

Merck Agvet

IVOMEC EPRINEX POUR-ON FOR BEEF AND DAIRY CATTLE

PRODUCT NAME: Ivomec Eprinex Pour-On for Beef and Dairy Cattle  
PLANT MSDS CODE: AG-083

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MANUFACTURER: MERCK AGVET DIVISION  
P.O. BOX 2000  
RAHWAY, N.J. 07065  
EMERGENCY TELEPHONE NUMBER: 1-800-672-6372 - Human Health Adverse Experience  
1-800-325-2577 - Animal Health Adverse Experience  
LABEL NAME: 'Ivomec' 'Eprinex' Pour-On for beef and dairy Cattle  
CHEMICAL NAME: Active Ingredient: Component Bla (90% or greater): (4'R)-4"-(acetyl-amino)-5-0-demethyl-4"-deoxy-avermectin Ala;  
Component Blb (10% or less): (4'R)-4"-(acetyl-amino)-5-0-demethyl-25-de(1-methylpropyl)-4"-deoxy-25-(1-methylethyl)-avermectin Ala  
SYNONYMS:  
COMMON: Eprinomectin 0.5% Pour-On for Cattle  
CHEMICAL: Active ingredient: Component Bla: 4"-epiacetamido-4"-deoxy-avermectin Bla  
Component Blb: 4"-epiacetyl-amino-4"-deoxy-avermectin Blb (4"-epiacetamido-2"-deoxy-avermectin Blb)  
MATERIAL STATISTICAL NUMBER: Not applicable  
MATERIAL PRODUCT NUMBER: 30250 - 250 mL; 30251 - 1 Litre:  
Squeeze-measure-pour bottles from high density polyurethane with polypropylene tamper-evident caps.  
30252 - 2.5 L; 30253 - 5.0 L: HDPE collapsible backpacks have tamper-evident high-density polyethylene caps.  
INTENDED USE: Veterinary antiparasitic drug

2. COMPOSITION/INFORMATION ON INGREDIENTS

Component CAS Number	Molecular Formula	Molecular Weight	Percent (%)
Eprinomectin (Bla) 133305-88-1	C50H75O14N	914	0.5
(Blb) 133305-89-2	C49H73O14N	900	99.5
Non-hazardous ingredients Not available	Not avail.	Not avail.	99.5

EC LABEL: N, R50

3. HAZARDS IDENTIFICATION

APPEARANCE: Clear, slightly yellow-colored solution  
EMERGENCY OVERVIEW: CAUTION!  
Components may be harmful to humans if swallowed.  
Contents are very toxic to aquatic organisms.  
POTENTIAL HEALTH EFFECTS: None expected when used as directed. Accidental ingestion may cause tremors, dilated pupils and incoordination.  
Repeated or prolonged exposure may cause nerve damage based upon animal studies.

4. FIRST-AID MEASURES

EYE CONTACT: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists.  
SKIN CONTACT: Wash with soap and water. Get medical attention if irritation develops.  
INHALATION: If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention if symptoms appear.

INGESTION: If ingested, call a physician or Poison Control Center immediately. Drink one or two glasses of water and induce vomiting by gently touching the back of the throat with finger. Repeat until vomit fluid is clear. Do not induce vomiting or give anything by mouth to an unconscious person.

NOTE TO PHYSICIANS: Eprinomectin is a second generation avermectin used as an anti-parasitic agent in cattle. It inhibits transmission of nerve impulses in susceptible parasites, thereby causing paralysis and death. Toxicity following accidental human ingestion can be minimized by inducing vomiting within one half hour of exposure. Since eprinomectin is believed to bind to glutamate-gated chloride ion channels, it is probably wise to avoid drugs that also interact with other ligand-gates chloride channels, including those that enhance GABA activity in patients with potentially toxic ivermectin exposure.

5. FIRE-FIGHTING MEASURES

FLASH POINT (DEG C/DEG F): 116 deg C (240 deg F)  
FLASH POINT TEST METHOD: Pensky-Martens C.C.  
FLAMMABLE LIMITS:  
LEL (%): Not available  
UEL (%): Not available  
AUTOIGNITION TEMPERATURE (DEG C/DEG F): Not available  
OXIDIZING PROPERTIES: Not available  
COMBUSTIBILITY INFORMATION: Not available  
DUST EXPLOSIVITY INFORMATION: Not applicable  
SHOCK SENSITIVITY: Not available  
FIRE AND EXPLOSION HAZARDS: Not available  
EXTINGUISHING MEDIA: Use Carbon dioxide, foam or dry chemical.  
SPECIAL FIRE FIGHTING PROCEDURES: Eprinomectin is very toxic to certain aquatic organisms. Contain all runoff water. See spill procedures section. All exposed personnel and equipment should be decontaminated at the site. Use full protective clothing and self-contained breathing apparatus.  
HAZARDOUS DECOMPOSITION PRODUCTS RESULTING FROM A FIRE: Carbon monoxide, carbon dioxide and oxides of nitrogen and sulfur may be released in a fire.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS: Emergency personnel involved in spill cleanup should wear full protective clothing (cap, waterproof coveralls and jacket, and rubber boots). Wear goggles and impervious rubber gloves (neoprene/nitrile/polyvinyl chloride) when handling spilled material.  
ENVIRONMENTAL PRECAUTIONS: Eprinomectin is very toxic to certain aquatic species. Avoid contact of spilled material with soil. Do not allow any water potentially contaminated with eprinomectin including storm water, runoff, from spills and fire fighting activities and contaminated wastewater to enter any waterway, drain or sewer. See Section 12 for Ecological Information.

----- MATERIAL SAFETY DATA SHEET -----

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METHODS FOR CLEANING UP: If emergency personnel are unavailable, absorb small spills on vermiculite or other suitable absorbing material and place in a sealed container for disposal. Dike large spills and transfer to an appropriate container for disposal. Avoid contact of spilled material with soil. Do not allow any water potentially contaminated with eprinomectin including storm water, runoff from spills or fire fighting activities and contaminated wastewater to enter any waterway, drain or sewer. Residual surface material should be removed with towels moistened with methanol. Incinerate all spill materials and residues at temperatures greater than 600 deg C. See Section 13 for Waste Disposal Information.

For additional assistance in the U.S., CHEMTREC provides a toll-free Hotline for chemical emergencies regarding spills, leaks, exposure or accidents: 1-800-424-9300

7. HANDLING AND STORAGE

HANDLING: Avoid direct contact with eyes and skin.  
STORING: Store bottle in carton to protect from light and avoid prolonged storage above 40 deg C (104 deg F).  
OTHER: Keep this and all chemicals out of the reach of children.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE GUIDELINES:

	OSHA Permissible Exposure Limit (PEL)	ACGIH Threshold Limit Value (TLV)	Merck Exposure Control Limit (ECL)
Component			
Eprinomectin	Not established	Not established	25 ug/M3 (8hr-TWA)

ENGINEERING CONTROLS:

VENTILATION: Not necessary for normal use. For manufacturing, local exhaust ventilation is recommended if aerosols are present.

PERSONAL PROTECTIVE EQUIPMENT:

EYE/FACE: Normal Use: None required.  
Manufacturing: Safety glasses are recommended if there is a potential for direct eye contact.  
HAND/ARM PROTECTION: Normal Use: None required.  
Manufacturing: Latex gloves or gloves of equal or greater protection are recommended.  
RESPIRATORY PROTECTION: Normal Use: None required.  
Manufacturing: Respiratory protection is recommended if the potential for exposure to aerosols exists.  
ADDITIONAL PROTECTIVE EQUIPMENT: Appropriate clothing should be worn to avoid direct contact.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Clear, slightly yellow-colored solution  
ODOR/THRESHOLD LEVEL (ppm): Practically odorless  
pH: Not available  
BOILING POINT/RANGE (DEG C/DEG F): Not available  
MELTING POINT/RANGE (DEG C/DEG F): Not applicable  
SOLUBILITY IN WATER: Insoluble in water. Soluble in 90% alcohol.  
PARTITION COEFFICIENT (Kow): Not available  
SPECIFIC GRAVITY (WATER = 1): 0.91-0.92  
VAPOR DENSITY (AIR = 1): Not available  
VAPOR PRESSURE (mmHG @ DEG C/DEG F): Not available  
VOLATILE COMPONENTS (% W/W): Not available

10. STABILITY AND REACTIVITY

STABILITY: When stored under normal conditions this product is expected to be stable for 24 months. Any deterioration poses no safety concern.

CONDITIONS TO AVOID: Avoid prolonged exposure to excessive heat (above 40 deg C) and direct sunlight.

INCOMPATIBILITIES: Plastic packing materials such as polystyrene, low density polyethylene (high pressure) (LDPE), and PVC should not be used.

HAZARDOUS POLYMERIZATIONS: Will not occur.

HAZARDOUS DECOMPOSITION PRODUCTS: If involved in a fire carbon monoxide, carbon dioxide and oxides of nitrogen and sulfur may be released.

11. TOXICOLOGICAL INFORMATION

PRIMARY ROUTE(S) OF ENTRY:

INHALATION: Unlikely with normal use  
INGESTION: Unlikely with normal use  
SKIN CONTACT: Unlikely with normal use

TOXICITY DATA

FOR FORMULATION

TEST	SPECIES	ROUTE	RESULT
LD50	Mouse	Oral	Greater than 5,000 mg/kg
Irritation	Rabbit	Ocular	Practically non-irritating
Skin Sensitization (Buehler)/Guinea Pig	Dermal/Dermal		Not a skin sensitizer
1-Month Mini-swine	Dermal		Mildly irritating due to vehicle

FOR EPRINOMECTIN

ALD50	Rat	Oral	55 mg/kg
ALD50	Mouse	Oral	70 mg/kg
Irritation	Rabbit	Ocular	Practically non-irritating
Skin Sensitization (Maximization) /Guinea Pig	Intradermal/ Dermal		Not a skin sensitizer

EFFECTS OF ACUTE EXPOSURE:

EYE CONTACT: The formulation was practically non-irritating to the eyes of rabbits without ocular wash and non-irritating when followed by ocular water wash.  
SKIN CONTACT: Both the vehicle and formulation were mildly irritating in a 1-month dermal study in miniswine. The formulation and active ingredient were negative in guinea pig skin sensitization assays.  
INHALATION: No data available for the formulation of the active ingredient.  
INGESTION: The formulation was practically non-toxic orally in mice (LD50 is greater than 5 g/kg). Eprinomectin was toxic by ingestion to mice and rats (LD50 is 55-70 mg/kg). Signs of toxicity included ataxia (incoordination), tremors and death.

EFFECTS OF CHRONIC EXPOSURE: No data available for the formulation.

In repeat-dose studies in rats and dogs, eprinomectin produced neurotoxic effects (tremors, incoordination, dilated pupils, central and peripheral nerve degeneration), bile thickening and adverse effects on the ovaries. The lowest no-effect level was 0.8 mg/kg/day. There was no evidence of developmental toxicity at maternally toxic dosages. Decreased fertility and pup tremors were reported in multi-generation reproduction studies. Genotoxicity studies were negative.  
CARCINOGEN DESIGNATION: Not listed as a carcinogen by OSHA, NTP, or IARC.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Not available

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12. ECOLOGICAL INFORMATION  
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ENVIRONMENTAL FATE: Avermectins are not biologically lipophilic. Bioaccumulation studies indicate that the avermectins have bioconcentration factors less than 100. Eprinomectin is practically insoluble in water (3.5 mg/L) and highly hydrophobic based upon its octanol/water coefficient (Log Kow = 5.4). It degrades rapidly in sunlight (t1/2=0.29 days in summer and 1.1 days in winter). The soil binding constant (Koc) is greater than or equal to 3000. Based upon the lowest Kd (adsorption distribution coefficient) derived experimentally, equal or greater than 98% of eprinomectin is expected to partition to soil in a 1:1 soil to water mixture. Therefore, it is not likely to be readily available to aquatic organisms. Approximately fifty percent of soil-bound eprinomectin is degraded aerobically in 64 days at 22 deg C. Due to its low vapor pressure and strong affinity for soil, eprinomectin is not expected to partition to air.

ENVIRONMENTAL EFFECTS: Eprinomectin is very toxic to certain aquatic organisms and toxic to other species.  
LC50 - Daphnia magna, 48 hours =0.45 ppb(0.00045 mg/L)  
EC50 - Rainbow trout, 96 hours =1.2 ppm (1.2 mg/L)  
EC50 - Bluegill sunfish, 96 hours =0.37 ppm (0.37 mg/L)

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13. DISPOSAL CONSIDERATIONS  
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WASTE DISPOSAL INFORMATION: Eprinomectin is very toxic to certain aquatic species. Avoid contact of spilled material with soil. Do not allow any water potentially contaminated with eprinomectin including storm water, runoff from spills and fire fighting activities and contaminated wastewater to enter any waterway, drain and sewer. Residual surface material should be removed with towels moistened with methanol. Incinerate all spill materials and residues at temperatures greater than 600 deg C.

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14. TRANSPORT INFORMATION  
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SHIPPING DESCRIPTION:  
U.S. DOT: Not regulated  
IATA/ICAO: Not regulated  
IMO: Not regulated  
ADR-RID: Not available

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15. REGULATORY INFORMATION  
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U.S. FEDERAL REGULATIONS: Not available  
INTERNATIONAL REGULATIONS: Not available  
STATE REGULATIONS: Not available

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16. OTHER INFORMATION  
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DATE PREPARED: June 1996  
LAST REVISION DATE: November 1996  
MSDS COORDINATOR: 1-908-423-7926  
Merck & Co, Inc.  
One Merck Drive  
P.O. Box 100, WS2F-48  
Whitehouse Station, NJ 08889-0100  
U.S.A.

Disclaimer: While this information and recommendations set forth are believed to be accurate as of the date hereof, MERCK & CO, INC. makes no warranty with respect hereto and disclaims all liability from reliance thereon.

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