

MATERIAL SAFETY DATA SHEET



A SANOFI COMPANY

ECLIPSE Combination Pour-On for Cattle

Version: 4
Issue Date: 17 September 2012
Page 1 of 8

SECTION 1

IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Substance: Blend of ingredients.
Trade Name: Eclipse Combination Pour-On for Cattle
Product Use: Ecto- and endo- parasiticide pour-on for cattle as described on the product label.

Supplier Name: Merial Australia Pty Ltd
Address: Building D, 12-24 Talavera Road, Macquarie Park, NSW 2113
Phone: 1800 808 691

SECTION 2

HAZARDS IDENTIFICATION

This product is classified as: Hazardous according to the criteria of NOHSC Australia. It meets the criteria of the Australian Dangerous Goods (ADG) Code Class 9. However, refer to Section 14 (Page 7) regarding exemption (AU01) from ADG classification. The product is classified as Combustible Liquid C1 for storage.

Risk Phrases: R23/25 , R36/38, R51/53. Toxic if inhaled or swallowed. Irritating to eyes and skin. Toxic to aquatic organisms, may cause long-term adverse effects to the aquatic environment.

Safety Phrases: S20, S23, S60, S61, S1/2, S24/25, S36/37. When using, do not eat or drink. Do not breathe vapours or mists. This material and its container must be disposed of as hazardous waste. Avoid release to the environment. Refer to special instructions/Safety Data Sheets. Keep locked up and out of reach of children. Avoid contact with skin and eyes. Wear suitable protective clothing and gloves (butyl rubber).

SUSDP Classification: S6
ADG Classification: Class 9 (Environmentally hazardous)
UN Number: 3082

EMERGENCY OVERVIEW

Physical Description: Clear homogenous solution.
Odour: Characteristic odour.
Major Health Hazards: Symptoms of poisoning observed in laboratory animals include pupil dilation, vomiting, convulsions and/or tremors, and coma. Abamectin controls parasites by interfering with the nervous system. At very high doses, it can affect mammals, causing symptoms of nervous system depression such as incoordination, tremors, lethargy, excitation, and pupil dilation. Very high doses have caused death from respiratory failure. Abamectin is not readily absorbed through skin. Product is harmful in contact with skin, and if swallowed, irritating to eyes and skin.

POTENTIAL HEALTH EFFECTS

See section 11 for Chronic exposure studies.

Inhalation

Short Term Exposure: Available data indicates that this product is not harmful and is unlikely to cause discomfort or irritation.

Skin Contact:

Short Term Exposure: Product is a skin irritant. Symptoms may include itchiness and reddening of contacted skin. Other symptoms may become evident, but should disappear once exposure has ceased.

Eye Contact:

Short Term Exposure: This product is an eye irritant. Symptoms may include stinging and reddening of eyes and watering which may become copious. Other symptoms may become evident. If exposure is brief, symptoms should disappear once exposure has ceased. However, lengthy exposure or delayed treatment may cause permanent damage.



ECLIPSE Combination Pour-On for Cattle

Version: 4
Issue Date: 17 September 2012
Page 2 of 8

Ingestion:
Short Term Exposure: Significant oral exposure is considered to be unlikely. Available data shows that this product is harmful, but symptoms are not available. This product is unlikely to cause any irritation problems in the short or long term.

Carcinogen Status:
NOHSC: No significant ingredient is classified as carcinogenic by NOHSC.
NTP: No significant ingredient is classified as carcinogenic by NTP.
IARC: No significant ingredient is classified as carcinogenic by IARC.

SECTION 3 COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	CAS No.	Conc. %	Classification	Cut-off %	Risk phrases
Abamectin	71751-41-2	1	Toxic T+	1	24/26/28, 63
Levamisole	14769-73-4	20	Harmful Xn	25	22
Non-hazardous Ingredients	-	25	-	-	-
N-Methyl-2-pyrrolidone	872-50-4	> 10	Toxic T	10	61-36/37/38

This is a commercial product for which the exact ratio of components may vary slightly. *Minor quantities of other non hazardous ingredients are also possible.*

SECTION 4 FIRST AID MEASURES

General Information:

Call The Poisons Information Centre if you feel that you may have been poisoned, burned or irritated by this product. The number is 13 1126 from anywhere in Australia (0800 764 766 in New Zealand) and is available at all times. Have this MSDS with you when you call.

Inhalation: First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

Skin Contact: Wash gently and thoroughly with warm water (use non-abrasive soap if necessary) for 10-20 minutes or until product is removed. Under running water, remove contaminated clothing, shoes and leather goods (e.g. watchbands and belts) and completely decontaminate them before reuse or discard. If irritation persists, repeat flushing and seek medical attention.

Eye Contact: Immediately flush affected eye(s) with lukewarm, gently flowing water for 20 minutes or until the product is removed, while holding the eyelid(s) open. Take care not to rinse contaminated water into the unaffected eye or onto the face. Obtain medical attention immediately. Take special care if exposed person is wearing contact lenses.

Ingestion: If swallowed, do NOT induce vomiting. Wash mouth with water and contact a Poisons Information Centre, or call a doctor.

SECTION 5 FIRE FIGHTING MEASURES

Fire and Explosion Hazards: This product is classified as a C1 combustible product. There is no risk of an explosion from this product under normal circumstances if it is involved in a fire. Violent steam generation or eruption may occur upon application of direct water stream on hot liquids. Vapours from this product are heavier than air and may accumulate in sumps, pits and other low-lying spaces, forming potentially explosive mixtures. They may also flash back considerable distances.
Fire decomposition products from this product may be toxic if inhaled.
Take appropriate protective measures.



ECLIPSE Combination Pour-On for Cattle

Version: 4
Issue Date: 17 September 2012
Page 3 of 8

Extinguishing Media:	Preferred extinguishing media are carbon dioxide, dry chemical, foam, water fog.
Fire Fighting:	If a significant quantity of this product is involved in a fire, call the fire brigade.
Flash point:	Approx 80°C
Upper Flammability Limit:	No data.
Lower Flammability Limit:	No data.
Autoignition temperature:	No data.
Flammability Class:	C1

SECTION 6

ACCIDENTAL RELEASE MEASURES

Accidental release:

In the event of a major spill, prevent spillage from entering drains or water courses as product is toxic to aquatic organisms. Immediately call the Fire Brigade. Wear full protective clothing including eye/face protection. All skin areas should be covered. See below under Personal Protection regarding Australian Standards relating to personal protective equipment. No special recommendations for clothing materials. Eye/face protective equipment should comprise as a minimum, protective goggles. If there is a significant chance that vapours or mists are likely to build up in the cleanup area, we recommend that you use a respirator. It should be fitted with a type G cartridge, suitable for agricultural chemicals.

Stop leak if safe to do so, and contain spill. Absorb onto sand, vermiculite or other suitable absorbent material. If spill is too large or if absorbent material is not available, try to create a dike to stop material spreading or going into drains or waterways. Sweep up and shovel or collect recoverable product into labelled containers for recycling or salvage, and dispose of promptly. Recycle containers wherever possible after careful cleaning. Refer to product label for specific instructions. After spills, wash area preventing runoff from entering drains. If a significant quantity of material enters drains, advise emergency services. Full details regarding disposal of used containers, spillage and unused material may be found on the label. If there is any conflict between this MSDS and the label, instructions on the label prevail. Ensure legality of disposal by consulting regulations prior to disposal. Thoroughly launder protective clothing before storage or re-use. Advise laundry of nature of contamination when sending contaminated clothing to laundry.

SECTION 7

HANDLING AND STORAGE

Handling:

Keep exposure to this product to a minimum, and minimise the quantities kept in work areas. Check Section 8 of this MSDS for details of personal protective measures, and make sure that those measures are followed. The measures detailed below under "Storage" should be followed during handling in order to minimise risks to persons using the product in the workplace. Also, avoid contact or contamination of product with incompatible materials listed in Section 10.

Storage:

Note that this product is combustible and therefore, for Storage, meets the definition of Dangerous Goods in some states. If you store large quantities (tonnes) of such products, we suggest that you consult your state's Dangerous Goods authority in order to clarify your obligations regarding their storage.

Protect this product from light. Store in the closed original container below 25°C (air conditioning) in a dry, well-ventilated area out of direct sunlight. Make sure that the product does not come into contact with substances listed under "Incompatibilities" in Section 10. Some liquid preparations settle or separate on standing and may require stirring before use. Check packaging - there may be further storage instructions on the label.



ECLIPSE Combination Pour-On for Cattle

Version: 4
Issue Date: 17 September 2012
Page 4 of 8

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

The following Australian Standards will provide general advice regarding safety clothing and equipment:

Respiratory equipment: **AS/NZS 1715**, Protective Gloves: **AS 2161**, Industrial Clothing: **AS2919**, Industrial Eye Protection: **AS1336** and **AS/NZS 1337**, Occupational Protective Footwear: **AS/NZS2210**.

Exposure Limits

Ingredient	CAS No.	Conc. g/L	TWA (mg/m ³)	STEL (mg/m ³)
Abamectin	71751-41-2	10	not set	not set
Levamisole	14769-73-4	200	not set	not set
Non-hazardous ingredients		250	not set	not set
N-Methyl-2-pyrrolidone	872-50-4	to 1L	103	309

The ADI for Abamectin is set at 0.0005mg/kg/day. The corresponding NOEL is set at 0.5mg/kg/day. ADI means Acceptable Daily Intake and NOEL means No-observable-effect-level. Values taken from Australian ADI List, Dec 2004.

No special equipment is usually needed when occasionally handling small quantities. The following instructions are for bulk handling or where regular exposure in an occupational setting occurs without proper containment systems.

Ventilation:	This product should only be used where there is ventilation that is adequate to keep exposure below the TWA levels. If necessary, use a fan.
Eye Protection:	Protective glasses or goggles should be worn when this product is being used. Failure to protect your eyes may cause them harm. Emergency eye wash facilities are also recommended in an area close to where this product is being used.
Skin Protection:	Prevent skin contact by wearing impervious gloves, clothes and, preferably, apron. Make sure that all skin areas are covered.
Protective Material Types:	Butyl rubber.
Respirator:	Usually, no respirator is necessary when using this product. However, if you have any doubts consult the Australian Standard mentioned above. Running water should be available near to where this product is being used.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Physical Description & colour:	Clear homogenous solution.
Odour:	Characteristic odour.
Boiling Point:	Approx 100°C at 100kPa
Freezing/Melting Point:	No specific data. Liquid at normal temperatures.
Flash point:	Approx 80°C
Vapour Pressure:	No data.
Vapour Density:	No data.
Specific Gravity:	Approx 1.04
Water Solubility:	No specific data; solvents are soluble.
pH:	No data.
Volatility:	No data.
Odour Threshold:	No data.
Evaporation Rate:	No data.
Coeff Oil/water Distribution:	No data
Viscosity:	12.8-17.3 sec at 15°C
Autoignition temp:	No data.



ECLIPSE Combination Pour-On for Cattle

Version: 4
Issue Date: 17 September 2012
Page 5 of 8

SECTION 10

STABILITY & REACTIVITY

Reactivity:

This product is unlikely to react or decompose under normal storage conditions however, if you have any doubts, contact the supplier for advice on shelf life properties.

Conditions to Avoid:

Protect product from light. Store in the closed original container below 25°C (air conditioning) in a dry, cool, well-ventilated area. Protect from light.

Incompatibilities:

Strong acids, strong bases, strong oxidising agents.

Fire Decomposition:

Carbon dioxide, and if combustion is incomplete, carbon monoxide and smoke. Nitrogen and its compounds, and under some circumstances, oxides of nitrogen. Occasionally hydrogen cyanide gas. Oxides of sulphur (sulphur dioxide is a respiratory hazard) and other sulphur compounds. Most will have a foul odour. Water. Carbon monoxide poisoning produces headache, weakness, nausea, dizziness, confusion, dimness of vision, disturbance of judgment, and unconsciousness followed by coma and death.

Polymerisation:

This product will not undergo polymerisation reactions.

SECTION 11

TOXICOLOGICAL INFORMATION

Toxicity:

Acute toxicity:

Abamectin is highly toxic to insects and may be highly toxic to mammals as well. Emulsifiable concentrate formulations may cause slight to moderate eye irritation and mild skin irritation. Symptoms of poisoning observed in laboratory animals include pupil dilation, vomiting, convulsions and/or tremors, and coma. Abamectin acts on insects by interfering with the nervous system. At very high doses, it can affect mammals, causing symptoms of nervous system depression such as incoordination, tremors, lethargy, excitation, and pupil dilation. Very high doses have caused death from respiratory failure. Abamectin is not readily absorbed through skin. Tests with monkeys show that less than 1% of dermally applied abamectin was absorbed into the bloodstream through the skin. Abamectin does not cause allergic skin reactions. The oral LD50 for abamectin in rats is 10 mg/kg, and in mice ranges from 14 mg/kg to greater than 80 mg/kg. The dermal LD50 for technical abamectin in rats and rabbits is greater than 330 mg/kg.

Chronic toxicity:

In a 1-year study with dogs given oral doses of abamectin, dogs at the 0.5 and 1 mg/kg/day doses exhibited pupil dilation, weight loss, lethargy, tremors, and recumbency. Similar results were seen in a 2-year study with rats fed 0.75, 1.5, or 2 mg/kg/day. Rats at all the dosage levels exhibited body weight gains significantly higher than the controls. A few individuals in the high dose group exhibited tremors. When mice were fed 8 mg/kg/day for 94 weeks, the males developed dermatitis and changes in blood formation in the spleen, while females exhibited tremors and weight loss.

Reproductive effects:

Rats given 0.40 mg/kg/day of abamectin had increased stillbirths, decreased pup viability, decreased lactation, and decreased pup weights. These data suggest that abamectin may have the potential to cause reproductive effects at high enough doses.

Teratogenic effects:

Abamectin produced cleft palate in the offspring of treated mice and rabbits, but only at doses that were also toxic to the mothers. There were no birth defects in the offspring of rats given up to 1 mg/kg/day. Abamectin is unlikely to cause teratogenic effects except at doses toxic to the mother.

Mutagenic effects:

Abamectin does not appear to be mutagenic. Mutagenicity tests in live rats and mice were negative. Abamectin was shown to be nonmutagenic in the Ames test.



A SANOFI COMPANY

Carcinogenic effects:

ECLIPSE Combination Pour-On for Cattle

Version: 4

Issue Date: 17 September 2012

Page 6 of 8

Abamectin is not carcinogenic in rats or mice. The rats were fed dietary doses of up to 2 mg/kg/day for 24 months, and the mice were up to 8 mg/kg/day for 22 months. These represent the maximum tolerated doses.

Organ toxicity:

Animal studies indicate that abamectin may affect the nervous system.

Fate in humans and animals: Tests with laboratory animals show that ingested avermectin B1a is not readily absorbed into the bloodstream by mammals and that it is rapidly eliminated from the body within 2 days via the faeces. Rats given single oral doses of avermectin B1a excreted 69 to 82% of the dose unchanged in the faeces. The average half-life of avermectin B1a in rat tissue is 1.2 days. Lactating goats given daily oral doses for 10 days excreted 89% of the administered avermectin, mainly in the faeces. Less than 1% was recovered in the urine.

No cumulative effects are to be found with levamisole. The estimated acute oral LD50 for levamisole in humans is 80 mg/kg.

SECTION 12 ECOLOGICAL INFORMATION

Product is toxic to aquatic organisms, may cause long-term adverse effects to the aquatic environment. This product is biodegradable. It will not accumulate in the soil or water or cause long term problems.

Effects on birds:

Abamectin is practically nontoxic to birds. The LD50 for abamectin in bobwhite quail is >2000 mg/kg. The dietary LC50 is 3102 ppm in bobwhite quail. There were no adverse effects on reproduction when mallard ducks were fed dietary doses of 3, 6, or 12 ppm for 18 weeks.

Effects on aquatic organisms:

Abamectin is highly toxic to fish and extremely toxic to aquatic invertebrates. Its LC50 (96-hour) is 0.003 mg/L in rainbow trout, 0.0096 mg/L in bluegill sunfish, 0.015 mg/L in sheepshead minnows, 0.024 mg/L in channel catfish, and 0.042 mg/L in carp. Its 48-hour LC50 in *Daphnia magna*, a small freshwater crustacean, is 0.003 mg/L. The 96-hour LC50 for abamectin is 0.0016 mg/L in pink shrimp, 430 mg/L in eastern oysters, and 153 mg/L in blue crab. While highly toxic to aquatic organisms, actual concentrations of abamectin in surface waters adjacent to treated areas are expected to be low. Abamectin did not bioaccumulate in bluegill sunfish exposed to 0.099 µg/L for 28 days in a flow-through tank. The levels in fish were from 52 to 69 times the ambient water concentration, indicating that abamectin does not accumulate or persist in fish.

Effects on other organisms:

Abamectin is highly toxic to bees, with a 24-hour contact LC50 of 0.002 µg/bee and an oral LD50 of 0.009 µg/bee.

Breakdown in soil and groundwater:

Abamectin is rapidly degraded in soil. At the soil surface, it is subject to rapid photodegradation, with half-lives of 8 hours to 1 day reported. When applied to the soil surface and not shaded, its soil half-life is about 1 week. Under dark, aerobic conditions, the soil half-life was 2 weeks to 2 months. Loss of abamectin from soils is thought to be due to microbial degradation. The rate of degradation was significantly decreased under anaerobic conditions. Because abamectin is nearly insoluble in water and has a strong tendency to bind to soil particles, it is immobile in soil and unlikely to leach or contaminate groundwater. Compounds produced by the degradation of abamectin are also immobile and unlikely to contaminate groundwater.

Breakdown in water:

Abamectin is rapidly degraded in water. After initial distribution, its half-life in artificial pond water was 4 days. Its half-life in pond sediment was 2 to 4 weeks. It undergoes rapid photodegradation, with a half-life of 12 hours in water. When tested at pH levels common to surface and groundwater (pH 5, 7, and 9), abamectin did not hydrolyse.

Breakdown in vegetation:

Plants do not absorb abamectin from the soil. Abamectin is subject to rapid degradation when present as a thin film, as on treated leaf surfaces. Under laboratory conditions and in the presence of light, its half-life as a thin film was 4 to 6 hours.

Levamisole is not toxic to birds, fish and honey bees. It does not bioaccumulate in animal systems. In soil, it has a half life of 5 to 70 days depending on sunlight, soil type and climatic conditions. It also does not leach into soils and is readily degraded by hydrolysis and microbial action.



ECLIPSE Combination Pour-On for Cattle

Version: 4
Issue Date: 17 September 2012
Page 7 of 8

SECTION 13

Disposal:

DISPOSAL CONSIDERATIONS

There are many pieces of legislation covering waste disposal and they differ in each state and territory, so each user must refer to laws operating in their area. In some areas, certain wastes must be tracked. The Hierarchy of Controls seems to be common - the user should investigate: Reduce, Reuse, and Recycle and only if all else fails should disposal be considered. Note that properties of a product may change in use, so that the following suggestions may not always be appropriate. The following may help you in properly addressing this matter for this product. Special help is available for the disposal of Agricultural Chemicals. The product label will give general advice regarding disposal of small quantities, and how to cleanse containers. However, for help with the collection of unwanted rural chemicals, contact ChemClear 1800 008 182 <http://www.chemclear.com.au/> and for help with the disposal of empty drums, contact DrumMuster <http://www.drummuster.com.au/> where you will find contact details for your area.

SECTION 14

ADG Code:

AU01

TRANSPORT INFORMATION

This product is classified as a Dangerous Good Class 9 (UN No. 3082), however, ADG condition AU01 applies.

Environmentally Hazardous Substance meeting description of UN 3077 or UN 3082, are not subject to the DG Code when transported by road/rail in: packagings; IBCs, or any other receptacle not exceeding 500L..

SECTION 15

REGULATORY INFORMATION

This product is registered with the Australian Pesticides and Veterinary Medicines Authority, APVMA Approval No. 60752.

AICS: All of the significant ingredients in this formulation are compliant with NICNAS regulations.

The following ingredients: Abamectin, Levamisole, N-Methyl-2-pyrrolidone, are mentioned in the SUSDP.

Risk phrases shown in Section 3 that relate only to a specific ingredient.

R22 HARMFUL IF SWALLOWED
R24 TOXIC IN CONTACT WITH SKIN
R26 VERY TOXIC BY INHALATION
R28 VERY TOXIC IF SWALLOWED
R37 IRRITATING TO RESPIRATORY SYSTEM
R61 MAY CAUSE HARM TO THE UNBORN CHILD
R 63 POSSIBLE RISK OF HARM TO THE UNBORN CHILD

SECTION 16

OTHER INFORMATION

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

Acronyms:

ADG Code

AICS

CAS Number

Hazchem Number

IARC

NOHSC

NOS

NTP

R-Phrase

SUSDP

UN Number

Australian Code for the Transport of Dangerous Goods by Road and Rail

Australian Inventory of Chemical Substances

Chemical Abstracts Service Registry Number

Emergency action code of numbers and letters that provide information to emergency services especially firefighters

International Agency for Research on Cancer

National Occupational Health and Safety Commission

Not otherwise specified

National Toxicology Program (USA)

Risk Phrase

Standard for the Uniform Scheduling of Drugs & Poisons

United Nations Number



ECLIPSE Combination Pour-On for Cattle

Version: 4
Issue Date: 17 September 2012
Page 8 of 8

THIS MSDS 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. EACH USER MUST REVIEW THIS MSDS IN THE CONTEXT OF HOW THE PRODUCT WILL BE HANDLED AND USED IN THE WORKPLACE.

IF CLARIFICATION OR FURTHER INFORMATION IS NEEDED TO ENSURE THAT AN APPROPRIATE RISK ASSESSMENT CAN BE MADE, THE USER SHOULD CONTACT THIS COMPANY SO WE CAN ATTEMPT TO OBTAIN ADDITIONAL INFORMATION FROM OUR SUPPLIERS

Please read all labels carefully before using product.