Section 1 - Identification of the Substance/Mixture and Supplier

Zoetis Australia Pty Ltd
ABN 94 156 476 425
Level 6, 5 Rider Blvd
Rhodes NSW 2138 AUSTRALIA
Tel: 1800 814 883
Fax: (02) 8876 0444
Email: australia.animalhealth@zoetis.com

Product Identifier: Cattleguard® Pour-on for Cattle and Red Deer
APVMA Approval No: 66931
Other names: None
Chemical family: Macrocyclic lactone
Recommended Use: Treatment & control of internal and external parasites of cattle and internal parasites of deer by topical application.

Restrictions on use: For veterinary use only.
Emergency Phone: 1800 814 883 (all hours)

Section 2 - Hazards Identification

Classification of the Hazardous Chemical

GHS - Classification:
- Acute aquatic toxicity: Category 1
- Chronic aquatic toxicity: Category 1

GHS Label Elements:

GHS Signal word: WARNING

Hazard statements
H410 - Very toxic to aquatic life with long lasting effects

Precautionary Statements:
P273 - Avoid release to the environment
P391 - Collect spillage
P501 - Dispose of contents/container in accordance with all local and national regulations

Other Hazards
Short Term: May be harmful if swallowed. May cause slight skin irritation. (based on components)
Known Clinical Effects: Adverse effects associated with therapeutic use include: clumsy motion of limbs/trunk (ataxia), drowsiness, depression, salivation.

Section 3 - Composition/Information on Ingredients

Hazardous
## Ingredients

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Conc, TWA (mg/m³)</th>
<th>STEL (mg/m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citric acid</td>
<td>77-92-9</td>
<td>1% not set</td>
</tr>
<tr>
<td>Moxidectin</td>
<td>113507-06-5</td>
<td>0.5% not set</td>
</tr>
<tr>
<td>Butylated hydroxyanisole</td>
<td>25013-16-5</td>
<td>&lt;0.1 not set</td>
</tr>
</tbody>
</table>

Non Hazardous

| 57-55-6 | * | not set | not set |

### Additional information:

* Proprietary

Ingredient(s) indicated as hazardous have been assessed under standards for workplace safety.

## Section 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

## Section 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.

**Advice for Fire-Fighters**

During all fire fighting activities, wear appropriate protective equipment, including self-contained breathing apparatus.

## Section 6 - Accidental Release Measures

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

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.

Section 7 - Handling and Storage

Precautions for Safe Handling
When handling, use appropriate personal protective equipment (see Section 8). Use with adequate ventilation. Avoid breathing vapor or mist. Avoid contact with eyes, skin and clothing. Wash hands and any exposed skin after removal of PPE. Refer to Section 12 - Ecological Information, for information on potential effects on the environment. 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 as directed by product packaging.
Specific end use(s): No data available

Section 8 - Exposure Controls and Personal Protection

Control Parameters

Moxidectin
Zoetis OEL TWA 8-hr 70 µg/m³

Propylene glycol 150 ppm
Australia TWA 474 mg/m³ 10 mg/m³

Exposure Controls
Engineering Controls: Engineering controls should be used as the primary means to control exposures. Keep airborne contamination levels below the exposure limits listed above in this section.

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

Hands: Impervious gloves are recommended if skin contact with drug product is possible and for bulk processing operations.

Eyes: Wear safety glasses or goggles if eye contact is possible.

Skin: Impervious protective clothing is recommended if skin contact with drug product is possible and for bulk processing operations.

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.
### Section 9 - Physical and Chemical Properties:

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical State</td>
<td>Liquid</td>
</tr>
<tr>
<td>Colour</td>
<td>Clear amber</td>
</tr>
<tr>
<td>Odor</td>
<td>No data available</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>Molecular Formula</td>
<td>Mixture</td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>Mixture</td>
</tr>
<tr>
<td>Solvent Solubility</td>
<td>No data available</td>
</tr>
<tr>
<td>Water Solubility</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting/Freezing Point (°C)</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling Point (°C)</td>
<td>No data available</td>
</tr>
<tr>
<td>Partition Coefficient (Method, pH, Endpoint, Value):</td>
<td>No data available</td>
</tr>
</tbody>
</table>

**Moxidectin**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Predicted Log D</td>
<td>8.74</td>
</tr>
<tr>
<td>Decomposition Temperature (°C)</td>
<td>No data available</td>
</tr>
<tr>
<td>Evaporation Rate (Gram/s)</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapor Pressure (kPa)</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapor Density (g/ml)</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative Density</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>No data available</td>
</tr>
</tbody>
</table>

**Flammability:**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autoignition Temperature (Solid) (°C)</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (Solids)</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash Point (Liquid) (°C)</td>
<td>No data available</td>
</tr>
<tr>
<td>Upper Explosive Limits (Liquid) (% by Vol.)</td>
<td>No data available</td>
</tr>
<tr>
<td>Lower Explosive Limits (Liquid) (% by Vol.)</td>
<td>No data available</td>
</tr>
</tbody>
</table>

### Section 10 - Stability and Reactivity

**Reactivity:** No data available  
**Chemical Stability:** Stable under normal conditions of use.  
**Possibility of Hazardous Reactions**

- **Oxidizing Properties:** Non-oxidizing  
- **Conditions to Avoid:** Fine particles (such as mists) may fuel fires/explosions.  
- **Incompatible Materials:** As a precautionary measure, keep away from strong oxidizers  
- **Hazardous Decomposition**

<table>
<thead>
<tr>
<th>Products</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No data available</td>
</tr>
</tbody>
</table>
Acute Toxicity: (Species, Route, End Point, Dose)

Moxidectin
Rat  Oral  LD50  106 mg/kg
Rat  Dermal LD50  > 2000mg/kg

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

Butylated hydroxyanisole
Rat  Oral  LD 50  2,000 mg/kg
Mouse  Oral  LD 50  1100mg/kg
Rat  Intraperitoneal  LD 50  881mg/kg

Acute Toxicity Comments: A greater than symbol (>) indicates that the toxicity endpoint being tested was not achievable at the highest dose used in the test.

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

Moxidectin
Eye Irritation  Rabbit  Moderate
Skin Irritation  Rabbit  Mild
Skin Sensitization - Beuhler  Guinea Pig  Negative

Propylene glycol
Skin Irritation  Rabbit  Mild
Eye Irritation  Rabbit  Mild

Citric Acid
Eye Irritation  Rabbit  Irritant
Skin Irritation  Rabbit  Non-irritating

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

Moxidectin
28 Day(s)  Mouse  Oral  75 mg/kg/day  NOEL  Central nervous system
28 Day(s)  Rat  Oral  100 mg/kg/day  LOEL  Central Nervous System
13 Week(s)  Rat  Oral  50 mg/kg/day  NOEL  Central Nervous System
90 Day(s)  Dog  Oral  10 mg/kg/day  NOEL  Central Nervous System

Butylated hydroxyanisole
12 Day(s)  Rat  Oral  3300 mg/kg  LOAEL  Liver, Blood

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

Moxidectin
Embryo / Fetal Development  Rabbit  Oral  1 mg/kg bw/day  NOEL  Maternal toxicity, Not teratogenic
Embryo / Fetal Development  Rat  Oral  5 mg/kg/day  NOEL  Negative
Embryo / Fetal Development  Rat  Oral  5 mg/kg bw/day  NOEL  Not Teratogenic, Embryotoxicity, Maternal Toxicity

Butylated hydroxyanisole
Embryo / Fetal Development  Rat  Oral  30 g/kg  LOEL  Teratogenic

Genetic Toxicity: (Study Type, Cell Type/Organism, Result)
Moxidectin
*In Vitro* Bacterial Mutagenicity (Ames)  Salmonella, E. coli  Negative
*In Vitro* HGPRT Forward Gene Mutation Assay  Chinese Hamster Ovary (CHO) cells  Negative
*In Vivo* Cytogenetics  Rat Bone Marrow  Negative
*In Vivo* Unscheduled DNA Synthesis  Rat Hepatocyte  Negative

Butylated hydroxyanisole
*In Vivo* Micronucleus  Bone Marrow  Negative
*In Vitro* Bacterial Mutagenicity (Ames)  Salmonella  Negative

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

**Moxidectin**
- 2 Year(s)  Mouse Oral 30 mg/kg/day  NOEL  Not carcinogenic
- 2 Year(s)  Rat Oral 100 mg/kg/day  NOEL  Not carcinogenic

**Butylated hydroxyanisole**
- Two Year(s)  Rat Oral 728 g/kg/day  Gastrointestinal system, Tumors
- Two Year(s)  Rat Oral 874 g/kg/day  Gastrointestinal system, Endocrine system, Tumors

**Carcinogen Status:**  See below

**Butylated hydroxyanisole**
- IARC:  Group 2B (Possibly Carcinogenic to Humans)
- NTP:  Reasonably Anticipated To Be A Human Carcinogen

---

### Section 12 - Ecological Information

**Environmental Overview:** Very toxic to aquatic life with long lasting effects. Releases to the environment should be avoided.

**Toxicity:**

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

**Moxidectin**
- *Lepomis macrochirus* (Bluegill Sunfish)  LC50  96 Hours  0.62 ppb
- *Oncorhynchus mykiss* (Rainbow Trout)  LC50  96 Hours  0.16 ppb
- *Daphnia Magna* (Water Flea)  EC50  48 Hours  30 ppt
- *Selenastrum capricornutum* (Green Alga)  EC50  72 Hours  > 87 ppb

**Aquatic Toxicity Comments:** A greater than symbol (>) indicates that aquatic toxicity was not observed at the maximum dose tested.

**Persistence and Degradability:** No data available

**Bio-accumulative Potential:**

**Moxidectin**
- Predicted 7 Log D 8.74

**Mobility in Soil:** No data available

---

**SAFETY DATA SHEET**

Issued by: Zoetis Australia Pty Ltd  Phone: 1800 814 883

Poisons Information Centre: 13 1126 from anywhere in Australia
Section 13 - Disposal Considerations

Disposal: Special help is available for the disposal of Agricultural Chemicals. The product label will give general advice regarding disposal of small quantities, and how to cleanse containers. However, for help with the collection of unwanted rural chemicals, contact ChemClear 1800 008 182 http://www.chemclear.com.au/ and for help with the disposal of empty drums, contact DrumMuster http://www.drummuster.com.au/ where you will find contact details for your area.

Section 14 - Transport Information

Not subject to the ADG Code when transported by Road or Rail in Australia, in packages 500kg(L) or less; or IBCs, but classed as Dangerous Goods by IATA and IMDG when carried by Air or Sea transport (see details below).

UN number: UN 3082
UN proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S. (moxidectin)
Transport hazard class(es): 9
Packing group: III
Environmental Hazard(s): Marine Pollutant
This product is classed as environmentally hazardous. Take appropriate precautions when transporting, handling or cleaning up spills.

Special precaution for user: Class 9 Miscellaneous Dangerous Goods shall not be loaded in the same vehicle or packed in the same freight container with Dangerous Goods of Class 1 (Explosives).

Section 15 - Regulatory Information

Poison Schedule: S5
AICS: All of the significant ingredients in this formulation are compliant with NICNAS regulations.

Section 16 - Other Information

This SDS contains only safety-related information. For other data see product literature.

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

Acronyms:

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADG Code</td>
<td>Australian Code for the Transport of Dangerous Goods by Road and Rail (7th edition)</td>
</tr>
<tr>
<td>AICS</td>
<td>Australian Inventory of Chemical Substances</td>
</tr>
<tr>
<td>SWA</td>
<td>Safe Work Australia, formerly ASCC and NOHSC</td>
</tr>
<tr>
<td>CAS number</td>
<td>Chemical Abstracts Service Registry Number</td>
</tr>
<tr>
<td>Hazchem Code</td>
<td>Emergency action code of numbers and letters that provide information to emergency services especially firefighters</td>
</tr>
<tr>
<td>IARC</td>
<td>International Agency for Research on Cancer</td>
</tr>
<tr>
<td>NOS</td>
<td>Not otherwise specified</td>
</tr>
<tr>
<td>NTP</td>
<td>National Toxicology Program (USA)</td>
</tr>
<tr>
<td>SUSMP</td>
<td>Standard for the Uniform Scheduling of Medicines &amp; Poisons</td>
</tr>
<tr>
<td>UN Number</td>
<td>United Nations Number</td>
</tr>
</tbody>
</table>

This version issued: 9 December 2016.

Supersedes: Revision issued 1 Jun 2016

Revision History:

<table>
<thead>
<tr>
<th>Date of Revision</th>
<th>Reason</th>
</tr>
</thead>
<tbody>
<tr>
<td>17 Nov 2014</td>
<td>Update to GHS</td>
</tr>
<tr>
<td>1 Jun 2016</td>
<td>Revision for consistency with Zoetis categorisation</td>
</tr>
<tr>
<td>9 Dec 2016</td>
<td>Amended APVMA number. This SDS replaces version issued 1 Jun 2016</td>
</tr>
</tbody>
</table>

SAFETY DATA SHEET
Issued by: Zoetis Australia Pty Ltd
Phone: 1800 814 883
Poisons Information Centre: 13 1126 from anywhere in Australia
This SDS summarises our current and best knowledge of the health and safety hazard information about the product detailed in this SDS, and how to safely handle and use the product in the workplace for the recommended use. Each user of the product must review this SDS in the context of how the product will be handled and used in their own workplace. If clarification or further information is needed to ensure that an appropriate risk assessment can be made, the user should contact Zoetis.

Please read all labels carefully before using product.

This SDS is prepared in accord with the SWA document “Preparation of Safety Data Sheets for Hazardous Chemicals - Code of Practice” (December 2011)
© 2016 Zoetis Inc, All rights reserved.

End of Safety Data Sheet