**Section 1 - Identification of the Material 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: productsupport.au@zoetis.com

**Chemical nature:** Moxidectin as inert microspheres  
**Trade Name:** ProHeart® SR-12 Injection Once-A-Year Heartworm Preventative for Dogs  
**Other Names:** Proheart for dogs  
**Product Code:** 51805  
**Product Use:** Prevention of heartworm and treatment of hookworms in dogs

Note that this MSDS relates to the Moxidectin microspheres. The other vial in the package contains sterile solution (saline water) which has no known hazards.

**Creation Date:** July 2012  
**This version issued:** 22 September 2021 and is valid for 5 years from this date

**Section 2 - Hazards Identification**

**Appearance:** Wax Microspheres with a clear or translucent sterile solution

**Classification of the Substance or Mixture**

**GHS - Classification**
- Acute Oral Toxicity: Category 4
- Serious Eye Damage/Eye Irritation: Category 2
- Specific target organ systemic toxicity (repeated exposure): Category 2
- Acute aquatic toxicity: Category 1
- Chronic aquatic toxicity: Category 1

**Label Elements**

**Signal Word:** Warning  
**Hazard Statements:**  
H302 - Harmful if swallowed  
H319 - Causes serious eye irritation  
H373 - May cause damage to organs through prolonged or repeated exposure (central nervous system, peripheral nervous system)  
H410 - Very toxic to aquatic life with long lasting effects

**Precautionary Statements:**  
P280 - Wear protective gloves/protective clothing/eye protection/face protection  
P260 - Do not breathe dust/fume/gas/mist/vapors/spray  
P270 - Do not eat, drink or smoke when using this product  
P264 - Wash hands thoroughly after handling  
P273 - Avoid release to the environment  
P314 - Get medical attention/advice if you feel unwell  
P301+ P312 - IF SWALLOWED: Call a POISON CENTRE or doctor/physician if you feel unwell  
P330 - Rinse mouth  
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
P337 + P313 - If eye irritation persists: Get medical advice/attention  
P391 - Collect spillage  
P501 - Dispose of contents/container in accordance with all local and national regulations
Other Hazards

**Short Term:**
Can cause eye irritation. Signs and symptoms might include redness, swelling, blurred vision or pain. May cause slight skin irritation. May cause central nervous system effects.

**Long Term:**
May cause effects on nervous system through prolonged or repeated exposure.

**Known Clinical Effects:**
Adverse effects associated with therapeutic use include clumsy motion of limbs/trunk (ataxia) drowsiness, depression, salivation.

**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.

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### Section 3 - Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Hazardous Ingredients</th>
<th>CAS No</th>
<th>Conc,%</th>
<th>GHS Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moxidectin</td>
<td>113507-06-5</td>
<td>10</td>
<td>Acute Tox.3 (H301)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Eye Irrit. 2A (H319)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Skin Irrit 3 (H316)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Aquatic Acute 1 (H400)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Aquatic Chronic 1 (H410)</td>
</tr>
<tr>
<td>Sodium chloride</td>
<td>7647-14-5</td>
<td>&lt;1</td>
<td>Not Listed</td>
</tr>
<tr>
<td>Methylparaben</td>
<td>99-76-3</td>
<td>&lt;1</td>
<td>Not Listed</td>
</tr>
<tr>
<td>Propylparaben</td>
<td>94-13-3</td>
<td>&lt;0.1</td>
<td>Not Listed</td>
</tr>
<tr>
<td>Butylated hydroxytoluene</td>
<td>128-37-0</td>
<td>##</td>
<td>Not Listed</td>
</tr>
<tr>
<td>Sterile Diluent</td>
<td>Not assigned</td>
<td>80-90</td>
<td>Not Listed</td>
</tr>
</tbody>
</table>

**Additional Information:**
## Trace
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.

This is a commercial product whose exact ratio of components may vary slightly. Minor quantities of other non-hazardous ingredients are also possible.

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### 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.
**Product Name:** ProHeart® SR-12 Injection Once-A-Year Heartworm Preventative for Dogs

**Page:** 3 of 9

**Issued by:** Zoetis Australia Pty Ltd

**Phone:** 1800 814 883

**Poisons Information Centre:** 13 11 26 from anywhere in Australia, (0800 764 766 in New Zealand)

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**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

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## 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 firefighting activities, wear appropriate protective equipment, including self-contained breathing apparatus.

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## 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**

Prevent product from entering drains. 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.

**Additional Information:** Keep out of sewage systems and waterways.

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## Section 7 - Handling and Storage

**Precautions for Safe Handling**

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When handling, use appropriate personal protective equipment (see Section 8). Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Avoid accidental injection. Wash hands and any exposed skin after removal of PPE. Releases to the environment should be avoided.

Conditions for Safe Storage, Including any Incompatibilities

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
Butylated hydroxytoluene
Australia TWA 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. General room ventilation is adequate unless the process generates dust, mist or fumes.

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: Whenever excessive air contamination (dust, mist, vapor) is generated, respiratory protection, with appropriate protection factors, should be used to minimize exposure. 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:

| Physical State: Wax Microspheres plus sterile diluent | Color: Clear or translucent |
| 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: No data available | Melting/Freezing Point (°C): No data available |
| Boiling Point (°C): No data available | Partition Coefficient: (Method, pH, Endpoint, Value) No data available |
| Moxidectin Predicted 7 Log D 8.74 | Decomposition Temperature (°C): No data available |
| Evaporation Rate (Gram/s): No data available | Vapor Pressure (kPa): No data available |

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Vapor Density (g/ml): No data available  
Relative Density: No data available  
Viscosity: No data available  
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  

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 dust and mists) may fuel fires/explosions.  
  Incompatible Materials: As a precautionary measure, keep away from strong oxidizers  
  Hazardous Decomposition: Thermal decomposition products may include carbon monoxide, carbon dioxide and other toxic vapors.  

Section 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)  
  Moxidectin  
    Rat Oral LD50 106 mg/kg  
    Rat Dermal LD50 > 2000mg/kg  
  Hydroxypropyl methylcellulose  
    Rat Oral LD50 > 10,000 mg/kg  
  Butylated hydroxytoluene  
    Rat Oral LD50 1700 mg/kg  
    Mouse Oral LD50 650 mg/kg  
    Rat Oral LD50 890 mg/kg  
    Mouse Intraperitoneal LD 50 138 mg/kg  
  Sodium chloride  
    Rat Oral LD50 3000 mg/kg  
    Mouse Oral LD50 4000 mg/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.  
Ingestion Acute Toxicity: Harmful if swallowed.  
Irritation / Sensitization: (Study Type, Species, Severity)  
  Moxidectin  

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

Butylated hydroxytoluene
Eye Irritation  Rabbit  Moderate
Skin Irritation  Rabbit  Moderate

Sodium chloride
Eye Irritation  Rabbit  Moderate
Skin Irritation  Rabbit  Mild

Irritation / Sensitization Comments:  May cause eye irritation.
Skin Irritation / Sensitization  May cause mild skin irritation.

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 hydroxytoluene
4 Week(s)  Rat  Oral  5185 mg/kg  LOAEL  Liver
4 Day(s)  Mouse  Oral  2000 mg/kg  LOAEL  Liver, Kidney, Ureter, Bladder

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 hydroxytoluene
Embryo / Fetal Development  Rat  Oral  6 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

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

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

Butylated hydroxytoluene
IARC:  Group 3 (Not Classifiable)

Product Level Toxicity Data
Acute Toxicity Estimate (ATE), Oral  1064 mg/kg

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Section 12 - Ecological Information

Environmental Overview: Environmental properties of the formulation have not been investigated. The following information is available for the individual ingredients. The active ingredient in this formulation is Very toxic to aquatic organisms. May have long-term effects on the aquatic environment. Releases to the environment should be avoided.

Toxicity:

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

Moxidectin

<table>
<thead>
<tr>
<th>Species/Marine Pollutant</th>
<th>LC50/EC50</th>
<th>Duration</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lepomis macrochirus (Bluegill Sunfish)</td>
<td>LC50</td>
<td>96 Hours</td>
<td>0.62 ppb</td>
</tr>
<tr>
<td>Oncorhynchus mykiss (Rainbow Trout)</td>
<td>LC50</td>
<td>96 Hours</td>
<td>0.16 ppb</td>
</tr>
<tr>
<td>Daphnia Magna (Water Flea)</td>
<td>EC50</td>
<td>48 Hours</td>
<td>30 ppt</td>
</tr>
<tr>
<td>Selenastrum capricornutum (Green Alga)</td>
<td>EC50</td>
<td>72 Hours</td>
<td>&gt; 87 ppb</td>
</tr>
</tbody>
</table>

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: No data available

Moxidectin

Predicted 7 Log D 8.74

Mobility in Soil: No data available

Section 13 - Disposal Considerations

Disposal: Dispose of small quantities and empty containers by wrapping with paper and putting in garbage. For larger quantities use a commercial waste disposal service.

Section 14 - Transport Information

ADG: Not regulated for transportation due to Special Provision AU01

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 packaging’s 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.

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

Please refer to the applicable dangerous goods regulations for additional information. Transport according to the requirements of the appropriate regulatory body.
Section 15 - Regulatory Information

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

Poison Schedule

Schedule 4

Sodium chloride
Australia (AICS): Present

Methylparaben
Australia (AICS): Present

Propylparaben
Australia (AICS): Present

Butylated hydroxytoluene
Australia (AICS): Present

Section 16 - Other Information

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

Acronyms:

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

This version issued: 22 September 2021 and is valid for 5 years from this date

Supersedes: Revision issued 1 October 2016

Revision History:

<table>
<thead>
<tr>
<th>Date of Revision</th>
<th>Reason</th>
</tr>
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<tbody>
<tr>
<td>October 2015</td>
<td>Update to Zoetis name and address</td>
</tr>
<tr>
<td>01 Oct 2016</td>
<td>Update to GHS format.</td>
</tr>
<tr>
<td>22 Sep 2021</td>
<td>Periodical revision</td>
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Contact Points:

Zoetis: 1800 814 883
Police and Fire Brigade: Dial 000

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Poisons Information Centre: 13 11 26 from anywhere in Australia, (0800 764 766 in New Zealand)
If ineffective: Dial Poisons Information Centre
(13 11 26 from anywhere in Australia)

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)
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End of Safety Data Sheet