Section 1 – Identification of the substance/preparation and the company

Product Name:	DONAGHYS MOXIPOR POUR-ON
Company:	Donaghys Ltd
Address:	16 Sheffield Crescent PO Box 20 449 Christchurch
Telephone Number:	0800 942 006
Manufacturer Product Code:	
Recommended Use:	For the treatment and control of internal and external parasites of cattle (including lactating dairy cattle) and for the treatment and control of lungworm and roundworms of deer.

Section 2 – Hazard Identification

Hazard Classes:

6.1D	Acute toxicity (oral)
6.5B	Skin irritancy
6.6B	Eye irritancy
6.8B	Reproductive/ developmental toxicant
6.8C	Reproductive/ developmental toxicant (via lactation)
6.9B	Target organ/ system toxicity
9.1A	Aquatic toxicity
9.3C	Terrestrial vertebrate ecotoxicity
9.4B	Terrestrial invertebrate ecotoxicity

EPA NZ Approval Code: HSR100758

Section 3 – Composition Information

Chemical Entity	CAS No.	Content g/l
Moxidectin	113507-06-5	150 g/L

Remaining ingredients are commercially sensitive and cannot be disclosed in a public document.

Section 4 – First Aid Measures

General information:	For advice contact the National Poisons Centre on 0800 POISON (0800 764 766), or a doctor immediately. INGESTION: If swallowed seek medical attention. Do NOT induce vomiting. EYES: If splashed in eyes wash out immediately with water. SKIN: If skin or hair contact occurs remove contaminated clothing and flush skin and hair with running water. INHALATION: Remove to fresh air. SELF-INJECTION: Seek medical attention.
Workplace facilities:	No special facilities required.
Required instructions:	Observe good work practices and avoid skin and eye contact. Wash hands and exposed skin before meals and after use. Do not eat or drink while using. Launder protective clothing separately from other clothing, and before each re-use.
Notes for medical personnel:	Apply symptomatic therapy (no specific antidote). Note the nature of the product (reproductive/developmental toxin, and sensitizer).

POISON CENTRE CONTACT: 0800 764 766 (National Poisons Information Centre)

Section 5 – Fire-fighting Measures

Fire and explosion hazards:	Non flammable, Non combustible, Non explosive
Suitable extinguishing substances:	Carbon dioxide, extinguishing powder or water jet. Fight larger fires with water jet or alcohol resistant foam.
Unsuitable extinguishing substances:	Not known.
Products of combustion:	Carbon dioxide, and if combustion is incomplete, carbon monoxide and smoke. Water. May form toxic mixtures in air and may accumulate in sumps, pits and other low-lying spaces, forming potentially explosive mixtures.
Protective equipment:	Sprayed water jet, foam, dry chemical powder, CO_2 and sand.
Hazchem code:	3Z

Section 6 – Accidental Release Measures

Emergency procedures:	Wear suitable protective clothing. Restrict access to contaminated area. Contain the spill and prevent further dispersion. Retrieve intact containers from site. Place damaged containers into containment devices. Absorb spills with inert material (e.g. sand or vermiculite), 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. Prevent contamination of water courses or sewers. Dispose of waste safely.
Containment for bulk storage:	If greater than 100L is stored in one location, secondary containment and emergency plans to manage any potential spills must be in place. **In all cases design storage to prevent discharge to storm-water drains. (If this occurs contact your regional council immediately).**

Section 7– Handling and Storage

Precautions for safe handling:	Apply with well-maintained and calibrated equipment. Handle with care.
Regulatory requirements:	N/A
Approved handler requirements	N/A
Conditions for safe storage:	Store below 25°C. Protect from light. Store locked up and out of reach of children
Store site requirements:	This substance is subject to a requirement for an emergency management plan, secondary containment and signage, whenever it is held in quantities of 100L or more. See Hazardous Substances (Emergency management) regulations 25 to 42.
Packaging:	Packaging Schedule 3 (UN Packing Group III) for quantities >1L (Hazardous Substances Packaging Regulations 2001).

Section 8 – Exposure Controls/Personal Protection

Work place exposure standards:	N/A
Application in the workplace	Prevent exposure by using engineering controls, personal protective equipment and work practices that prevent skin and eye contact.
Exposure standards outside the workplace:	TELs and EELs are not set at this time.
Engineering controls:	N/A
Personal protection:	Clothing should consist of overalls with long sleeves, and impervious gloves. Wear eye protection (e.g. glasses, goggles or face shield).
References:	N/A

Section 9 – Physical and Chemical Properties

Formulation Type:	Liquid
Appearance:	Clear blue-tinted solution
Specific gravity:	1.02 – 1.04 g/mL
Vapour pressure:	N/A
Solubility in water:	Moxidectin is insoluble in water; excipients are partly miscible in water.
Auto ignition temperature:	Not known
Hazards:	Non-flammable; non-corrosive; non-oxidizing; non-explosive.

Section 10 – Stability and Reactivity

Stability of the substance:	Stable under normal conditions of use and storage.
Conditions to avoid:	No specific conditions to avoid
Material to avoid:	No specific materials to avoid.
Hazardous decomposition products:	Hazardous decomposition products are expected when heated to decomposition temperatures. Use appropriate PPE when fighting fires.
Hazardous polymerization:	Components are not expected to form hazardous polymers.
Specific data:	N/A

Section 11 – Toxicological Information

Data and interpretation: Harmful if swallowed. Exposure may cause skin allergy. Moxidectin can affect development of the unborn child and/or reproduction. May cause harm to breast-fed children.

Summary data: ***Moxidectin***

Refer to EPA website for full details of toxicity classifications:

http://www.epa.govt.nz/search-databases/Pages/ccid-details.aspx?SubstanceID=747

Highest classification data included below:

6.4A
SPECIES: Rabbit
RESULT: Moderate
REFERENCE SOURCE: Fischer J. E. (1990i). Eye irritation study in albino rabbits with AC 301, 423. Unpublished report No. A90-22. Submitted to WHO by American Cyanamid Company, Princeton, NJ, USA. Moxidectin (WHO Food Series 36), Dr K. Woodward, Veterinary Medicines Directorate, Ministry of Agriculture, Fisheries and Food, Addlestone, Surrey, England [INCHEM]

6.9A (oral) EndPoint: LOEC
Primary Organ: Neurotoxicity (nervous system)
In a 90-day study, groups of pure-bred beagle dogs (4/sex/group) were fed diets containing 0, 10, 30 or 60 mg moxidectin/kg of feed, equal to 0, 0.3, 0.9 or 1.6 mg/kg bw/day, for 90 days At the highest dose, lacrimation, tremors, salivation, slight ataxia and a languid appearance were noted. Dose-dependent reductions in absolute body weights and food consumption were noted in dogs given the two highest doses. No other signs were noted and there were no deaths during the test period.
No abnormalities in haematological parameters, ophthalmoscopic examinations or urinalyses were seen. Organ weights were comparable with controls except in the high-dose females (decrease in absolute heart weights) and high-dose males (slight decreases in absolute pituitary and pituitary to brain weight ratios). No microscopic abnormalities were seen. The NOEL in this study was 0.3 mg/kg bw/day (Schulze, 1989b).
Groups of pure-bred beagle dogs (6/sex/dose) were given diets containing 0, 10, 20 or 45 mg moxidectin/kg of feed, equivalent to 0, 0.26, 0.52 or 1.15 mg/kg bw/day, for 52 weeks. No signs of toxicity occurred and body weights remained comparable to controls throughout
the study. There were no abnormalities in haematological parameters, clinical chemistry or urinalyses, and ophthalmoscopic examinations were normal. No gross or microscopic abnormalities were seen at necropsy. The NOEL in this study was 1.15 mg/kg bw/day (Schulze, 1991). Moxidectin (WHO Food Series 36), Dr K. Woodward, Veterinary Medicines Directorate, Ministry of Agriculture, Fisheries and Food, Addlestone, Surrey, England [INCHEM]

Section 12 - Ecological Information

Data and interpretation: Summary data:

Very toxic to aquatic organisms. Harmful to the soil environment. Harmful to terrestrial vertebrates. Harmful to terrestrial invertebrates.

Moxidectin Ecotoxicity to:

9.1A (fish) SPECIES: Rainbow trout
TYPE OF EXPOSURE:
DURATION: 96 hr
ENDPOINT: LC50
VALUE: 0.16 ppb (= 0.00016 mg/l)
REFERENCE SOURCE: [Company data]

Bioccumulative: Yes
Log Kow = 4.766
[American Cyanamid MSDS No AG09136-3]

Rapidly Degradable: ND
9.1A (crustacean) SPECIES: Daphnia magna
TYPE OF EXPOSURE:
DURATION: 48 hr
ENDPOINT: EC50
VALUE: 30 ppt (= 0.00003 mg/l)
REFERENCE SOURCE: [Company data]

Bioccumulative: Yes
Log Kow = 4.766
[American Cyanamid MSDS No AG09136-3]

Rapidly Degradable: ND
9.2A REMARK: Classification based on Company data.

Soil DT 50 > 30 days: yes
BIOSIS COPYRIGHT: BIOL ABS. Avermectins and their metabolites are excreted mainly in the faeces; they do not readily move from the site of dung deposition because of their low solubility in water and their tight binding to organic matter. Avermectins degrade in the environment through photodegradation and aerobic breakdown by soil organisms.
Environmental assessment of veterinary avermectins in temperate pastoral ecosystems.
Authors:
WRATTEN SD
FORBES AB
Author Address: Dep. Entomol. Anim. Ecol., Lincoln Univ., Canterbury, New Zealand.
Source: ANNALS OF APPLIED BIOLOGY; 128 (2). 1996. 329-348.
[TOXLINE]
9.3A SPECIES: Mouse (F)
ENDPOINT: LD50
VALUE: 42 mg/kg bw
REFERENCE SOURCE: Fischer J. E. (1990a). Oral LD50 study in the albino mouse with AC 301, 423. Unpublished report No. A90-45. Submitted to WHO by American Cyanamid Company, Princeton, NJ, USA. [INCHEM]

9.4A Data for Milbemectin (a milbemycin insecticide):

SPECIES:
ENDPOINT: LD50
VALUE: (contact) 0.025 ug/bee
REFERENCE SOURCE: [Pesticides Manual] [MF = 10]

Section 13 – Disposal Considerations

Disposal information:

Preferably dispose of the product by its intended use (as a drench).
If this isn't possible, dispose of product and packaging at an approved landfill or other approved hazardous waste disposal facility.
Avoid contamination of any water source.
Preferably recycle empty container using a suitable drench container recovery program (e.g. AgRecovery: for details visit the site http://www.agrecovery.co.nz/programmes/container-recycling)
If this isn't possible then burn empty container in an appropriate incinerator, providing circumstances permit; i.e. suitable wind direction.
Otherwise crush or puncture and bury in a suitable landfill.
Do NOT re-use container for any other purpose.

Section 14 – Transport Information

Relevant information:

Dangerous Goods for transport.
ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Moxidectin 0.5%)
UN Number: 3082 Dangerous Goods Class: 9

The maximum quantity per package of this substance allowed for carriage on public transport is 1000L.

Other requirements: N/A

Section 15 – Regulatory Information

Regulatory status:	Registered pursuant to the ACVM Act 1997, No. A11390 See www.foodsafety.govt.nz for registration conditions This product is an approved substance under the Hazardous Substances and New Organisms Act (HSNO). Approval code: HSR100758. SDS is required for quantities greater than or equal to 0.1L

Section 16 – Other Information

The information in this MSDS is provided in good faith, but no warranty, expressed or implied is made. Contact Donaghys Ltd for more information.

EMERGENCY CONTACT No.: 0800 764 766 (National Poisons Information Centre)