SAFETY DATA SHEET

SECTION 1: IDENTIFICATION OF THE SUBSTANCE AND SUPPLIER	
Product name:	REFLEX-F Pour-on
Recommended use:	For the treatment and control of internal parasites, including mature and immature liver fluke, and lice in cattle.
Restrictions of use:	Refer to Section 15
Company name:	Alleva Animal Health Limited
Address:	116a Harris Road, East Tamaki 2013, Auckland, New Zealand
Telephone:	0064-9-4181405
Emergency telephone number:	National Poisons Centre: 0800 764 766 (0800 POISON) Fire Service, Ambulance: Dial 111
Date of Preparation	27 February 2025 v2

SECTION 2: HAZARDS IDENTIFICATION

This substance is hazardous according to the EPA Hazardous Substances (Classification) Notice 2020

EPA Approval No: Veterinary Medicines (non-dispersive closed system application) – HSR100758

Pictograms

Signal Word: **Warning**

GHS Classification and Category	Hazard Code	Hazard Statement
Acute oral toxicity Cat. 4	H302	Harmful if swallowed.
Eye irritation Cat. 2	H319	Causes serious eye irritation.
Skin sensitisation Cat. 1	H317	May cause an allergic skin reaction.
Reproductive toxicity Cat. 2	H361	Suspected of damaging fertility or the unborn child.
Effects on or via lactation	H362	May cause harm to breast-fed children.

Specific target organ toxicity – single exposure Cat. 2	H371	May cause damage to organs.
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 Cat. 1	H400	Very toxic to aquatic life.
Hazardous to the aquatic environment chronic Cat. 1	H410	Very toxic to aquatic life with long lasting effects.
Hazardous to soil organisms	H421	Hazardous to soil organisms
Hazardous to terrestrial vertebrates	H431	Hazardous to terrestrial vertebrates
Hazardous to terrestrial invertebrates	H441	Hazardous to terrestrial invertebrates

Prevention Code	**Prevention Statement**
P102	Keep out of reach of children.
P103	Read label before use.
P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe dust, fumes, gas, mist, vapours or spray.
P263	Avoid contact during pregnancy, while nursing.
P264	Wash hands thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P272	Contaminated work clothing should not be allowed out of the workplace.
P273	Avoid release to the environment.
P280	Wear protective clothing as detailed in Section 8.
P281	Use personal protective equipment as required.

Response Code	**Response Statement**
P101	If medical advice is needed, have product container or label at hand.
P314	Get medical advice/attention if you feel unwell.
P330	Rinse mouth.
P363	Wash contaminated clothing before reuse.
P391	Collect spillage.
P301 + P312	IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P305 + P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P309 + P311	IF exposed or if you feel unwell: Call a POISON CENTER or doctor/physician.

P333 + P313	If skin irritation or rash occurs: Get medical advice/attention.
P337 + P313	If eye irritation persists: Get medical advice/attention.

Storage Code	**Storage Statement**
P405	Store locked up.

Disposal Code	**Disposal Statement**
P501	Dispose of according to Local Regulations or Authorities

SECTION 3: COMPOSITION

Product Components:		
Name	**CAS #**	**Concentration**
Abamectin	71751-41-2	5g/l
Triclabendazole	68786-66-3	300g/l
2-(2-butoxyethoxy)-ethanol	112-34-5	10-30
Benzenemethanol	100-51-6	10-30
Non hazardous		To 1L

SECTION 4: FIRST AID MEASURES

First Aid	**Skin Contact:** Wash with plenty of soap and water. Take off contaminated clothing and wash before re-use. If skin irritation or rash occurs: get medical advice/attention. **Eye Contact:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice. **Ingestion:** If swallowed, immediately flush mouth with water. Never give anything to the mouth of an unconscious person. Call a POISON CENTER or doctor/physician if you feel unwell. **Inhaled:** Remove person to fresh air. Remove contaminated clothing and loosen remaining clothing. Allow person to assume most comfortable position and keep warm. Keep at rest until fully recovered. Get medical advice if breathing becomes difficult or if you feel unwell.
Most important symptoms and effects,	Ingestion: Toxic if swallowed. Inhalation: Not applicable. Skin: May cause an allergic skin reaction. Eye: Causes serious eye irritation. Chronic: Suspected of damaging fertility or the unborn child. May cause harm to breast-fed children.

both acute and delayed	Causes damage to organs (oral) through prolonged or repeated exposure.
Notes to Doctor	Apply symptomatic therapy (no specific antidote). Note the nature of the product (potential developmental toxin, organ toxin, irritant).

SECTION 5: FIRE FIGHTING MEASURES

Type of hazard:	This material is non-flammable or combustible.
Fire hazard properties:	Hazardous fumes when heated to decomposition.
Extinguishing media and methods:	Use water spray or regular foam.
Hazchem code:	**3Z**
Recommended protective clothing for firefighters:	When fighting a major fire wear full protective clothing including breathing apparatus. Do not allow fire water to enter drains.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions:	Personnel involved in clean-up should wear appropriate personal protective equipment as detailed in Section 8 to minimise exposure. Restrict access to contaminated area.
Environmental Precautions:	Prevent material from entering surface water drains or waterways.
Procedure for Spills:	Contain the spill and prevent further dispersion. Retrieve intact containers from site. Place damaged containers into containment devices. Absorb spills with inert material and place in waste containers. Wash the area with water and absorb with further inert material. Collect spilled material and place in sealable containers for subsequent disposal.
Procedure for Disposal:	Dispose of according to Local Regulations detailed in Section 13.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling:	• Read label before use. • Obtain special instructions before use. • Do not handle until all safety precautions have been read and understood. • Do not breathe dust, fumes, gas, mist, vapours or spray. • Avoid contact during pregnancy, while nursing. • Wash hands thoroughly after handling. • Do not eat, drink or smoke when using this product. • Contaminated work clothing should not be allowed out of the workplace. • Avoid release to the environment. • Wear protective clothing as detailed in Section 8. • Use personal protective equipment as required. • Apply with well-maintained and calibrated equipment.
Certified handlers:	Not Required
Conditions for safe storage:	• Store away from incompatible materials listed in Section 10. • Keep out of reach of children. • Store locked up. • Store in cool and dry place and keep away from strong light and heat. • Store below 25 °C in a cool place with top secure, away from direct sunlight.

SECTION 8: EXPOSURE CONTROL/PERSONAL PROTECTION

WORKPLACE EXPOSURE STANDARDS (provided for guidance only)

	TWA		STEL	
Substance	**ppm**	**mg/m³**	**ppm**	**mg/m³**

No substance has exposure limits

Workplace Exposure Standard – Time Weighted Average (WES-TWA). The time-weighted average exposure standard designed to protect the worker from the effects of long-term exposure. Workplace Exposure Standard – Short-Term Exposure Limit (WESSTEL). The 15-minute average exposure standard. Applies to any 15- Minute period in the working day and is designed to protect the worker against adverse effects of irritation, chronic or irreversible tissue change, or narcosis that may increase the likelihood of accidents. The WES-STEL is not an alternative to the WES-TWA; both the short-term and time-weighted average exposures apply. Workplace Exposure Standards and Biological Exposure Indices FEB 2025 15TH EDITION.

Engineering controls:	Ensure that ventilation maintains dust levels below WES.
Personal protection:	**Respiratory protection:** Not required. **Hand protection:** Wear impervious gloves. **Eye protection:** Wear eye protection. **Skin:** Overalls with long sleeves.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Clear brown liquid
Odour	Not available
Odour Threshold	Not applicable
pH	Not available
Boiling Point	Ca 210^0C
Melting Point	Not applicable
Freezing Point	Not applicable
Flash Point	Not applicable
Flammability	Non flammable
Upper and Lower Explosive Limits	Not applicable
Vapour Pressure	Not applicable
Vapour Density	Not applicable
Specific Gravity	~1.11 g/ml
Water Solubility	Triclabendazole is soluble in water
Partition Coefficient:	Not applicable
Auto-ignition Temperature	Not applicable
Decomposition Temperature	Not applicable
Kinematic Viscosity	Not available

SECTION 10: STABILITY AND REACTIVITY

Stability of the substance:	This product is stable under normal conditions.
Conditions to avoid:	No specific conditions to avoid.
Material to avoid:	No specific materials to avoid.
Hazardous decomposition products:	No hazardous products are expected, except when heated to decomposition.

SECTION 11: TOXICOLOGICAL INFORMATION

Acute effects:	
Swallowed **Dermal** **Inhalation** **Skin** **Eye**	Toxic if swallowed. Not applicable. Not applicable. May cause an allergic skin reaction. Causes serious eye irritation.
Chronic and long-term effects:	
Reproductive **Systemic**	Suspected of damaging fertility or the unborn child. May cause harm to breast-fed children.
Carcinogenicity	Not applicable.
Aspiration	Not applicable.
Germ Cell Mutagenicity	Not applicable.
STOT/SE	Causes damage to organs.
STOT/RE	May cause damage to organs (oral) through prolonged or repeated exposure.

Abamectin possibly may affect development and/or reproduction.
Abamectin may have effects on/or via lactation.
Triclabendazole possibly may affect the liver and alimentary system. The solvent, 2-(2-butoxyethoxy)-ethanol, possibly may affect the kidney (oral) and liver (inhalation).

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Abamectin: Abamectin is an acute oral toxin [LD50 (oral) 8.7-12.8 mg/kg]. Ingestion of a single large dose of abamectin by humans (-100 mg/kg) was associated with coma, hypotension and respiratory failure. Clinical signs in repeated-dose laboratory animal studies included ataxia, tremor, mydriasis, emesis, pupil dilation and coma. High doses produced respiratory failure and deaths. The critical adverse effects in multigenerational reproductive studies were mortality and reduced weight gain of pups in early lactation (NOAEL 0.12 mg/kg/d).

Benzenemethanol: An organic alcohol that is used as a preservative [LD50 (oral, rabbit) 1050mg/kg; LD50 (dermal, rabbit) 2000mg/kg]. It is a known skin sensitiser (contact dermatitis) and a moderate eye irritant.

Triclabendazole: Benzimidazoles prevent tubulin polymerization or spindle movement and their administration can result in aneuploidy. Triclabendazole has is an acute oral toxin [LD50 (oral, rats & mice) >8 g/kg; LD50 (oral, rabbit) 206 mg/kg]. In the guinea pig optimisation test, a positive sensitisation reaction was

reported after intracutaneous injection, but not after epidermal challenge. Single oral doses of 10 mg/kg are well tolerated in humans. In repeated dose studies main effects were
hepatotoxicity (increased liver weight and histopathological changes) and growth retardation (LOAEL 3.5 mg/kg/d).

Ethanol, 2-(2-butoxyethoxy)-: Low to moderate acute toxicity in laboratory species [LD50 (oral) 2000-9600 mg/kg; LD50 (dermal) 2700 mg/kg]. Repeated oral dose study in rats reported nephrotoxicity (oral LOAEL 51 mg/kg/d). Chronic inhalation study in rats reported hepatotoxicity (inhalation NOAEL 0.04 mg/L/d). Slightly irritating to skin and irritating to eyes.

SECTION 12: ENVIRONMENTAL INFORMATION

Very toxic to the aquatic organisms with long lasting effects.
Hazardous to soil organisms
Hazardous to terrestrial vertebrates
Hazardous to terrestrial invertebrates

Persistence and degradability	No data available
Bioaccumulation	No data available
Mobility in Soil	No data available
Other adverse effects	No data available
Precautions	Do not allow to enter waterways

Abamectin:
Abamectin is a highly effective insecticide and acaricide produced by the soil microbe *Streptomycetes avermitilis*. It acts by stimulating the release of gamma-aminobutyric acid, an inhibitory neurotransmitter, causing paralysis of the parasite. It is highly toxic to invertebrates in the aquatic, soil and terrestrial environments. Aquatic organisms: Abamectin is highly toxic to fish and extremely toxic to aquatic invertebrates [LC_{50} Rainbow trout is 3.6 ppb (96hrs); EC_{50} *Daphnia magna* 0.34 ppb (48hrs)]. Persist: yes. Soil organisms: Dung beetle Terrestrial fate value 20-40. Abamectin is toxic to mammals [LD50 (oral, rats) 8.7 mg/kg], but is less toxic to birds [LC50 Bobwhite quail >2000 mg/kg]. Abamectin is highly toxic to bees [LD50 (oral) 0.0094 µg/bee; LD50 (contact) 0.002 µg/bee].

Triclabendazole:
Triclabendazole is a potential terrestrial vertebrate toxin based on laboratory animal toxicity data [LD50 (oral, rabbit) 206 mg/kg].
Benzenemethanol: An organic alcohol that is used as a preservative. Benzenemethanol is toxic to aquatic and soil organisms [LC50 Lepomis macrochirus 10mg/mL (96hrs); EC50 Daphnia magna 55 mg/L (24hrs); EC50 microbial 50mg/L] and is a potential terrestrial vertebrate toxin based on laboratory animal toxicity data [LD50 (oral, rabbit) 1050 mg/kg].

SECTION 13: DISPOSAL CONSIDERATIONS

Product disposal:	Preferably dispose of the product by use. Otherwise dispose of product and packaging at an approved landfill or other approved facility. Burn empty container in an appropriate incinerator, if circumstances such as wind direction permit. Otherwise crush or puncture and bury in a suitable landfill.
Container Disposal	Burn empty container in an appropriate incinerator, if circumstances such as wind direction permit. Otherwise crush or puncture and bury in a suitable landfill.
Precautions:	Do NOT use container for any other purpose. Do not flush into drain or natural waterways. Do not reuse container.

SECTION 14: TRANSPORT INFORMATION

This product is classified as a Dangerous Good for transport in NZ; NZS 5433:2020

UN No.:	3082
Class:	9
Packing Group:	III
Hazchem Code:	3Z
Proper Shipping Name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S (Abamectin)
Limited Quantities Statement: If the product's individual container is below 5L, it can be transported as a non-DG as long as the product packaging is still labelled as per DG requirements and the driver is given safety information in accordance with Chapter 3.4 of the UNRTDG	

SECTION 15: REGULATORY INFORMATION

Regulatory status:	**Veterinary Medicines (non-dispersive closed system application) – HSR100758**
HSW (HS) Regulations 2017	**Trigger Quantity**
Certified Handler	Not required

Location Certificate	Not required
Tracking Trigger Quantities	Not required
Signage Trigger Quantities	100 L
Emergency Response Plan	100 L
Secondary Containment	100 L
HSNO Additional Controls (Restrictions of use)	
	Refer to Controls document on EPA website for HSR100758
ACVM Approval No:	A11995

SECTION 16: OTHER INFORMATION

Glossary

Cat Category
EC50 Median effective concentration.
EEL Environmental Exposure Limit.
EPA Environmental Protection Authority
HSNO Hazardous Substances and New Organisms.
HSW Health and Safety at Work.
LC50 Lethal concentration that will kill 50% of the test organisms inhaling or ingesting it.
LD50 Lethal dose to kill 50% of test animals/organisms.
LEL Lower explosive level.
OSHA American Occupational Safety and Health Administration.
TEL Tolerable Exposure Limit.
TLV Threshold Limit Value-an exposure limit set by responsible authority.
UEL Upper Explosive Level
WES Workplace Exposure Limit

References:

1. EPA Hazardous Substances (Safety Data Sheets) Notice 2017
2. Workplace Exposure Standards and Biological Exposure Indices FEB 2025 15th edition.
3. Assigning a hazardous substance to a HSNO Approval (Aug 2013).
4. Transport of Dangerous goods on land NZS 5433:2020
5. HSW (Hazardous Substances) Regulations 2017

This Safety Data Sheet summarises our best knowledge of the health and safety hazard information of the product and how to safely handle and use the product in the workplace. ALLEVA Animal Health Limited makes no warranty with respect hereto and disclaims all liability from reliance thereon.

Each user should read this SDS and consider the information in the context of how the product will be handled and used in the workplace including in conjunction with other products.

PLEASE READ ALL LABELS CAREFULLY BEFORE USING PRODUCT.

Issued Date: 27 February 2025 Review Date: 27 February 2030