1 Identification

Product Name: PASTORAL AG FLUAZURON POUR-ON TICK DEVELOPMENT INHIBITOR FOR CATTLE

Other Means of Identification: Mixture

Recommended Use of the Chemical and Restriction on Use: Agricultural insecticide

Details of Manufacturer or Importer:
Titan Ag Pty Ltd
Suite 15 / 16 Princes Street
Newport NSW 2106

Phone Number: 02 9999 6655

Emergency telephone number: 02 9999 6655

2 Hazard(s) 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)

corrosion
Skin Corrosion/Irritation 1B H314 Causes severe skin burns and eye damage.
Serious Eye Damage/Irritation 1 H318 Causes serious eye damage.

environment
Aquatic Acute 1 H400 Very toxic to aquatic life.
Aquatic Chronic 1 H410 Very toxic to aquatic life with long lasting effects.

Skin Sensitisation 1 H317 May cause an allergic skin reaction.

Flammable Liquids 4 H227 Combustible liquid.

Signal Word
Danger

Hazard Statements
H227 Combustible liquid.
H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary Statements
P210 Keep away from flames and hot surfaces. No smoking.
P260 Do not breathe dusts or mists.
P264 Wash hands thoroughly after handling.
P272 Contaminated work clothing should not be allowed out of the workplace.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

(Contd. on page 2)
Safety Data Sheet
according to WHS Regulations

Product Name: PASTORAL AG FLUAZURON POUR-ON TICK DEVELOPMENT INHIBITOR FOR CATTLE

(Contd. of page 1)

P301+P330+P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
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 CENTER/doctor.
P321 Specific treatment (see on this label).
P362+P364 Take off contaminated clothing and wash it before reuse.
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
P363 Wash contaminated clothing before reuse.
P370+P378 In case of fire: Use to extinguish: CO2, powder or water spray.
P391 Collect spillage.
P403+P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.
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.

Hazardous Components:

<table>
<thead>
<tr>
<th>CAS</th>
<th>Chemical</th>
<th>Hazard Classifications</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>2687-96-9</td>
<td>1-dodecyl-2-pyrrolidone</td>
<td>Skin Corrosion/Irritation 1B, H314; Aquatic Acute 1, H400; Aquatic Chronic 1, H410; Skin Sensitisation 1, H317</td>
<td>10%</td>
</tr>
<tr>
<td>2687-94-7</td>
<td>1-octyl-2-pyrrolidone</td>
<td>Skin Corrosion/Irritation 1B, H314; Aquatic Chronic 2, H411</td>
<td>10%</td>
</tr>
<tr>
<td>86811-58-7</td>
<td>Fluazuron</td>
<td>Aquatic Acute 1, H400; Aquatic Chronic 1, H410</td>
<td>2.5%</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 contact, immediately remove contaminated clothing and wash affected areas with water and soap for at least 20 minutes. Seek medical attention.

Eye Contact:
In case of eye contact, hold eyelids open and rinse with water for at least 20 minutes. Seek medical attention.

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

Symptoms Caused by Exposure:
Inhalation: May cause respiratory irritation or burns. May cause coughing, breathing difficulties and headache. May cause pulmonary oedema.
Skin Contact: Causes severe skin burns and ulceration. May cause an allergic skin reaction or rash.
Eye Contact: Causes serious eye damage, conjunctivitis, opaque cornea and possible blindness.
Ingestion: May cause serious burns, inflammation, blistering and ulceration to the gastrointestinal system.

(Contd. on page 3)
5 Fire Fighting Measures

Suitable Extinguishing Media: Water fog, foam, dry chemical or carbon dioxide.

Specific Hazards Arising from the Chemical:
Hazardous combustion products include oxides of carbon and nitrogen, other nitrogen compounds, hydrogen cyanide, hydrogen chloride, other chlorine compounds, hydrogen fluoride, other fluorine compounds, water and smoke.
Combustible liquid.
Vapours are heavier than air and may travel considerable distances to a source of ignition where they can ignite, flashback, or explode.
Closed containers may explode when exposed to extreme heat. Containers close to fire should be removed if safe to do so. Use water spray to cool fire exposed containers.

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 approved respiratory protection, chemical resistant gloves, protective clothing and safety boots.
Evacuate all non-essential personnel from affected area. Do not breathe vapours. Ensure adequate ventilation. Extinguish all sources of ignition. Avoid sparks and open flames. No smoking.

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. Use only outdoors or in a well-ventilated area.
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. Contaminated work clothing must not be allowed out of the workplace. 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 container tightly closed when not in use. Protect from heat, sparks, open flames, hot surfaces and direct sunlight. Keep away from strong oxidising agents, strong acids and strong bases.

8 Exposure Controls and Personal Protection

Exposure Standards:
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

Engineering Controls: Ensure adequate ventilation of the working area.

Respiratory Protection:
Respiratory protection is not required under normal use conditions.
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 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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Liquid</td>
</tr>
<tr>
<td>Form</td>
<td>Liquid</td>
</tr>
<tr>
<td>Colour</td>
<td>Yellow</td>
</tr>
<tr>
<td>Odour</td>
<td>Slight</td>
</tr>
<tr>
<td>Odour Threshold</td>
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</tr>
<tr>
<td>pH-Value</td>
<td>No information available</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>No information available</td>
</tr>
<tr>
<td>Initial Boiling Point/Boiling Range</td>
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</tr>
<tr>
<td>Flash Point</td>
<td>92 °C</td>
</tr>
<tr>
<td>Flammability</td>
<td>Combustible</td>
</tr>
<tr>
<td>Auto-ignition Temperature</td>
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</tr>
<tr>
<td>Decomposition Temperature</td>
<td>No information available</td>
</tr>
<tr>
<td>Explosion Limits</td>
<td>No information available</td>
</tr>
<tr>
<td>Lower</td>
<td>No information available</td>
</tr>
<tr>
<td>Upper</td>
<td>No information available</td>
</tr>
<tr>
<td>Vapour Pressure</td>
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</tr>
<tr>
<td>Relative Density</td>
<td>1.04</td>
</tr>
<tr>
<td>Vapour Density</td>
<td>No information available</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>No information available</td>
</tr>
<tr>
<td>Solubility in Water</td>
<td>No information available</td>
</tr>
<tr>
<td>Partition Coefficient (n-octanol/water)</td>
<td>No information available</td>
</tr>
<tr>
<td>Viscosity at 25 °C</td>
<td>15-30 mPa.s</td>
</tr>
</tbody>
</table>

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: Heat, sparks, open flames, hot surfaces and direct sunlight.

Incompatible Materials: Strong oxidising agents, strong acids and strong bases.

Hazardous Decomposition Products:
Oxides of carbon and nitrogen, other nitrogen compounds, hydrogen cyanide, hydrogen chloride, other chlorine compounds, hydrogen fluoride, other fluorine compounds, water and smoke.
11 Toxicological Information

Toxicity:

<table>
<thead>
<tr>
<th>LD₅₀/LC₅₀ Values Relevant for Classification:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
</tr>
<tr>
<td>Dermal</td>
</tr>
</tbody>
</table>

CAS: 2687-94-7 1-octyl-2-pyrrolidone

| Oral           | LD₅₀ 2,050 mg/kg (rat) |
| Dermal         | LD₅₀ >2,000 mg/kg (rabbit) |

Acute Health Effects

Inhalation: May cause respiratory irritation or burns. May cause coughing, breathing difficulties and headache. May cause pulmonary oedema.

Skin: Causes severe skin burns and ulceration. May cause an allergic skin reaction or rash.

Eye: Causes serious eye damage, conjunctivitis, opaque cornea and possible blindness.

Ingestion: May cause serious burns, inflammation, blistering and ulceration to the gastrointestinal system.

Skin Corrosion / Irritation: Causes severe skin burns.

Serious Eye Damage / Irritation: Causes serious eye damage.

Respiratory or Skin Sensitisation: May cause an allergic skin reaction.

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

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

Chronic Health Effects: No information available

Existing Conditions Aggravated by Exposure: No information available

Additional toxicological information:
The Australian Acceptable Daily Intake (ADI) for Fluazuron for a human is 0.04 mg/kg/day, set for the public for daily, lifetime exposure. This is based on the NOAEL of 4.27 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: Australian Pesticides and Veterinary Medicines Authority, 'Acceptable Daily Intakes for Agricultural and Veterinary Chemicals', 2018).

12 Ecological Information

Ecotoxicity: LD₅₀ >164 μg/bee (oral)

Aquatic toxicity:
Very Toxic to aquatic life with long lasting effects.

CAS: 86811-58-7 Fluazuron
EC₅₀/48 h 0.0006 mg/l (daphnia)
Persistence and Degradability: This product is biodegradable and will not accumulate in water or soil.

Bioaccumulative Potential: No further relevant information available.

Mobility in Soil: No further relevant information available.

Other adverse effects: No further relevant information available.

13 Disposal Considerations

Disposal Methods and Containers: Dispose according to applicable local and state government regulations.

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

14 Transport Information

UN Number Not regulated
Proper Shipping Name Not regulated
Dangerous Goods Class Not regulated
Packing Group: Not regulated

15 Regulatory Information

Australian Inventory of Chemical Substances:
CAS: 2687-96-9 1-dodecyl-2-pyrrolidone
CAS: 2687-94-7 1-octyl-2-pyrrolidone

Standard for the Uniform Scheduling of Drugs and Poisons (SUSMP) - Poison Schedule:
Poisons Schedule: 5

16 Other Information

Date of Preparation or Last Revision: 20.07.2018
Prepared by: MSDS.COM.AU Pty Ltd www.msds.com.au

Abbreviations and acronyms:
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
CAS: Chemical Abstracts Service (division of the American Chemical Society)
EC₅₀: Lethal concentration, 50 percent
LC₅₀: 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)
Flammable Liquids 4: Flammable liquids – Category 4
Skin Corrosion/Irritation 1B: Skin corrosion/irritation – Category 1B
Serious Eye Damage/Irritation 1: Serious eye damage/eye irritation – Category 1
Skin Sensitisation 1: Skin sensitisation, Hazard Category 1
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
Aquatic Chronic 2: Hazardous to the aquatic environment, long-term (Chronic). Category 2

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 - February 2016”
The information contained in this safety data sheet is provided in good faith and is believed to be accurate at the date of issuance. Titan Ag Pty Ltd makes no representation of the accuracy or comprehensiveness of the
Product Name: PASTORAL AG FLUAZURON POUR-ON TICK DEVELOPMENT INHIBITOR FOR CATTLE

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