SAFETY DATA SHEETS

This SDS packet was issued with item:

078340116

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

078345199 078345207



Reviewed on 01/07/2010 Printing date 01/07/2010

1 Identification of substance

· Product details

· Trade name: Ivermectin

Ivomec Plus Injection for Cattle

· Item number: 67293, 67294, 67295, 67296, 67302, 67303, 67304, 67305

· Manufacturer/Supplier:

Merial Limited 3239 Satellite Blvd. Duluth, Ga. 30096-4640

1-888-MERIAL 1 (1-888-637-4251)

· Information department: MSDS Coordinator

· 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

· Components:			
57-55-6	Propylene Glycol		50.0%
5464-28-8	Glycerol Formal	Warning: 2.6/4	39.0%
60200-06-8	Clorsulon		10.0%
70288-86-7	Ivermectin Comp. B1a Comp. B1b	T, N; R 20/21-25-50 Danger: 3.1.0/2, 3.1.D/3, 3.1.I/3 Warning: 4.1.A/1	1.0%

[·] 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:

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 = 0Fire = 0Reactivity = 0

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Trade name: Ivermectin

Ivomec Plus Injection for Cattle

· HMIS-ratings (scale 0 - 4)



· GHS label elements

Warning

2.6/4 - Combustible liquid.

· Prevention:

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Wear protective gloves/protective clothing/eye protection/face protection.

· Response:

In case of fire: Use for extinction: CO2, powder or water spray.

· Storage:

Store in a well-ventilated place. Keep cool.

· Disposal:

Dispose of contents/container in accordance with local/regional/national/international regulations.

4 First aid measures

- · General information: Immediately remove any clothing soiled by the product.
- · After inhalation: 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. In case of symptomatic effect provide treatment to maintain life functions.

5 Fire fighting measures

· Suitable extinguishing agents:

CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

· Protective equipment: 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.

USA ·

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Trade name: Ivermectin

Ivomec Plus Injection for Cattle

Handle with care. Avoid jolting and impact.

- · 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: $< 30^{\circ}C (86^{\circ}F)$

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.

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· Eye protection:



Safety goggles.

· Body protection: Impervious protective clothing

9 Physical and chemical properties

· General Information		
Form:	Liquid	
Color:	Colorless to Yellow	
Odor:	Slight or no odor	

-USA

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Trade name: Ivermectin

Ivomec Plus Injection for Cattle

· Change in condition Melting point/Melting range: Boiling point/Boiling range:	
· Flash point:	81°C (178°F)
· Ignition temperature:	371°C (700°F)
· Auto igniting:	Product is not self-igniting.
· Danger of explosion:	Product does not present an explosion hazard.
· Explosion limits:	
Lower:	2.6 Vol %
Upper:	12.6 Vol %
· Vapor pressure at 20°C (68°F):	0.1 hPa
· Specific gravity at 25°C (77°F):	1.09-1.21
· Solubility in / Miscibility with	
Water:	Not established
Organic solvents:	50.0 %
· Solids content:	1.0 %

10 Stability and reactivity

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

11 Toxicological information

· Acute toxicity:

· LD/LC5	· LD/LC50 values that are relevant for classification:		
<i>5464-28</i>	5464-28-8 Glycerol Formal		
Oral	LD50	10200 mg/kg (rat)	
60200-0	60200-06-8 Clorsulon		
Oral	LD50	>20 mg/kg (mouse)	
		>10 mg/kg (rat)	
70288-8	70288-86-7 Ivermectin Comp. B1a		
	Comp. B1b		
Oral	LD Oral	>15 mg/kg (adult human)	
	LD50	~80 mg/kg (dog)	
		25 mg/kg (mouse)	
		50 mg/kg (rat)	
		>24 mg/kg (Rhesus monkey)	
Dermal	LD50	406 mg/kg (rabbit)	
		>660 mg/kg (rat)	

-USA

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Trade name: Ivermectin

Ivomec Plus Injection for Cattle

Inhalation	LC50/4h	>0.4 mg/kg (rat)	
	LD Subcutaneous	>1.6 mg/kg (adult human)	
	LD50 Intraperitoneal	al 55 mg/kg (rat)	
	LD50 Subcutaneous	~10 mg/kg (juvenile dog)	

- · 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

· Ecotoxological effects:

· Aquatic toxicity:

70288-86-7 Ivermectin Comp. B1a Comp. B1b

LC50 / 48 hrs 0.025 ppb (Daphnia magna) LC50/96 hours .3 ug/l (Rainbow Trout)

· General notes:

Water hazard class 2 (Self-assessment): hazardous for water

Do not allow any volumes of product to reach ground water, water source or sewage system.

Danger to drinking water if even small quantities leak into the ground.

13 Disposal considerations

- · Product:
- · Recommendation:

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

- · Uncleaned packagings:
- · Recommendation: Disposal must be made according to official regulations.

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)

-USA

Printing date 01/07/2010 Reviewed on 01/07/2010

Trade name: Ivermectin

Ivomec Plus Injection for Cattle

· 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)

· UN "Model Regulation": -

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):

57-55-6 Propylene Glycol

· 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.

· 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.

Printing date 01/07/2010 Reviewed on 01/07/2010

Trade name: Ivermectin

Ivomec Plus Injection for Cattle

· 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, dispose of this material and its container at hazardous or special waste collection point

· Water hazard class: Water hazard class 2 (Self-assessment): 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.

- · Department issuing MSDS: MSDS Coordinator
- · Contact: MSDS Coordinator, 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

LISA



Reviewed on 01/07/2010 Printing date 01/07/2010

1 Identification of substance

· Product details

· Trade name: Ivermectin

IVOMEC Injection for Swine

· Item number: 41275, 41288, 41289

· 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		59.0%
5464-28-8	Glycerol Formal	Warning: 2.6/4	40.0%
70288-86-7	Ivermectin Comp. B1a Comp. B1b	T, N; R 20/21-25-50 Danger: 3.1.0/2, 3.1.D/3, 3.1.I/3 Warning: 4.1.A/1	1.0%

3 Hazards identification

- · Hazard description: Not applicable.
- · 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 = 0Fire = 0Reactivity = 0

· HMIS-ratings (scale 0 - 4)



Health = 0Fire = 0

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Trade name: Ivermectin

IVOMEC Injection for Swine

· GHS label elements Void

4 First aid measures

- · General information: Immediately remove any clothing soiled by the product.
- · After inhalation: Not an expected route of entry.
- · *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.

5 Fire fighting measures

- · Suitable extinguishing agents: Use water spray or all purpose dry chemical.
- \cdot Special hazards caused by the material, its products of combustion or resulting gases:

If exposed to fire, toxic gases including CO and CO2 may be generated.

· 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.

- · 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.

Protect from direct sunlight.

Protect from light.

- · Information about storage in one common storage facility: Not required.
- · Further information about storage conditions: Store in a cool, dry, well ventilated place.

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Trade name: Ivermectin

IVOMEC Injection for Swine

• Recommended storage temperature: $< 30^{\circ}C (86^{\circ}F)$

8 Exposure controls and personal protection

· 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.

- · 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: Not required under normal conditions of use.

9 Physical and chemical properties

· General Information	
Form:	Liquid
Color:	Clear
Odor:	No odor listed.
· Change in condition	
Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	Undetermined.
· Flash point:	Not applicable.
· Auto igniting:	Product is not self-igniting.
· Danger of explosion:	Product does not present an explosion hazard.
· Specific gravity:	Not determined.
· Solubility in / Miscibility with	
Water:	Not applicable
· Solvent content:	0 %

10 Stability and reactivity

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

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Trade name: Ivermectin

IVOMEC Injection for Swine

11 Toxicological information

· Acute toxicity:

· LD/LC50 values that are relevant for classification:		
70288-86-7 Ivermectin Comp. B1a Comp. B1b		
Oral	LD50	~80 mg/kg (dog)
		25 mg/kg (mouse)
		50 mg/kg (rat)
Dermal		406 mg/kg (rabbit)
		>660 mg/kg (rat) 5.11 mg/l (rat)
Inhalation	LC50/4 h	5.11 mg/l (rat)

- · Primary irritant effect:
- · on the skin: No irritating effect known.
- · on the eye: May cause irritation.
- · 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

· Ecotoxological effects:

· Aquatic toxicity:
70288-86-7 Ivermectin Comp. B1a
Comp. B1b

LC50 / 48 hrs 0.025 ppb (Daphnia magna) LC50/96 hours .3 ug/l (Rainbow Trout)

· General notes:

Harmful to aquatic organisms

Do not allow any volumes of product to reach ground water, water source or sewage system.

13 Disposal considerations

- · Product:
- · Recommendation: Disposal must be made according to local requirements.
- · Uncleaned packagings:
- $\cdot \textit{Recommendation:} \ \textit{Disposal must be made in accordance with local requirements}.$

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Printing date 01/07/2010 Reviewed on 01/07/2010

Trade name: Ivermectin

IVOMEC Injection for Swine

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)

· UN "Model Regulation": -

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):

None of the ingredients are listed.

- · 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.

· 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.

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Trade name: Ivermectin

IVOMEC Injection for Swine

· 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, dispose of this material and its container at hazardous or special waste collection point

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
- · Abbreviations and acronyms:

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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

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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

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