



SAFETY DATA SHEET

Version Date: 26 October 2010
Supersedes: 23 October 2001

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Fipronil (25%) Spray

Trade Name(s): FIPRONIL SPRAY
FRONTLINE
FRONTLINE 0.5 ML AND 1.5 ML
FRONTLINE 2.5 MG/ML SPRAY
FRONTLINE PERMET A.U.V.
FRONTLINE SPRAY
FRONTLINE SPRAY AD US. VET.
FRONTLINE SPRAY POMPE (0.5 ML - 1.5 ML)
FRONTLINE VET. - SOLUTION FOR EXTERNAL USE 2,5 MG/ML

Chemical Family: Mixture: phenylpyrazole
Chemical Name: Mixture - NA
Synonyms: NA
Formula: None
Product Use: Veterinary medicine

COMPANY ADDRESS Merial Limited
3239 Satellite Blvd.
Duluth, Georgia 30096-4640

EMERGENCY INFORMATION:

HEALTH INFORMATION 1-888-637-4251, option 3 (U.S.A. and Canada)

SPILL INFORMATION CHEMTREC® (In the U.S.A.): 1-800-424-9300
CHEMTREC® (International): 1+703-527-3887 (call collect)

2. COMPOSITION/INFORMATION ON INGREDIENTS

Components	% w/w	OSHA PEL		ACGIH TLV-TWA/STEL	
		ppm	mg/m ³	ppm	mg/m ³
Fipronil (CAS# 120068-37-3)	0.3	NE	NE	NE	NE
Isopropanol (CAS# 67-63-0)	73.2	400	980	400/500	980/1225
Non Hazardous Substances*	26.5	NE	NE	NE	NE

NE = Not Established

* Merial regards the identity of the individual components of this formulation to be proprietary information which is being withheld in accordance with the Trade Secret provisions of 29 CFR 1910.1200. Certain of the excipients included in the mixture may be classified as a health hazard. However, the excipients are at levels that are recognized as safe, and/or have been


approved for use at these levels in various food, pharmaceutical and/or cosmetic products or applications.

3. HAZARDS IDENTIFICATION


Warning!

Emergency Overview

Harmful if swallowed. Harmful in contact with skin. Causes eye Irritation. May be toxic to aquatic organisms. Do not eat, drink, or smoke when handling this material. Wash hands thoroughly after handling.

Physical Hazard (GHS Classification)	Category	Pictogram	Signal Word	Hazard Statement
Flammable liquid	3		Warning	Flammable liquid and vapor (H226)

Health Hazard (GHS Classification)	Category	Pictogram	Signal Word	Hazard Statement
Acute Oral Toxicity	5	No Symbol	Warning	May be harmful if swallowed (H303)
Acute Dermal Toxicity	5	No Symbol	Warning	May be harmful in contact with skin (H313)
Dermal Irritation	-	-	-	-
Ocular Irritation	2B	No Symbol	Warning	Causes eye irritation (H320)
Dermal Sensitization	-	-	-	-

Environmental Hazard (GHS Classification)	Category	Pictogram	Signal Word	Hazard Statement
Acute Aquatic Toxicity	1		Warning	Very toxic to aquatic life (H400)

	Hazardous Materials Identification System (HMIS)	National Fire Protection Association (NFPA)
Health	1	0
Fire	1	2
Reactivity	0	0

POTENTIAL HEALTH EFFECTS

The following potential health effects may be extrapolated from the individual components of the mixture.

EYE:	The product is moderately irritating to the eyes.
SKIN:	The product is not anticipated to produce skin irritation.
INHALATION:	The product is not anticipated to produce vapors in a sufficient quantity that would be irritating to eyes, skin, nose and/or throat.
INGESTION:	This product may be harmful if swallowed.
CHRONIC EFFECTS:	No specific effects of chronic exposure are known.
SIGNS AND SYMPTOMS OF EXPOSURE:	Ingestion (i.e. large quantities) of this product may result in nausea, drowsiness, headache, tremors, and dizziness. Ocular exposure may result in transient redness, tearing or pain.
MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:	None known.

POTENTIAL ENVIRONMENTAL EFFECTS

Some components of this mixture are toxic to aquatic organisms. Do not allow this product to come in contact with soil or be discharged to waterways.

4. FIRST AID MEASURES

EYE CONTACT:	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician if irritation persists.
SKIN CONTACT:	In case of contact, immediately wash skin with soap and water. Remove contaminated clothing and shoes and launder before reuse. If skin irritation develops and persists or recurs, contact a physician.
INHALATION:	If lungs are irritated or breathing is difficult, move patient to fresh air and contact a physician.
INGESTION:	If swallowed, seek immediate medical attention.

5. FIRE FIGHTING MEASURES

Property	Value	Property	Value
Flash Point (°C):	18°C	Burning Rate of Material:	No data
Lower Explosive Limit:	No data	Autoignition Temp.:	459°C
Upper Explosive Limit:	No data	Flammability Classification: (defined by 29 CFR 1910.1200)	Liquid, flammable

DANGER OF EXPLOSION: This product is not explosive. However, formation of explosive

	air/vapor mixtures is possible.
UNUSUAL FIRE AND EXPLOSION HAZARDS:	Prevent accumulation of vapors. When heated to decomposition, may produce oxides of carbon and nitrogen.
EXTINGUISHING MEDIA:	Carbon dioxide, dry chemical extinguishers, foam, water fog or spray. Large fires with "alcohol"-type foam extinguishers. Use extinguishing media appropriate for surrounding materials. Water may be ineffective, but should be used to keep fire-exposed containers cool.
PROTECTION OF FIREFIGHTERS:	Fire fighters should wear NIOSH/MSHA approved positive pressure self-contained breathing apparatus and full protective equipment.

6. ACCIDENTAL RELEASE MEASURES For transportation-related and large spills call **CHEMTREC at 1-800-424-9300. If outside the U.S.A., call CHEMTREC collect at +1-703-527-3887.** For small spills, using protective equipment as prescribed in Section 8. Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust). Dispose contaminated material in sealed container as waste according to Section 13.

PERSONAL PRECAUTIONS: Evacuate unnecessary personnel and eliminate all sources of ignition. Follow protective measures provided under Personal Protection in Section 8.

ENVIRONMENTAL PRECAUTIONS: Avoid discharges to sewers and streams.

METHODS FOR CLEANING UP: For small spills, soak up with absorbent materials and place in properly labeled containers. Large spills can be removed using a vacuum truck.

7. HANDLING AND STORAGE

HANDLING: No smoking, eating, or drinking while using this product. Keep container tightly closed when not in use. Provide for adequate ventilation to prevent accumulation of vapors.

Avoid prolonged or repeated exposure. Do not get in eyes, on skin or clothing. Keep away from incompatible materials (see Section 10).

PROTECTION AGAINST EXPLOSION AND FIRES: Keep ignition sources away. Do not smoke. Protect against electrostatic charges.

STORAGE: Store in a well ventilated location.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION (INDUSTRIAL)

The following component has OSHA and ACGIH exposure limits.

Components	% w/v	OSHA PEL		ACGIH TLV-TWA/STEL	
		ppm	mg/m ³	ppm	mg/m ³
Isopropanol (CAS# 67-63-0)	80	400	980	400/500	980/1225

- ENGINEERING CONTROLS:** Special, local ventilation is needed at points where vapor can be expected to escape to the workplace air. Use good general local exhaust ventilation to prevent accumulation of vapors.
- EYE / FACE PROTECTION:** Wear chemical splash goggles when cleaning spilled product or if the potential for eye contact exists (ANSI A87.1). Wear safety glasses with side shields for normal handling.
- SKIN PROTECTION:** Wear butyl rubber, neoprene, vinyl or other chemical resistant impervious gloves when using this product in larger quantities to prevent skin contact. Wash thoroughly after handling.
- RESPIRATORY PROTECTION:** Wear mask with organic vapor cartridge, gloves, protective clothing, and eye protection when cleaning up spills. For normal use, ensure adequate exhaust ventilation.
- GENERAL HYGIENE CONSIDERATIONS:** Do not eat, drink, or smoke while using this product. Wash hands thoroughly after use.
- OTHER:** Emergency shower and eyewash facility should be in close proximity (ANSI Z358.1).
- Contaminated clothing must be cleaned and laundered before reuse. (29 CFR 1910.1048).

9. PHYSICAL AND CHEMICAL PROPERTIES

Property	Value	Property	Value
Appearance:	Light amber colored	Vapor Density (air = 1):	No data
Odor:	Like alcohol	Vapor Pressure (at 20 °C; hPa):	43.0
Physical State:	Liquid	Solubility in Water (20 °C):	soluble
pH:	No data	Specific gravity (at 20 °C; g/m ³):	0.859
Boiling Point (°C/°F):	82/180	Viscosity (cps):	<10
Freezing/melting point:	No data	Solvent Content:	
		Organic solvent:	73%
		Solid content:	0.3%

10. STABILITY AND REACTIVITY

STABILITY: Stable under normal conditions.

CONDITIONS TO AVOID:	Avoid exposure to heat, sparks, or flame.
MATERIALS TO AVOID:	Avoid strong oxidizing agents
HAZARDOUS DECOMPOSITION PRODUCTS:	When heated to decomposition may produce oxides of carbon and nitrogen as well as other uncharacterized decomposition products.
HAZARDOUS POLYMERIZATION:	Will not occur.

11. TOXICOLOGICAL INFORMATION

POTENTIAL EXPOSURE ROUTES:	This product may be encountered through skin contact, eye contact, ingestion, or inhalation of vapors.
SIGNS AND SYMPTOMS OF EXPOSURE:	This product may produce transient eye irritation on contact. Components of this product can affect CNS if toxic amounts are swallowed or inhaled (slow heart rate, low blood pressure, low body temperature).

The following toxicity data are derived from the final formulation.

ACUTE ANIMAL TOXICITY DATA for Formulation:

Oral LD₅₀ (mg/kg)	>2000 (rat)
Dermal LD₅₀ (mg/kg)	>2000 (rat)
Inhalation LC₅₀ (mg/L)	NE
Ocular Irritant	Mildly irritating to eyes
Dermal Irritant	Non-irritating
Dermal Sensitizer	Non-sensitizing

NE = Not Established

The following toxicity data are derived from the formulation components, and are considered relevant to the final formulation.

CARCINOGENICITY:	None of the components of the mixture are considered to be carcinogenic in humans.
MUTAGENICITY:	None of the components of the mixture are considered to be mutagenic.
REPRODUCTIVE EFFECTS:	None of the components of the mixture are considered to be a reproductive toxin at the dose rate and frequency stated on the packaging for this formulation.
TERATOGENICITY/ DEVELOPMENTAL EFFECTS:	None of the components of the mixture are considered to be teratogenic or a developmental toxin at the dose rate and frequency stated on the packaging for this formulation.

NEUROLOGICAL EFFECTS: Symptoms of respiratory depression or central nervous system depression may occur if exposed to the formulation in large volumes. Clinical signs include: loss of consciousness, nausea, drowsiness, headache, tremors, and dizziness.

INTERACTIONS WITH OTHER CHEMICALS WHICH ENHANCE TOXICITY: None known

12. ECOLOGICAL INFORMATION

The following toxicity data are derived from the formulation components, and are considered relevant to the final formulation.

TOXICITY: LC₅₀/EC₅₀ ranged from 0.009 to >100 mg/L for freshwater fish, invertebrates and plants.

Based on test results for the most sensitive species (freshwater invertebrates) and mathematical modeling, the environmental category for the formulation would be Category 1 Acute Aquatic Toxicity (GHS standards).

PERSISTENCE: Based upon biodegradation testing, computer modeling and physico-chemical characteristics of the various components in the formulation, all of the components are inherently biodegradable in the environment.

BIOACCUMULATION: The K_{ow} of the individual components predict that some of the components have the potential for bioaccumulation in the environment, but based on fugacity modeling and biodegradation testing, the results would suggest that the potential is low for those components. Therefore, it is anticipated that none of the various components in the formulation would persist in the environment.

Remarks: Do not allow this product to be discharged to waterways. Components of this product are toxic to aquatic and insect species.

13. DISPOSAL CONSIDERATIONS

Responsibility for proper waste disposal is with the owner of the waste.

Dispose of all waste product and containers in accordance with local, state, federal, and national regulations.

14. TRANSPORT INFORMATION

USDOT Regulations:	Hazard Class:	3
	Identification Number:	1219
	Packing Group:	II
	Proper Shipping Name: (technical name)	Isopropanol (Isopropyl Alcohol)

Land Transport ADR/RID: (cross-border)	ADR/RID Class:	3 Flammable Liquids
	Danger Code (Kemler):	33
	UN Number:	1219
	Packaging Group:	II
	Proper Shipping Name:	Isopropanol (Isopropyl Alcohol)
Maritime Transport IMDG:	IMDG Class:	3
	UN Number:	1219
	Label:	3
	Packaging Group:	II
	EMS Number:	3-05
	Marine Pollutant:	Yes
	Proper Shipping Name:	Isopropanol (Isopropyl Alcohol)
Air Transport ICAO-TI and IATA-DGR:	ICAO/IATA Class:	3
	UN/ID Number:	1219
	Label:	3
	Packing Group:	II
	Proper Shipping Name:	Isopropanol (Isopropyl Alcohol)

15. REGULATORY INFORMATION

SARA 313 LISTING:	Isopropanol (Isopropyl Alcohol) is the only component of this formulation listed under SARA 313.	
SARA 312 HAZARD CLASS:	Isopropanol (Isopropyl Alcohol) is listed as a Fire, Acute Health and Chronic Health Hazard.	
SARA EXTREMELY HAZARDOUS SUBSTANCES:	None of the components of this product are listed.	
EPA HAZARDOUS SUBSTANCES LIST:	None of the components of this product are listed.	
TSCA INVENTORY STATUS:	Isopropanol (Isopropyl Alcohol; 2-propanol) is the only component of this formulation listed TSCA Chemical Substance Inventory.	
CANADIAN WHMIS CLASS:	Isopropanol (Isopropyl Alcohol) is listed as flammable.	
GHS Hazard Phrase:	H226	Flammable liquid and vapor
	H303	May be harmful if swallowed
	H313	May be harmful in contact with skin
	H320	Causes eye irritation
	H400	Very toxic to aquatic life with long lasting effects
GHS Precautionary Phrases:	P210	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
	P233	Keep container tightly closed.
	P240	Ground/bond container and receiving equipment.
	P241	Use explosion-proof electrical/ventilating/lighting/.../equipment.

P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P264/P280	Wash thoroughly after handling
P303 + P361 + P353	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313	If eye irritation persists: Get medical advice/attention.
P370 + P378	In case of fire: Use ... for extinction.
P403 + P235	Store in a well-ventilated place. Keep cool.
P501	Dispose of contents/container in accordance with local/regional/national/international regulation
P313/P316	Call a POISON CENTER or doctor/physician if you feel unwell.
P273	Avoid release to the environment.
P391	Collect spillage.

STATE RIGHT-TO-KNOW STATUS

Component	CA	NJ	PA	MA
Fipronil	Not listed	Not listed	Not Listed	Not listed
Isopropanol (Isopropyl Alcohol)	listed	Listed	Listed	Listed

CA = California Proposition 65
PA = Pennsylvania

NJ = New Jersey
MA = Pennsylvania

16. OTHER INFORMATION**KEY/LEGEND USED:**

NE = Not Established
LD50 = The lethal dose where 50% mortality or affect is noted

DISCLAIMER:

The above information is intended to give general health and safety guidance on the storage and transport of the product. It is not intended to apply to the use of the product, for which purposes the product label and any appropriate technical usage literature available should be consulted and any relevant licenses, consents or approvals complied with.

The requirements or recommendations of any relevant site or working procedure, system or policy in force or arising from any risk assessment involving the substance or product should take

precedence over any of the guidance contained in this safety data sheet where there is a difference in the information given.

To the best of our knowledge, the information provided in this safety data sheet is accurate at the date of publication and will be updated as and when appropriate. However, neither Merial nor any of its subsidiaries or parents assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards may be described herein, Merial cannot guarantee that these are the only hazards that exist.