Data Sheet is accurate, and while it is provided in good faith, it is without warranty of any kind, expressed or implied. If data for a hazard are not included in this document there is no known information at this time.

End of Safety Data Sheet