



SAFETY DATA SHEET

Version Date: 28 April 2011
Supersedes: 08 December 2010

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Fipronil (10%) Spot-On Solution for Dogs, Puppies, Cats and Kittens

Trade Name(s): FRONTLINE
FRONTLINE 10% SOLUCION TOPICA
FRONTLINE ORIGINAL FOR DOGS
FRONTLINE ORIGINAL FOR CATS
FRONTLINE SPOT ON CAT AND DOG SOL. A.U.V.
FRONTLINE SPOT ON CHAT / KAT / KATZE
FRONTLINE SPOT ON CHIEN - CHAT
FRONTLINE SPOT ON CHIEN XL
FRONTLINE SPOT ON DOG
FRONTLINE SPOT ON DOG AND CAT
FRONTLINE SPOT ON DOG XL
FRONTLINE SPOT ON DOG XL SOL.
FRONTLINE SPOT ON DOGS AND CATS
FRONTLINE SPOT-ON
FRONTLINE SPOT-ON 10% - LOSUNG ZUR KUTANEN
FRONTLINE SPOT-ON CAES
FRONTLINE SPOT-ON CANI & GATTI
FRONTLINE SPOT-ON CAT
FRONTLINE SPOT-ON CATS
FRONTLINE SPOT-ON CHAT
FRONTLINE SPOT-ON CHIEN
FRONTLINE SPOT-ON CHIEN (S-M-L)
FRONTLINE SPOT-ON CHIEN/HOND/HUND
FRONTLINE SPOT-ON CHIENS (S-M-L-XL)
FRONTLINE SPOT-ON DOG
FRONTLINE SPOT-ON GATO
FRONTLINE SPOT-ON GATOS
FRONTLINE SPOT-ON H (10-20-40) & K
FRONTLINE SPOT-ON PERROS
FRONTLINE SPOT-ON VET. - SOLUTION FOR EXTERNAL USE
FRONTLINE TOP SPOT
FRONTLINE TOP SPOT CATS
FRONTLINE TOP SPOT DOGS
FRONTLINE TOP SPOT DOGS AND CATS
FRONTLINE TOP-SPOT HOND & KAT

The following information is intended to give general health and safety guidance on the manufacturing, storage and transport of the mixture. Professional and non-professional users should consult label and package inserts for the proper use, storage and disposal of this mixture.

Chemical Family: Mixture: phenylpyrazole
Chemical Name: Mixture - NA
Synonyms: NA
Formula: None
Product Use: Fipronil (10%) Solution is used in veterinary medicine for the treatment and prevention of fleas, ticks and biting lice infestation on dogs and cats.

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

Merial Australia Pty Ltd
Level 6, 79 George Street
Parramatta NSW 2150

EMERGENCY INFORMATION:**HEALTH INFORMATION
SPILL INFORMATION**

1-888-637-4251, option 3 (U.S.A. and Canada)
CHEMTREC® (In the U.S.A.): 1-800-424-9300
CHEMTREC® (International): 1-703-527-3887 (call collect)

**AUSTRALIA EMERGENCY
TELEPHONE NUMBER**

1-800-808-691 all-hours technical help
**Poisons Information Centre 131-126 toll-free anywhere
in Australia**


2. HAZARDS IDENTIFICATION**Danger!****Emergency Overview**



Flammable liquid and vapor. May be harmful if swallowed. May be harmful in contact with skin. Causes damage to central nervous system through single or prolonged/repeated exposure. Very toxic to aquatic life. Do not eat, drink, or smoke when handling this mixture. Wash hands thoroughly after handling.

Risk phrase(s): FLAMMABLE (R10)
HARMFUL BY INHALATION OR IN CONTACT WITH SKIN (R20/21)
IRRITATING TO EYES (R36)
DANGER OF SERIOUS DAMAGE TO HEALTH BY PROLONGED EXPOSURE (R48)
TOXIC IF SWALLOWED (25)


Safety Phrase(s): KEEP OUT OF THE REACH OF CHILDREN (S2)
KEEP CONTAINER TIGHTLY CLOSED AND IN A WELL-VENTILATED PLACE.
(S7/9)
KEEP AWAY FROM SOURCES OF IGNITION - NO SMOKING (S16)
DO NOT EMPTY INTO DRAINS (S29)
TAKE PRECAUTIONARY MEASURES AGAINST STATIC DISCHARGES (S33)
IF SWALLOWED, SEEK MEDICAL ADVICE IMMEDIATELY AND SHOW THE
CONTAINER OR LABEL. (S46)

The following three boxes are relevant to GHS classification and are provided for information only pending adoption of the Safe Work Australia regulations that combine Workplace Hazardous Substance and Dangerous Goods regulations. They are not labeling guides.

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	NC	-	-	-
Ocular Irritation	NC	-	-	-
Dermal Sensitization	NC	-	-	-
SPECIFIC TARGET ORGAN TOXICITY – SINGLE EXPOSURE:	1		Danger	Causes damage to organs (CNS) (H370)
SPECIFIC TARGET ORGAN TOXICITY – REPEATED EXPOSURE:	1		Danger	Causes damage to organs (CNS) through prolonged or repeated exposure (H372)

NC = Not Classified (study results do not meet the requirements for classification)

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

POTENTIAL HEALTH EFFECTS

The following potential human health effects are the results of the exposure to the mixture or extrapolated from the individual ingredients of the mixture.

EYE: The mixture is not anticipated to be irritating to the eyes.

SKIN:	The mixture is not anticipated to produce skin irritation or sensitization.
INHALATION:	The mixture is not anticipated to produce vapors in a sufficient quantity that would be irritating to eyes, skin, nose and/or throat.
INGESTION:	The mixture is harmful if swallowed.
CHRONIC EFFECTS:	The mixture is not anticipated to be carcinogenic, mutagenic, a reproductive toxin or a developmental toxin.
SIGNS AND SYMPTOMS OF EXPOSURE:	Signs and symptoms of exposure may include sweating, nausea, vomiting, headache, abdominal pain, dizziness, agitation, weakness and/or tonic-clonic seizures.
MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:	None known.

POTENTIAL ENVIRONMENTAL EFFECTS	Some ingredients of this mixture are very toxic to aquatic life. Avoid release to the environment.
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3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	CAS No.	Proportion % w/v	Cut off conc. for classification %	Risk phrases
Fipronil	120068-37-3	10	10	R20/21/25/48
Ethanol	64-17-5	10	-	
Non-hazardous	-	80	-	

4. FIRST AID MEASURES

For advice, contact a Poisons Information Centre (phone 131 126 toll-free) or a doctor.

EYE CONTACT:	In case of contact or if eyes become irritated during administration, immediately flush eyes with plenty of water for at least 15 minutes. If ocular irritation persists, seek medical attention.
SKIN CONTACT:	If skin or hair contact occurs, remove contaminated clothing and shoes and flush skin and/or hair with plenty of water for at least 15 minutes. Launder contaminated clothing before reuse. If skin irritation develops and persists or recurs, seek medical attention.
INHALATION:	If inhaled, remove from contaminated area. Apply artificial respiration if not breathing. If lungs become irritated or breathing is difficult during use of the product, move to fresh air and seek medical attention.

INGESTION: If swallowed, do NOT induce vomiting and seek immediate medical attention.

5. FIRE FIGHTING MEASURES

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. Contain contaminated fire-fighting water.

PROTECTION OF FIREFIGHTERS: Fire fighters should wear approved/certified 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.

AUSTRALIA EMERGENCY PROCEDURES: Refer to Initial Emergency Procedure Guide 14

ACCIDENTAL RELEASE MEASURES: For small spills, use protective equipment as prescribed in Section 8. Absorb with liquid-binding material (sand, kitty litter, soil, diatomite, acid binders, universal binders, sawdust). Do not allow to enter drains or sewer. Dispose of contaminated material in sealed and fully labeled 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 release to the environment.

METHODS FOR CLEANING UP: For small spills, soak up with absorbent materials and place in properly labeled containers. Wet area with detergent and water. Soak up, sweep and add to the waste container.

7. HANDLING AND STORAGE

HANDLING: No smoking, eating, or drinking while using this mixture. 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. Ground/bond container and receiving equipment. Use explosion-proof electrical, ventilating, and/or lighting equipment. Use only non-sparking tools.

STORAGE: Store below 30°C (Room Temperature). Store in a well-ventilated place. Keep cool. Store locked up.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION (INDUSTRIAL)

No specific exposure limits have been set by Safe Work Australia. For guidance, note that the following ingredients have exposure limits:

Component	OSHA PEL (TWA)		ACGIH TLV® (TWA)	
	ppm	mg/m ³	ppm	mg/m ³
Fipronil (CAS No.120068-37-3)	-	-	-	-
Ethanol (CAS No. 64-17-5)	1000	1900	1000	-

ENGINEERING CONTROLS: Use local exhaust ventilation to prevent accumulation of vapors.

EYE / FACE PROTECTION: Wear chemical splash goggles when cleaning spilled mixture or if the potential for eye contact exists, wear safety glasses with side shields for normal handling.

SKIN PROTECTION: Wear butyl rubber, neoprene, vinyl or other chemical resistant impervious gloves.

RESPIRATORY PROTECTION: Wear approved/certified respirator when cleaning up spills. For normal use, ensure adequate exhaust ventilation.

GENERAL HYGIENE CONSIDERATIONS: Do not eat, drink, or smoke while using this mixture. Wash hands thoroughly after use.

OTHER: Provide emergency shower and eyewash facility in close proximity to use. Remove contaminated clothing and launder before reuse or discard.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid
Color:	Light amber
Odor:	Alcohol-like
pH:	5.2
Melting/Freezing Point:	No data
Boiling Point:	172°C
Flash Point:	41°C (Closed Cup)
Flammability:	Liquid, flammable
Lower Explosive Limit:	No data

Upper Explosive Limit:	No data
Autoignition Temperature:	190°C
Decomposition Temperature:	No data
Vapor Pressure:	No data
Vapor Density:	No data
Solubility in Water:	Forms milky white precipitate
Specific gravity:	1.02 at 20°C
Viscosity:	<10 cps
Partition Coefficient (n-octanol/Water):	Log K_{ow} -0.54 to 4 (ingredients) (computer generated)
Partition Coefficient (n-octanol/Air):	Log K_{oa} 3.379 to 11.463 (ingredients) (computer generated)
Soil Partition Coefficient:	Log K_{oc} 0.034 to 4.002 (ingredients) (computer generated)

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 mixture may be encountered through skin contact, eye contact or ingestion.
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The following toxicity data are derived from the mixture.

ACUTE ANIMAL TOXICITY DATA for MIXTURE:

Acute Oral (LD₅₀)	2863-2995 mg/kg (rat)
Acute Dermal (LD₅₀)	5000 mg/kg (rat)
Acute Inhalation (LC₅₀)	NE
Ocular Irritant	Non-irritating
Dermal Irritant	Non-irritating
Dermal Sensitizer	Non-sensitizing

NE = Not Established

The following toxicity data are derived from the characteristics of the ingredients of the mixture, and are considered relevant to the final mixture.

CARCINOGENICITY:	Fipronil is classified at a Group C Possible Human Carcinogen based on laboratory animal studies (increased thyroid tumors in male and female rats). Humans and rats have the same of the mechanism of action which produced fipronil-induced thyroid tumors in the rat; however, the rat appears to be more highly sensitive than humans. Therefore, fipronil-induced rat thyroid tumors are not considered suggestive of a human health risk. None of the remaining ingredients in the mixture are considered to be carcinogenic.
MUTAGENICITY:	None of the ingredients in the mixture are considered to be mutagenic.
REPRODUCTIVE EFFECTS:	None of the ingredients in the mixture are considered to be a reproductive toxin.
TERATOGENICITY/ DEVELOPMENTAL EFFECTS:	None of the ingredients in the mixture are considered to be teratogenic or a developmental toxin at the dose rate and frequency stated on the packaging for this mixture.
SPECIFIC TARGET ORGAN TOXICITY – SINGLE EXPOSURE:	Based on the concentration of fipronil in the mixture, the specific target organ toxicity – single exposure classification is a Category 1. Animal studies and human pharmacovigilance reports identify fipronil as a neurotoxicant. Signs and symptoms include: sweating, nausea, vomiting, headache, abdominal pain, dizziness, agitation, weakness and/or tonic-clonic seizures.
SPECIFIC TARGET ORGAN TOXICITY – REPEATED EXPOSURE:	Based on the concentration of fipronil in the mixture, the specific target organ toxicity – repeated exposure classification is a Category 1. Animal studies and human pharmacovigilance reports identify fipronil as a neurotoxicant. Signs and symptoms include: sweating, nausea, vomiting, headache, abdominal pain, dizziness, agitation, weakness and/or tonic-clonic seizures.
INTERACTIONS WITH OTHER CHEMICALS WHICH ENHANCE TOXICITY:	None known

12. ECOLOGICAL INFORMATION

The following toxicity data are derived from the ingredients of the mixture, and are considered relevant to the mixture.

TOXICITY:	LC ₅₀ /EC ₅₀ 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 mixture is considered a Category 1 Acute Aquatic Hazard (GHS standards).
PERSISTENCE AND DEGRADABILITY:	Based upon biodegradation testing, computer modeling and physico-chemical characteristics of the ingredients in the mixture, the mixture is considered inherently biodegradable in the environment.

BIOACCUMULATION POTENTIAL: Based on the K_{ow} of the ingredients in the mixture, some of the ingredients have the potential for bioaccumulation. However, fugacity modeling and biodegradation testing suggest that the potential for bioaccumulation of those ingredients is low. Therefore, it is considered that the mixture will not persist in the environment.

MOBILITY IN SOIL: Based on the K_{oc} of the ingredients in the mixture and fugacity modeling, the mixture is not considered to have a high probability of mobility through the soil.

13. DISPOSAL CONSIDERATIONS

Responsibility for proper waste disposal is with the owner of the waste. Dispose of all waste mixture and containers in accordance with national, regional, state and local regulations.

SPECIAL PRECAUTIONS: As the active ingredient is highly toxic to aquatic organisms, great care is need to ensure that the product does not reach a drain, waterway or unpaved soil.

PREFERRED METHOD OF DISPOSAL: Individual used ampoules / phials may be disposed of by wrapping in absorbent paper and disposal to household garbage. For the disposal of the clean-up materials from a significant spill or leak, negotiate with the EPA responsible for the jurisdiction. Incineration may be permitted by local authority, otherwise secure landfill should be used, if approved by local authority.

14. TRANSPORT INFORMATION

Air Transport ICAO-TI and IATA-DGR:

ICAO/IATA Class:	3
UN/ID Number:	1170
Label:	3
Packing Group:	III
Proper Shipping Name:	Ethanol Solution (Ethyl Alcohol Solution)

Maritime Transport IMDG:

IMDG Class:	3
UN Number:	1170
Label:	3
Packaging Group:	III
EMS Number:	F-E, S-D
Marine Pollutant:	Yes
Proper Shipping Name:	Ethanol Solution (Ethyl Alcohol Solution)

Land Transport ADR/RID: (cross-border)

ADR/RID Class:	3
Danger Code (Kemler):	30
UN Number:	1170
Packaging Group:	III
Proper Shipping Name:	Ethanol Solution (Ethyl Alcohol Solution)

Land Transport ADG7	Class:	3
	UN Number:	1170
	Packaging Group:	III
	Proper Shipping Name:	Ethanol Solution (Ethyl Alcohol Solution)
	Special precautions:	SP144 SP184
	Hazchem Code:	2[Y]
	Labelling:	Transport packaging to comply with ADG Code labelling requirements for Class 3 PG III DG.
	Incompatible stowage:	Do not stow with DG of Class 1, Class 2.3, Class 4.2, Class 5.1, Class 5.2 or Class 7
USDOT Regulations:	Hazard Class:	3
	Identification Number:	1170
	Packing Group:	III
*Merial Ships Under SP9275	Proper Shipping Name:	Ethanol Solution (Ethyl Alcohol Solution) (technical name)

15. REGULATORY INFORMATION

GHS Hazard Phrase:	H226	Flammable liquid and vapor
	H303	May be harmful if swallowed
	H313	May be harmful in contact with skin
	H400	Very toxic to aquatic life with long lasting effects
GHS Precautionary Phrases - Prevention:	P280	Wear protective gloves/protective clothing/eye protection/face protection
GHS Precautionary Phrases - Response:	P313/P316	Call a POISON CENTER or doctor/physician if you feel unwell.
	P303 + P361 + P353	If on skin (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
	P391	Collect spillage.
GHS Precautionary Phrases - Disposal:	P501	Dispose of contents/container to in accordance with local/regional/national/international regulation.

United States:

This mixture is exempt from classification under Environmental Protection Agency (EPA) Superfund Amendments and Reauthorization Act (SARA), Hazardous Substances List or Toxic Substances Control Act (TSCA)

STATE RIGHT-TO-KNOW STATUS:

Component	CA	NJ	PA	MA
Fipronil	Not listed	Not listed	Not Listed	Not listed
Ethanol	listed	Listed	Listed	Listed

CA = California Proposition 65

NJ = New Jersey

PA = Pennsylvania

MA = Massachusetts

Canada:**CANADIAN WHMIS CLASS:**

The ingredients of this mixture have been classified in accordance with the hazard criteria of the CPR.

Australia:

Safe Work Australia: Classified as hazardous (toxic T) according to the criteria of Safe Work Australia

Australian Dangerous Goods Code: Classified as Dangerous Goods of Class 3 FLAMMABLE LIQUID according to Australian Dangerous Goods Code 7.

Poisons Regulation Requirements: Classified as a poison, See SUSDP Schedule 5.

SUSDP CLASSIFICATION - POISONS SCHEDULE: 5

ADG CODE CLASSIFICATION: Class 3 (Flammable liquid) PGIII, UN No.1170 (See also Sections 14-16)

Classification for storage requirements of AS 1940: Observe requirements of Dangerous Goods Storage Regulations and AS1940. As the Closed flash point is between 23 deg.C and 60.5 deg.C, the classification of "Class 3 flammable liquid" may need to be taken into account for compliance with AS 1940.

This product is registered with the Australian Pesticides & Veterinary Medicines Authority.

The APVMA Approval Number for FRONTLINE Top Spot for Cats is 48523.

The APVMA Approval Number for FRONTLINE Top Spot for Dogs is 52327.

Additional national and/or international regulatory information:

Consult Australian Standard AS 1940 for guidance of storage facilities required for DG of Class 3.

16. OTHER INFORMATION

FRONTLINE is a registered trademark of Merial.

Information to enable compliance with GHS requirements, when adopted in Australia, is contained within this document and was based on the Globally Harmonized System of Classification and Labeling of Chemicals (GHS) (a.k.a. Purple Book).

KEY/LEGEND USED: NE = Not Established
NC = Not Classified (study results do not meet the requirements for classification)

LD50 = The median lethal dose where 50% mortality is noted
LC50 = The median lethal concentration (in air or solution) where 50% mortality is noted
CNS = central nervous system
TWA = Time Weighted Average
OSHA PEL = Occupational Safety and Health Association Permissible Exposure Limits
ACGIH TLV = American Conference of Governmental Industrial Hygienists Threshold Limit Values

DISCLAIMER:

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 mixture 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.