SAFETY DATA SHEET
Ivermectin Pour On for Cattle

1. PRODUCT AND COMPANY IDENTIFICATION

SDS Name:	Ivermectin Pour On for Cattle
Product ID:	IVP50, IVP20, IVP10, IVP4
DIN Number:	02330369
CAS no:	Mixture
Chemical Present:	See components below
Company Identification:	Alberta Veterinary Laboratory Ltd. 7226- 107th Avenue South East Calgary, Alberta Canada T2C5N6
For information call:	(403) 456-2245
Emergency number:	(613) 996-6666 (CANUTEC) 1-800 463-5060 OR (418) 656-8090 (Control Poison Center)

2. HAZARD IDENTIFICATION

Emergency Overview

FLAMMABLE LIQUID AND VAPOUR: Vapour is heavier than air and may spread long distance. Distant ignition and flashback are possible. During a fire, irritating/toxic smoke and fumes may be generated. Mild central nervous system depressant. High vapour concentrations may cause headache, nausea, dizziness, incoordination, and confusion. Higher exposure may result in unconsciousness and death. May be irritating to the respiratory tract. EYE IRRITANT. Causes eye irritation. POSSIBLE REPRODUCTIVE HAZARD – may cause harmful effects to the fetus, based on laboratory animal evidence. Aspiration hazard. Swallowing or vomiting of the liquid may cause aspiration (breathing) into the lungs.

POTENTIAL HEALTH EFFECTS (for more details, refer to Section 11)
Primary entry route(s): Skin, eye, ingestion and inhalation
Effects of short- term (acute) and long –term (chronic) exposure:
Inhalation: May cause central nervous system (CNS) depression. May cause headache, nausea, dizziness, drowsiness, incoordination and confusion. High exposures may result

in unconsciousness and death. May be irritating to the respiratory tract.

Skin: May cause a mild irritation
Eye: Product is a moderate to severe eye irritant
Ingestion: Ingestion of large quantities of this product may be harmful. Aspiration hazard. Swallowing or vomiting of the liquid may cause aspiration (breathing) into the lungs.

3. CHEMICAL COMPOSITION / HAZARDOUS INGREDIENTS

CAS #	Hazardous Ingredients	% (weight)	LD_{50} (route, species)	LC_{50} (species)
69-52-3	Ivermectin	0.5	25 mg/kg (oral, mouse) 50 mg/kg (oral, rat) >660 mg/kg (dermal, rat)	Not available
67-63-0	Isopropyl Alcohol (Isopropanol)	60 - 100	5840 mg/kg (oral, female rat)	17000 ppm 4 hours (rat)

4. FIRST AID MEASURES

Inhalation: Remove source of contamination or have victim move to fresh air. If Breathing is difficult, give oxygen. If not breathing, give artificial respiration. Obtain medical attention immediately.

Skin contact: Flush contaminated area with lukewarm, gently running water for at least 5 minutes or until the chemical is removed. Under running water, remove contaminated clothing. If irritation persists, obtain medical advice. Completely decontaminate clothing before reuse or discard.

Eye contact: Immediately flush the contaminated eye(s) with lukewarm, gently flowing water for at least 20 minutes, or until the chemical is removed, while holding the eyelid(s) open. Obtain medical attention immediately.

Ingestion: NEVER give anything by mouth if victim is rapidly losing consciousness or is unconscious or convulsing. Rinse mouth thoroughly with water. DO NOT INDUCE

VOMITING. Have victim drink two glass of water. If vomiting
Occurs naturally, have victim lean forward to reduce risk of aspiration. Repeat administration of water. Obtain medical attention immediately.

5. FIRE FIGHTING MEASURES

Fire hazards/conditions of flammability: Flammable liquid. Can readily form explosive mixtures with air at room temperature. Vapour is heavier than air and may travel a considerable distance to a source of ignition and flash back to a leak or open container. Distant ignition and flashback are possible.

Flash point (Method): 14°C (57.2°F) (closed cup)

Lower flammable limit (% by volume): N/Av

Upper flammable limit (% by volume): N/Av

Sensitivity to mechanical impact: Probably not sensitive. Stable material.

Sensitivity to static discharge: Product will not accumulate static charge since it has a high electrical conductivity. Mixtures of vapour and air at concentrations in the flammable range may be ignited by a static discharge of sufficient energy.

Auto-ignition temperature: ~ 399°C (750°F)

Suitable extinguishing media: Carbon dioxide, dry chemical powder, appropriate foam, water spray of fog.
Special fire-fighting procedures/equipment: During a fire, irritating/toxic smoke and fumes may be generated. Vapours can accumulate in confined spaces, resulting in a toxicity and flammability hazard. A self-contained Breathing apparatus is required for fire-fighting personnel to protect themselves from toxic products produced during the combustion. Closed containers may explode with the pressure building from the heat. Use water to cool fire exposed containers and prevent this situation. Hazardous combustion products: Carbon oxides and other irritant gases, which may include unburned alcohol and toxic constituents.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: FLAMMABLE. Restrict access to area until completion of clean-up. Ensure clean-up is conducted by trained personnel only. Remove all ignition sources. Remove or isolate flammable and combustible materials. Wear adequate personal protective equipment (See Section 8). Ventilate area.

Spill response/Cleanup: Stop the flow if it can be done safely. Keep materials which can burn away from spilled material. Prevent material from entering waterways, sewers or confined

	spaces. SMALL SPILLS: Soak up spill with absorbent material which does not react with spilled chemical. Put material in suitable, covered, labelled containers. Flush area with water. LARGE SPILLS: Contain spill with earth, sand, or absorbent material which does not react with spilled material. Remove liquid by explosion-proof pumps or vacuum equipment. Place in suitable, covered, labelled containers. Contact fire and emergency services and supplier for advice. Contaminated absorbent material may pose the same hazards as the spilled product.
Environmental precautions:	For large spills, notify government occupational health and safety and environmental authorities. Confine spill, preventing it from entering sewer lines or waterways. Dispose of as per local, state and federal regulations.

7. HANDLING AND STORAGE

Safe handling procedures:	FLAMMABLE, POSSIBLE REPRODUCTIVE HAZARD and EYE IRRITANT. Before handling, it is very important that engineering controls are operating, and that protective equipment requirements and personal hygiene measures are being followed. People working with this chemical should be properly trained regarding its hazard and its safe use. Ground all drums, transfer vessels, hoses and piping. Do not use near welding operations, flames or hot surfaces. Use in a well-ventilated area. Avoid generating vapours or mists. Inspect containers for leaks before handling. Never return contaminated material to its original container. Label containers appropriately. Keep containers closed when not in use. Assume that empty containers contain residues which are hazardous. Do not use with incompatible materials such as strong oxidizing agents.
Storage requirements:	Store in a cool, well-ventilated area, out of direct sunlight and away from heat and ignition sources. Keep storage area clear of ignition sources. Store away from incompatible materials such as oxidizers. If stored at temperatures below 0°C (32°F), this product may appear cloudy. Allowing it to warm at room temperature will restore the normal appearance without affecting efficacy. Inspect all incoming containers to make sure they are properly labelled and not damaged. Store in suitable,

labelled containers. Keep containers tightly closed. Empty containers may contain hazardous residues. Keep closed. Bond and ground metal containers in storage area. Keep absorbents for leaks and spills readily available. Storage facilities should be made of fire-resistant materials. For large-scale storage, use a grounded, non-sparkling ventilation systems, approved explosion-proof equipment and intrinsically safe electrical systems. Storage area should be clearly identified, clear of construction and accessible only to trained personnel. Inspect periodically for damage or leaks. Have appropriate fire extinguishers and spill clean-up equipment in or near storage area.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Engineering controls:	Local exhaust ventilation system is recommended to maintain concentrations of contaminants below exposure limits.
Respiratory protection:	Respiratory protection is required if the concentrations are higher than the exposure limits. Use a NIOSH approved respirator if the exposure limits are unknown.
Protective clothing/ equipment:	Water chemically protective gloves (impervious), boots, aprons, and gauntlets to prevent prolonged or repeated skin contact. Wear protective chemical safety goggles or in a splash environment in combination with a face shield. Make emergency eyewash stations, safety/ quick-drench showers, and washing facilities available in work area. Separate contaminated work clothes from street clothes. Launder before reuse.
Comments:	Avoid contact with skin and eyes. Avoid breathing vapours or mists. Never eat, drink, or smoke in work areas. Practice good personal hygiene after using this material.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state, colour and odour: Blue liquid with an alcohol odour.
Odour threshold: Not Available
pH: Not Available
Boiling point: Not Available
Melting/freezing point: Not Available
Vapour pressure: 33.1 mm Hg at 20°C (for Isopropanol).
Solubility in water: Complete
Coefficient of oil/water distribution: Not Available
Specific gravity or density (water=1, at 4°C): 0.786 at 20°C
Vapour density: Heavier than air
Evaporation rate: ~1.5 (butyl acetate=1)
% volatile by volume: Not Available

10. REACTIVITY AND STABILITY DATA

Stability and reactivity: Stable at room temperature, in normal handling and storage conditions.
Polymerization: Hazardous polymerization will not occur
Conditions to avoid: Avoid STRONG OXIDIZING AGENTS, STRONG ACIDS, ALUMINIUM, keep away from ignition sources.
Materials to Avoid: Avoid STRONG OXIDIZING AGENTS, STRONG ACIDS, ALUMINIUM
Hazardous decomposition products: Unstable peroxides

11. TOXICOLOGICAL INFORMATION

Exposure limits:

Ingredient		**OSHA PEL**	**OSHA PEL**	**ACGIH TLV**	**ACGIH TLV**	**Other Exposure limits**
	TWA	**STEL**	**TWA**	**TWA**	**STEL**	**STEL**
Ivermectin		Not Available	Not Available	Not Available	Not Available	Not Available
Isopropyl alcohol		400 ppm	500 ppm	400 ppm	500 ppm	Not available

For more details, refer to Section3.
Carcinogenicity: No ingredient listed by IARC, ACGIH, NTP and OSHA as a carcinogen.
Teratogenicity, mutagenicity, other reproductive effects:

POSSIBLE REPRODUCTIVE HAZARD – may cause harmful effects to the fetus, based on laboratory animal evidence.

Skin sensitization: Not Available
Respiratory tract sensitization: Not Available
Synergistic materials: Isopropyl alcohol can enhance the toxicity of carbon tetrachloride, 1,1,2-trichloroethane, chloroform, trichloroethylene, and dimethyl nitrosamine.

12. ECOLOGICAL INFORMATION

Environmental effects: Not Available
Important environmental characteristics: Not Available
Aquatic toxicity: Not Available for this product. Ivermectin is harmful to aquatic life.

13. WASTE DISPOSAL

Handling and storage conditions for disposal: Store material for disposal as indicated Handling and Storage (Section7).

Method of disposal: Review federal, provincial and local government requirements prior to disposal.

14. TRANSPORTATION INFORMATION

Transformation of Dangerous Goods (TDG):
Shipping description: This product is regulated according to those Regulations.
Proper shipping name: Ivermectin Pour On for Cattle
Class: 3
Identification number: UN1219 (Isopropyl alcohol)
Packing group: II
Special case: This product may be shipped in accordance with TDG Section 1.17 as a LIMITED QUANTITY if each inner container does not exceed 1L.

15. REGULATORY INFORMATION

In Canada
WHMIS information: Product is regulated according to the Food and Drugs Act and is exempted from the Controlled Product Regulation (CPR) in Canada.

Hazardous Materials Identification System (HMIS):
Health: 1 Flammability**:** 3 **Reactivity:** 0
Personal Protection: Section 8
Hazard: 0 Minimal 1 Slight 2Moderate 3Serious 4Severe
National Fire Protection Association (NFPA):
Health: 1 **Flammability:** 3 **Reactivity:** 0
Personal Protection: Section 8
Hazard: 0 Minimal 1Slight 2Moderate 3Serious 4Severe

16. OTHER INFORMATION

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Alberta Veterinary Laboratory Ltd. be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Alberta Veterinary Laboratory Ltd. has been advised of the possibility of such damages.

This product has been classified in accordance with the hazard criteria of the CPR and the SDS contains all of the information required by the CPR

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