

## SAFETY DATA SHEETS

**This SDS packet was issued with item:**

078801919

**The safety data sheets (SDS) in this packet apply to the individual products listed below. Please refer to invoice for specific item number(s).**

078345116 078695046 078707576 078820677 078859088

Merck AgVet

IVOMEC DRENCH FOR SHEEP

MANUFACTURER'S NAME: MERCK AGVET DIVISION  
P.O. BOX 2000  
RAHWAY, NJ 07065  
EMERGENCY TELEPHONE NUMBERS: 1-800-854-6588  
1-908-750-2380  
PRODUCT NAME: Ivomec Drench For Sheep  
PLANT MSDS CODE: AG-045

## SECTION 1 - MATERIAL IDENTIFICATION

CHEMICAL NAME: Theoretical mixture of 80% (minimum) 22.23 dihydro C-076 Bla and 20% (maximum) 22.23- dihydro C-076 Blb.  
TRADE NAME: Ivomec Drench for Sheep  
SYNONYMS: None  
MERCK ID CODE: 41264/68  
CHEMICAL CLASSIFICATION: Avermectins  
INTENDED USE: For the treatment of parasitic infestations associated with internal nematodes and nose bots in sheep.

## SECTION 2 - PRINCIPAL HAZARDOUS COMPONENT(S)

Component CAS Number	Molecular Formula	Molecular Weight	Percent (%)
Ivermectin Comp. Bla	C48H74O14	875	0.08
Comp. Blb	C47H72O14	861	
70288-86-7 (Mixture)			
Propylene Glycol	C3H8O2	76.09	20.00
57-55-6			
Sodium Phosphate	H2NaO4P	120	1.20
Monobasic Monohydrate			
7558-80-7			
Water Purified	H2O	18.016	66.22
7732-18-5			
Benzyl Alcohol	C7H8O	108.13	3.00
100-51-6			
Inert Ingredients	Not	Not	9.50
Not available.	available.	available.	

## SECTION 3 - PHYSICAL PROPERTY DATA

APPEARANCE: Pale yellow free-flowing solution.  
ODOR/THRESHOLD LEVEL (ppm): Practically odorless.  
BOILING POINT (deg C/deg F): Not established  
FREEZING POINT (deg C/deg F): Not established  
MELTING RANGE (deg C/deg F): Not applicable  
pH: 5.6 - 6.6 at 25 deg C  
SOLUBILITY IN WATER: Not established  
SPECIFIC GRAVITY (Water=1): Not established  
VAPOR DENSITY (Air=1): Not established  
VAPOR PRESSURE (mm Hg @ deg C/deg F): Not established  
VOLATILE COMPONENTS (% w/w): Not established

## SECTION 4 - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (deg C/deg F): Not established  
FLASH POINT TEST METHOD: Not applicable  
AUTOIGNITION TEMPERATURE (deg C/deg F): Not established  
FLAMMABLE LIMITS:  
LEL (%): Not available  
UEL (%): Not available  
EXTINGUISHING MEDIA: Water fog, alcohol foam, CO2, dry chemical.  
SPECIAL FIRE FIGHTING PROCEDURES: Not available  
FIRE AND EXPLOSION HAZARDS: Not available  
HAZARDOUS DECOMPOSITION PRODUCTS RESULTING FROM A FIRE: Not available

## SECTION 5 - REACTIVITY DATA

STABILITY: Stable under normal storage.  
STORAGE CONDITIONS TO AVOID: None known  
INCOMPATIBILITIES: Oxidizing material  
HAZARDOUS POLYMERIZATIONS: Not established

## SECTION 6 - EMERGENCY AND FIRST AID PROCEDURES

EYE CONTACT: Flush with plenty of water.  
SKIN CONTACT: Wash with soap and water.  
INHALATION: Remove from contaminated area immediately. Get medical attention.  
INGESTION: If accidentally ingested, get medical attention immediately.  
MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: None known

## SECTION 7 - HEALTH HAZARD DATA

Component	OSHA Permissible Exposure Limit (PEL)	ACGIH-1991-92 Threshold Limit Value (TLV)	Merck Exposure Control Limit (ECL)
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Ivermectin Not established Not established 0.08 mg/m3

CARCINOGEN DESIGNATION: Not listed as a carcinogen with NTP, IARC, or OSHA.

## EFFECTS OF ACUTE EXPOSURE:

EYE CONTACT: Direct contact with eyes can cause irritation.

SKIN CONTACT: Ivermectin is nonirritating in animal studies. Although skin absorption of this formulation of Ivermectin is not established, it has been shown that less than 1% of the closely related compound abamectin is absorbed through the skin of rhesus monkeys when it is applied as emulsifiable concentrate or suspended in alcohol.

INHALATION: No toxicity has been observed by this route of exposure to Ivermectin.

INGESTION: Pure Ivermectin is considered highly toxic in acute animal studies. The acute oral toxicity of Ivermectin have shown clear differences among species in sensitivity to Ivermectin toxicity. Rodents are uniquely sensitive compared to the other species in which the compound has been tested. It is therefore inappropriate to base human risk assessment on the response in mice. Ivermectin is used at a therapeutic dose of 200 mcg/kg in a variety of species, including human. Ivermectin can be excreted in milk.

If overexposed to Ivermectin, symptoms may include decreased activity, slow rate of breathing, dilation of the pupils, muscle tremors, and incoordination.

EFFECTS OF CHRONIC EXPOSURE: Unknown for product mixture. When this product is used according to the directions, prolonged exposure of man is not expected. Ivermectin has tested negative in several mutagenicity studies. Ivermectin was administered to dogs daily for 3 months and to monkeys daily for 2 weeks. In dogs there was no effect up to 500 mcg/kg/day and in adult rhesus monkeys there was no effect at the maximum dosage used 1.2 mg/kg/day. At higher doses in dogs there was dilation of the pupils, and at still higher doses tremor and anorexia were noted.

Merck AgVet

IVOMEC DRENCH FOR SHEEP

QUANTITATIVE TOXICITY DATA: For pure Ivermectin			
TEST	SPECIES	ROUTE	RESULT
LD50	Mouse	Oral	25 mg/kg
LD50	Mouse	Intraperitoneal	30 mg/kg
LD50	Rat	Oral	50 mg/kg
LD50	Rat	Intraperitoneal	55 mg/kg
LD50	Rat (infant)	Oral	2 to 3 mg/kg
LD50	Rat	Inhalation	*
LD50	Rat	Dermal	More than 660 mg/kg
LD50	Rabbit	Dermal	406 mg/kg
LD50	Dog	Oral	About 80 mg/kg
LD50	Rhesus monkey	Oral	More than 24 mg/kg

\*Maximum attainable concentration of 5.11 mg/liter produced transient irritation of mucous membranes but no deaths or other signs of toxicity after 1 hour exposure.

SECTION 8 - SPILL/LEAK/DISPOSAL PROCEDURE

STEPS TO BE TAKEN IN CASE MATERIALS ARE RELEASED: Absorb small spills on spill pillows or other suitable absorbing material and place in a sealed container for disposal. Dike large spills and transfer to an appropriate container for disposal. Use suitable protective equipment (Section 9). Follow all fire prevention procedures (Section 4). Contact emergency response personnel for large spills. Keep unnecessary persons away.

Ivermectin is very toxic to certain aquatic species. Avoid contact of spilled materials and runoff with soil and surface waterways. Residual surface material should be removed with towels moistened with methanol. Incinerate all spill material and residues at temperatures greater than 600 deg C.

ENVIRONMENTAL DATA: Ivermectin: LC50 (Daphnia Magna) EPA classification = 25 ppt (parts per trillion), very highly toxic to aquatic organisms.

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

SECTION 9 - SPECIAL PROTECTION INFORMATION

RESPIRATORY: Not applicable.

HANDS/ARMS: Wash hands and exposed skin before meals or smoking and after work.

EYE/FACE: To avoid eye contact goggles could be worn.

ADDITIONAL PROTECTIVE EQUIPMENT: No special recommendations.

VENTILATION: None known.

SECTION 10 - SPECIAL PRECAUTIONS

SPECIAL PRECAUTIONS TO BE TAKEN WHEN:

HANDLING AND STORING, ETC.: Store in a cool place away from direct sunlight. Do not store this product at a temperature exceeding 30 deg C.

OTHER: Keep out of the reach of children.

SECTION 11 - BASIC TRANSPORTATION DESCRIPTION

SHIPPING REQUIREMENTS: Drugs or medicines, NOI Class 70  
NMFC 60000 RVNX

SECTION 12 - MSDS PREPARATION

REVISION, June 1992, F. Lewandowski  
E.V. Sargent, Ph.D.  
Corporate Safety & Industrial Hygiene  
DATE: August 28, 1990  
F.J. Lewandowski, Jr.  
Merck AgVet  
DATE: September 11, 1990

While the information set forth is believed to be accurate as of the date hereof, Merck AgVet makes no warranty with respect hereto and disclaims all liability from reliance thereon.

DISCLAIMER OF EXPRESSED AND IMPLIED WARRANTIES: Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representation as to the accuracy or completeness of the information contained therein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for their particular purpose(s). A request has been made to the manufacturer to approve the contents of this material safety data sheet. Upon receipt a new MSDS will be made available.

COMPAS Code: 11400130



**Material Safety Data Sheet**  
**ISO/DIS 11014 / 29 CFR 1910.1200 / ANSI Z400.1**

Printing date 02/12/2010

Reviewed on 02/12/2010


## 1 Identification of substance

- **Product details**
- **Trade name:** Ivermectin  
IVOMEC Drench for Sheep
- **Item number:** 41264, 41268
- **Manufacturer/Supplier:**  
Merial Limited  
3239 Satellite Blvd.  
Duluth, Ga. 30096-4640  
1-888-MERIAL 1 (1-888-637-4251)
- **Emergency information:**  
Spill Information:  
CHEMTREC® 1-800-424-9300  
CHEMTREC® International 1+703-527-3887  
International calls 011+703-527-3887  
Reverse charges.

## 2 Composition/Data on components

- **Chemical characterization**
- **Description:** Mixture: consisting of the following components.

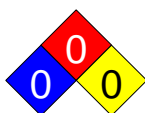
- **Components:**

	Non hazardous substance		75.72%
57-55-6	Propylene Glycol		20.0%
100-51-6	Benzyl alcohol	R 43 Warning:  3.1.O/4, 3.1.I/4	3.0%
7558-80-7	Sodium Phosphate, Monobasic		1.2%

- **Additional information:** For the wording of the listed risk phrases refer to section 16.

## 3 Hazards identification

- **Hazard description:** Not applicable.
- **Information pertaining to particular dangers for man and environment:**  
Accidental self-injection is dangerous. In case of accidental injection, seek medical advice immediately and show the package insert to the physician. See also Section 4 First Aid measures.  
The product does not have to be labeled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.
- **Classification system:**  
The classification was made according to the latest editions of international substances lists, and from company and regulatory data.
- **NFPA ratings (scale 0 - 4)**



Health = 0  
Fire = 0  
Reactivity = 0

# Material Safety Data Sheet

## ISO/DIS 11014 / 29 CFR 1910.1200 / ANSI Z400.1

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**Trade name:** Ivermectin  
**IVOMEC Drench for Sheep**

· **HMIS-ratings (scale 0 - 4)**

HEALTH	0	Health = 0
FIRE	0	Fire = 0
REACTIVITY	0	Reactivity = 0

· **GHS label elements** Void

### 4 First aid measures

- **General information:** No special measures required.
- **After inhalation:**  
 Not an expected route of entry.  
 Seek immediate medical advice.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:**  
 Rinse opened eye for a minimum of 15 minutes under running water. Get medical attention immediately.
- **After swallowing:** Immediately call a doctor.
- **After self injection**
- **Information for doctor.**  
 Overexposure to ivermectin may cause drowsiness, depressed motor activity, slowed breathing, dilation of the pupils, tremors, vomiting, anorexia and incoordination.  
 Direct contact of the solution with eyes can cause irritation. This formulation is not a skin irritant.

### 5 Fire fighting measures

- **Suitable extinguishing agents:**  
 Water mist  
 Foam  
 Alcohol resistant foam  
 Fire-extinguishing powder  
 Use fire fighting measures that suit the environment.
- **Protective equipment:**  
 Fire fighters should wear self-contained breathing apparatus and full protective equipment.

### 6 Accidental release measures

- **Person-related safety precautions:** Not required.
- **Measures for environmental protection:** Do not allow product to reach sewage system or any water course.
- **Measures for cleaning/collecting:**  
 Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
 Dispose of contaminated material as waste according to section 13.
- **Additional information:** No dangerous substances are released.

### 7 Handling and storage

- **Handling:**
- **Information for safe handling:**  
 Store in cool, dry place in tightly closed containers.  
 Handle with care. Avoid jolting and impact.

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# Material Safety Data Sheet

## ISO/DIS 11014 / 29 CFR 1910.1200 / ANSI Z400.1

Printing date 02/12/2010

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**Trade name:** Ivermectin  
**IVOMEK Drench for Sheep**

- **Information about protection against explosions and fires:** No special measures required.
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Store only in the original container.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Store in a cool, dry, well ventilated place.
- **Recommended storage temperature:** < 30°C (86°F)

### 8 Exposure controls and personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **Components with limit values that require monitoring at the workplace:**  
 The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- **Additional information:** The lists that were valid during the creation were used as basis.
- **Personal protective equipment:**
- **General protective and hygienic measures:**  
 Wash hands before breaks and at the end of work.  
 Avoid contact with the eyes and skin.  
 Do not eat, drink, smoke or inhale.  
 Do not store food in the working area.
- **Protection of hands:** Not required under normal conditions of use.
- **Eye protection:**



Safety goggles.

- **Body protection:** Impervious protective clothing

### 9 Physical and chemical properties

#### · General Information

<b>Form:</b>	Liquid
<b>Color:</b>	Light yellow
<b>Odor:</b>	Practically odorless

#### · Change in condition

<b>Melting point/Melting range:</b>	Undetermined.
<b>Boiling point/Boiling range:</b>	100°C (212°F)

· <b>Flash point:</b>	101°C (214°F)
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· <b>Ignition temperature:</b>	371.0°C (700°F)
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· <b>Auto igniting:</b>	Product is not self-igniting.
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· <b>Danger of explosion:</b>	Product does not present an explosion hazard.
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#### · Explosion limits:

<b>Lower:</b>	2.6 Vol %
<b>Upper:</b>	12.6 Vol %

USA

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**Trade name: Ivermectin**  
**IVOMEK Drench for Sheep**

· **Vapor pressure at 20°C (68°F):** 23.0 hPa (17 mm Hg)

· **Specific gravity:** Not determined.

· **Solubility in / Miscibility with Water:** Not established

· **pH-value:** 5.6-6.6

· **Organic solvents:** 20.0 %

· **Water:** 66.2 %

· **Solids content:** 0.1 %

### 10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Materials to be avoided:** Oxidizing agents
- **Dangerous reactions** No dangerous reactions known.
- **Dangerous products of decomposition:** No dangerous decomposition products known.

### 11 Toxicological information

· **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**

#### 100-51-6 Benzyl alcohol

Oral LD50 1230 mg/kg (rat)

Dermal LD50 2000 mg/kg (rabbit)

#### 7558-80-7 Sodium Phosphate, Monobasic

Oral LD50 8920 mg/kg (rat)

· **Primary irritant effect:**

· **on the skin:** No irritating effect known.

· **on the eye:** No irritating effect known.

· **Sensitization:** No sensitizing effects known.

· **Additional toxicological information:**

The product is not subject to classification according to internally approved calculation methods for preparations.

When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

### 12 Ecological information

· **General notes:**

Water hazard class 1 (Self-assessment): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

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**Trade name:** Ivermectin  
**IVOMEC Drench for Sheep**

### 13 Disposal considerations

- **Product:**
- **Recommendation:** Dispose of as bio-medical waste.
- **Uncleaned packagings:**
- **Recommendation:** Seek disposal instructions from local authority or arrange with a licensed waste contractor.

### 14 Transport information

- **DOT regulations:**
- **Hazard class:** Not Regulated
- **Land transport ADR/RID (cross-border):**
- **ADR/RID class:** 9 Miscellaneous dangerous substances and articles
- **UN-Number:** 3082
- **Packaging group:** III
- **Proper shipping name:** Environmentally hazardous substance, liquid, n.o.s. (ivermectin)
- **Maritime transport IMDG:**
- **IMDG Class:** 9
- **UN Number:** 3082
- **Packaging group:** III
- **Marine pollutant:** Yes
- **Proper shipping name:** Environmentally hazardous substance, liquid, n.o.s. (ivermectin)
- **Air transport ICAO-TI and IATA-DGR:**
- **ICAO/IATA Class:** 9
- **UN/ID Number:** 3082
- **Packing group:** III
- **Proper shipping name:** Environmentally hazardous substance, liquid, n.o.s. (ivermectin)

### 15 Regulations

- **SARA**

- **Section 355 (extremely hazardous substances):**

None of the ingredients are listed.

- **Section 313 (Specific toxic chemical listings):**

None of the ingredients are listed.

- **TSCA (Toxic Substances Control Act):**

7732-18-5 water, distilled, conductivity or of similar purity

57-55-6 Propylene Glycol

100-51-6 Benzyl alcohol

- **CA Proposition 65**

- **Chemicals known to cause cancer:**

None of the ingredients are listed.

- **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

USA



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**Trade name: Ivermectin**  
**IVOMEC Drench for Sheep**

· **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**

None of the ingredients is listed.

· **Carcinogenesis potential categories**

· **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

· **IARC (International Agency for Research on Cancer)**

None of the ingredients is listed.

· **NTP (National Toxicology Program)**

None of the ingredients is listed.

· **TLV (Threshold Limit Value established by ACGIH)**

None of the ingredients is listed.

· **MAK (German Maximum Workplace Concentration)**

None of the ingredients is listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

· **Product related hazard informations:**

Observe the general safety regulations when handling chemicals.

The product is not subject to identification regulations according to directives on hazardous materials.

· **Safety phrases:**

Do not empty into drains.

· **Water hazard class:** Water hazard class 1 (Self-assessment): slightly hazardous for water.

### 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Contact:** MSDS Coordinator, [msds@merial.com](mailto:msds@merial.com)

· **Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organization

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

ACGIH: American Conference of Governmental Industrial Hygienists

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

USA