1. IDENTIFICATION: PRODUCT IDENTIFIER AND CHEMICAL IDENTITY

Product Name: ABAGUARD PLUS SELENIUM HIGH VOLUME ORAL DRENCH FOR SHEEP
Other Means of Identification: Mixture
APVMA Number: 64970
Recommended Use of the Chemical and Restriction on Use: Veterinary drench for sheep

Details of Manufacturer or Importer:
Landmark Operations Limited
Suite 3, Level 1, Building B
11 Talavera Road
Macquarie Park NSW 2113
Phone Number: 02 9889 5400
Emergency telephone number: National Poison Information Centre: 13 11 26

2. HAZARDS IDENTIFICATION

Hazardous Nature:
Classified as Hazardous according to the Globally Harmonised System of Classification and Labelling of Chemicals (GHS) and Safe Work Australia criteria.
Not classified as Dangerous Goods according to the Australian Code for the Transport of Dangerous Goods by Road and Rail. (7th edition)

- health hazard

STOT RE 2
H373 May cause damage to the central nervous system and the peripheral nervous system through prolonged or repeated exposure.

- environment

Aquatic Acute 1
H400 Very toxic to aquatic life.

Aquatic Chronic 1
H410 Very toxic to aquatic life with long lasting effects.

Acute Toxicity (Oral) 4
H302 Harmful if swallowed.

Acute Toxicity (Inhalation) 4
H332 Harmful if inhaled.

Signal Word Warning

Hazard Statements
H302+H332 Harmful if swallowed or if inhaled.
H373 May cause damage to the central nervous system and the peripheral nervous system through prolonged or repeated exposure.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary Statements
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P273 Avoid release to the environment.
P264 Wash hands thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.

(Contd. on page 2)
SAFETY DATA SHEET
According to Safe Work Australia

Product Name: ABAGUARD PLUS SELENIUM HIGH VOLUME ORAL DRENCH FOR SHEEP

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P314 Get medical advice/attention if you feel unwell.
P330 Rinse mouth.
P391 Collect spillage.
P501 Dispose of contents/container in accordance with local/regional/national regulations.

3. COMPOSITION AND INFORMATION ON INGREDIENTS

Chemical Characterization: Mixtures
Description: Mixture of substances listed below with nonhazardous additions.

<table>
<thead>
<tr>
<th>Hazardous Components:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>71751-41-2 abamectin (combination of avermectin B1a and avermectin B1b) (ISO)</td>
<td>0.8%</td>
</tr>
<tr>
<td>Acute Toxicity (Oral) 3, H301; Acute Toxicity (Inhalation) 3, H331; Toxic To Reproduction 2, H361; STOT RE 1, H372; Aquatic Acute 1, H400; Aquatic Chronic 1, H410</td>
<td></td>
</tr>
<tr>
<td>13410-01-0 Sodium selenate</td>
<td>0.4%</td>
</tr>
<tr>
<td>Acute Toxicity (Oral) 2, H300; Acute Toxicity (Inhalation) 2, H330; STOT RE 2, H373</td>
<td></td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Seek medical attention if breathing problems develop.

Skin Contact:
In case of skin irritation, immediately remove contaminated clothing and wash affected areas with water and soap. Seek medical attention if symptoms persist.

Eye Contact:
In case of eye irritation, hold eyelids open and rinse with water for at least 15 minutes. Seek immediate medical attention.

Ingestion:
If swallowed, do not induce vomiting. Immediately rinse mouth with water. Never give anything by mouth to an unconscious person. Seek immediate medical attention.

Symptoms Caused by Exposure:
Inhalation: Harmful by inhalation. High doses may cause nervous system depression, incoordination, tremors, lethargy, coma and death from respiratory failure.
Skin Contact: May cause mild skin irritation.
Eye Contact: May cause mild eye irritation.
Ingestion: Harmful if swallowed. May cause irritation to mucous membranes. May cause vomiting and pupil dilation.

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media: Use fire extinguishing methods suitable to surrounding conditions.

Specific Hazards Arising from the Chemical:
Hazardous combustion products include oxides of carbon, sodium and selenium compounds, water and smoke.
The product is not combustible.

Special Protective Equipment and Precautions for Fire Fighters:
When fighting a major fire wear self-contained breathing apparatus and protective equipment.
6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures:
Wear appropriate respiratory protection and protective clothing. Evacuate all non-essential personnel from affected area. Do not breathe vapours. Ensure adequate ventilation.

Environmental Precautions:
In the event of a major spill, prevent spillage from entering drains or water courses.

Methods and Materials for Containment and Cleaning Up:
Stop leak if safe to do so and absorb spill with sand, earth, vermiculite or some other absorbent material. Collect the spilled material and place into a suitable container for disposal.

7. HANDLING AND STORAGE

Precautions for Safe Handling:
Use of safe work practices are recommended to avoid eye or skin contact and inhalation of vapours. Food, beverages and tobacco products should not be stored or consumed where this material is in use. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storage or re-use. Provide eyewash fountains and safety showers in close proximity to points of potential exposure.

Conditions for Safe Storage:
Store in a cool, dry and well ventilated area. Keep in original container tightly closed when not in use. Protect from direct sunlight. Keep away from strong oxidising agents, strong acids and strong bases.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

<table>
<thead>
<tr>
<th>Exposure Standards:</th>
<th>13410-01-0 Sodium selenate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Selenium compounds (as Se)</td>
<td>NES TWA 0.1 mg/m³</td>
</tr>
</tbody>
</table>

Engineering Controls:
Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapour below occupational exposure standards.

Respiratory Protection:
Use an approved vapour respirator under conditions where exposure to the substance is apparent (e.g. generation of high concentrations of mist or vapour, inadequate ventilation, development of respiratory tract irritation) and engineering controls are not feasible. See Australian Standards AS/NZS 1715 and 1716 for more information.

Skin Protection:
PVC or rubber gloves. See Australian/New Zealand Standard AS/NZS 2161 for more information. When selecting gloves for use against certain chemicals, the degradation resistance, permeation rate and permeation breakthrough time should be considered. Occupational protective clothing (depending on conditions in which it has to be used, in particular as regards the period for which it is worn, which shall be determined on the basis of the seriousness of the risk, the frequency of exposure to the risk, the characteristics of the workstation of each worker and the performance of the protective clothing). See Australian/New Zealand Standard AS/NZS 4501 for more information.

Eye and Face Protection:
Eye and face protectors for protection against splashing materials or liquids. See Australian/New Zealand Standard AS/NZS 1337 for more information.
9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:
Form: Liquid
Colour: Clear yellow
Odour: Characteristic
Odour Threshold: No information available
pH-Value: No information available
Melting point/Melting range: ~0 °C
Initial Boiling Point/Boiling Range: ~100 °C (at 100 kPa)
Flash Point: Not applicable
Flammability: Product is not flammable.
Auto-ignition Temperature: Not applicable
Decomposition Temperature: No information available
Explosion Limits:
Lower: Not applicable
Upper: Not applicable
Vapour Pressure at 20 °C: 2.37 kPa (water vapour pressure)
Relative Density: No information available
Vapour Density: As for water.
Evaporation Rate: As for water.
Solubility in Water: Completely soluble

10. STABILITY AND REACTIVITY

Possibility of Hazardous Reactions: Hazardous polymerisation will not occur.
Chemical Stability: Stable at ambient temperature and under normal conditions of use.
Conditions to Avoid: Direct sunlight.
Incompatible Materials: Strong oxidising agents, strong acids and strong bases.
Hazardous Decomposition Products:
Oxides of carbon, sodium and selenium compounds, water and smoke.

11. TOXICOLOGICAL INFORMATION

Toxicity:
LD₅₀/LC₅₀ Values Relevant for Classification:
Abamectin:
LD50 (oral) 10 mg/kg (rat)
LD50 (oral) 14- >80 mg/kg (mice)
LD50 (dermal) >330 mg/kg (rabbit)

Acute Health Effects
Inhalation: Harmful by inhalation.
Skin: May cause mild skin irritation.
Eye: May cause mild eye irritation.
Ingestion: Harmful if swallowed. May cause irritation to mucous membranes.

Skin Corrosion / Irritation: Based on classification principles, the classification criteria are not met.
Serious Eye Damage / Irritation: Based on classification principles, the classification criteria are not met.
Respiratory or Skin Sensitisation: Based on classification principles, the classification criteria are not met.
Germ Cell Mutagenicity: Based on classification principles, the classification criteria are not met.
Carcinogenicity: This product does NOT contain any IARC listed chemicals.

Reproductive Toxicity: Based on classification principles, the classification criteria are not met.

Specific Target Organ Toxicity (STOT) - Single Exposure:
Based on classification principles, the classification criteria are not met.

Specific Target Organ Toxicity (STOT) - Repeated Exposure:
May cause damage to organs through prolonged or repeated exposure.

Aspiration Hazard: Based on classification principles, the classification criteria are not met.

Chronic Health Effects:
Prolonged or repeated exposure may cause nervous system depression, pupil dilation, lethargy and tremors. May cause dermatitis, changes to the spleen and changes in blood formation.

Existing Conditions Aggravated by Exposure: No information available

Additional toxicological information:
The Australian Acceptable Daily Intake (ADI) for abamectin for a human is 0.0005 mg/kg/day, set for the public for daily, lifetime exposure. This is based on the NOEL of 0.5 mg/kg/day, the level determined to show no effects during long term exposure for the most sensitive indicators and the most sensitive species. (Ref: Comm. Dept. of Health and Ageing Office of Chemical Safety, 'ADI List', June 2014).

12. ECOLOGICAL INFORMATION

Ecotoxicity:
Abamectin is practically nontoxic to birds.
Abamectin is toxic to bees.

Aquatic toxicity:
Toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.
Abamectin:
LC50/ 96 h 0.003 mg/L (rainbow trout)
LC50/ 96 h 0.0096 mg/L (bluegill sunfish)
LC50/ 96 h 0.015 mg/L (sheepshead minnow)
LC50/ 96 h 0.024 mg/L (channel catfish)
LC50/ 96 h 0.042 mg/L (carp)
LC50/ 96 h 0.0016 mg/L (pink shrimp)
LC50/ 96 h 430 mg/L (eastern oyster)
LC50/ 96 h 153 mg/L (blue crab)
LC50/ 48 h 0.003 mg/L (daphnia)

Persistence and Degradability:
Abamectin is readily degradable in soils. The half-life on the soil surface is 8 hours to 1 day. The half-life in soil is 2 weeks to 2 months in dark conditions.

Bioaccumulative Potential: Abamectin is not expected to bioaccumulate.

Mobility in Soil:
Abamectin has a strong tendency to adsorb to soil particles. It has low mobility in soil and is not expected to leach.

Other adverse effects: No information available

13. DISPOSAL CONSIDERATIONS

Disposal Methods and Containers: Dispose according to applicable local and state government regulations.
SAFETY DATA SHEET
According to Safe Work Australia

Product Name: ABAGUARD PLUS SELENIUM HIGH VOLUME ORAL DRENCH FOR SHEEP

Special Precautions for Landfill or Incineration:
Please consult your state Land Waste Management Authority for more information.

14. TRANSPORT INFORMATION

UN Number
ADG Not regulated
IMDG, IATA UN3082

Proper Shipping Name
ADG Not regulated
IMDG, IATA ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

Dangerous Goods Class
ADG Class: Not regulated
IMDG Class: 9 Miscellaneous dangerous substances and articles.

Packing Group:
ADG Not regulated
IMDG, IATA III

Marine pollutant:
Yes
Symbol (fish and tree)

EMS Number:
F-A,S-F

Hazchem Code:
.3Z

Special Provisions:
179, 274, 331, 335, AU01

Limited Quantities:
5L

Packagings & IBCs - Packing Instruction:
P001, IBC03, LP01

Packagings & IBCs - Special Packing Provisions: PP1

Portable Tanks & Bulk Containers - Instructions: T4

Portable Tanks & Bulk Containers - Special Provisions: TP1, TP29

15. REGULATORY INFORMATION

Australian Inventory of Chemical Substances:
71751-41-2 abamectin (combination of avermectin B1a and avermectin B1b) (ISO)
13410-01-0 Sodium selenate

Standard for the Uniform Scheduling of Drugs and Poisons (SUSMP) - Poison Schedule:
Poisons Schedule: 6

16. OTHER INFORMATION

Date of Preparation or Last Revision: 30.09.2016
Prepared by: MSDS.COM.AU Pty Ltd www.msds.com.au

Abbreviations and acronyms:
ADG: Australian Dangerous Goods
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
CAS: Chemical Abstracts Service (division of the American Chemical Society)
LC₅₀: Lethal concentration, 50 percent
LD₅₀: Lethal dose, 50 percent
IARC: International Agency for Research on Cancer
STEL: Short Term Exposure Limit
TWA: Time Weighted Average
NES: National Exposure Standard (Safe Work Australia - Workplace Exposure Standards For Airborne Contaminants)
Acute Toxicity (Oral) 2: Acute toxicity – Category 2
Acute Toxicity (Oral) 3: Acute toxicity – Category 3
Acute Toxicity (Oral) 4: Acute toxicity – Category 4
STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1
STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2
Aquatic Acute 1: Hazardous to the aquatic environment, short-term (Acute). Category 1
Aquatic Chronic 1: Hazardous to the aquatic environment, long-term (Chronic). Category 1

Disclaimer
This SDS is prepared in accord with the Safe Work Australia document “Code of Practice for the Preparation of Safety Data Sheets for Hazardous Chemicals - December 2011”
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