SAFETY DATA SHEETS

This SDS packet was issued with item:

078921973

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

078905564 078905565 078905566 078905567 078909084 078909085 078909086 078909087 078921965 078921966 078921968 078921969 078921971 078921972 078921974

The safety data sheets (SDS) in this packet apply to one or more components included in the items listed below. Items listed below may require one or more SDS. Please refer to invoice for specific item number(s).

078909088 078921975

SAFETY DATA SHEET

Version Date: 03 June 2012
Supersedes: None

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Fipronil/Cyphenothrin/S-methoprene Spot-On Solution for Dogs and Puppies

Trade Name(s): FRONTLINE TRITAK For Dogs

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, pyrethroid, terpenoid
Chemical Name: Mixture - NA
Synonyms: NA
Formula: None
Product Use: Fipronil/Cyphenothrin/S-methoprene Spot-On Solution is used in veterinary medicine for the treatment and prevention/control of fleas, ticks, mosquitoes, and biting lice infestation on dogs and puppies.

COMPANY ADDRESS

Merial Limited
3239 Satellite Boulevard
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. HAZARDS IDENTIFICATION

Danger!

Emergency Overview

Harmful if swallowed. May be harmful in contact with skin. Causes mild skin irritation. Causes eye irritation. 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):
HARMFUL IN CONTACT WITH SKIN (R21)
IRRITATING TO EYES (R36)
IRRITATING TO SKIN (R38)
DANGER OF SERIOUS DAMAGE TO HEALTH BY PROLONGED EXPOSURE (R48)

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TOXIC IF SWALLOWED (R25)
VERY TOXIC TO AQUATIC ORGANISMS (R50)

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)
AVOID CONTACT WITH SKIN (S24)
AFTER CONTACT WITH SKIN, WASH IMMEDIATELY WITH PLENTY OF WATER (S28)
AVOID CONTACT WITH EYES (S25)
IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF WATER AND SEEK MEDICAL ADVICE (S26)
IF SWALLOWED, SEEK MEDICAL ADVICE IMMEDIATELY AND SHOW THE CONTAINER OR LABEL (S46)
AVOID RELEASE TO THE ENVIRONMENT (S60)

Health Hazard (GHS Classification)	**Category**	**Pictogram**	**Signal Word**	**Hazard Statement**
Acute Oral Toxicity	4		Warning	Harmful if swallowed (H302)
Acute Dermal Toxicity	5	No Symbol	Warning	May be harmful in contact with skin (H313)
Dermal Irritation	3	No Symbol	Warning	Causes mild skin irritation (H316)
Ocular Irritation	2B	No Symbol	Warning	Causes eye irritation (H320)
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)

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

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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 irritating to the eyes.
SKIN:	The mixture produces mild skin irritation. The mixture is not anticipated to produce skin 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.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredients	CAS No.	% W / V
Fipronil	120068-37-3	5-10
Cyphenothrin	39515-40-7	5-10
S-methoprene	65733-16-6	5-10
Non Hazardous Substances		70-85

4. FIRST AID MEASURES

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. Administer artificial respiration if not breathing. If lungs become irritated or breathing

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	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.

For small spills, use 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:	Do not touch or walk through spilled material. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. 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.

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:	Do not smoke. This product is not flammable therefore no special precautions are needed.
STORAGE:	Store in a well-ventilated place. Keep cool. Store locked up.

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8. EXPOSURE CONTROLS / PERSONAL PROTECTION (INDUSTRIAL)

The following ingredient(s) has exposure limits.

Component	OSHA PEL (TWA) ppm	OSHA PEL (TWA) mg/m^3	ACGIH TLV® (TWA) ppm	ACGIH TLV® (TWA) mg/m^3
Fipronil (CAS No.120068-37-3)	-	-	-	-
Cyphenothrin (CAS No. 39515-40-7)	-	-	-	-
S-methoprene (CAS No. 65733-16-6)	-	-	-	-

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.

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9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid, clear
Color:	Yellow
Odor:	Faint fruity
pH:	No data
Melting/Freezing Point:	No data
Boiling Point:	No data
Flash Point:	>93.33 °C (> 200 °F)
Flammability:	No data
Lower Explosive Limit:	No data
Upper Explosive Limit:	No data
Autoignition Temperature:	No data
Decomposition Temperature:	No data
Vapor Pressure:	No data
Vapor Density:	No data
Solubility in Water:	Not soluble
Specific gravity:	1.02 -1.06 g/cc
Viscosity:	5-10 cps

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Partition Coefficient (n-octanol/Water): No data
Partition Coefficient (n-octanol/Air): No data
Soil Partition Coefficient: No data

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.

ACUTE TOXICITY DATA: *The following toxicity data are derived from the ingredients of the mixture, and are considered relevant to the final mixture.*

Parameter	Result	Comments
Acute Oral (LD_{50})	ATE ~760 mg/kg	Classification of mixture on the basis of information/data on ingredients
Acute Dermal (LD_{50})	ATE >5000 mg/kg	Classification of mixture on the basis of information/data on ingredients
Acute Inhalation (LC_{50})	NE	
Ocular Irritant	Yes (Category 2B; GHS)	Classification of mixture on the basis of information/data on ingredients
Dermal Irritant	Yes (Category 2A; GHS)	Classification of mixture on the basis of information/data on ingredients
Dermal Sensitizer	Non-sensitizing	Classification of mixture on the basis of information/data on ingredients

NE = Not Established, ATE = Acute Toxicity Estimate

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The following toxicity data are derived from 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 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 reproductive toxins.
TERATOGENICITY/ DEVELOPMENTAL EFFECTS:	None of the ingredients in the mixture are considered to be teratogenic or developmental toxins under normal use conditions.
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

13. ECOLOGICAL INFORMATION

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

TOXICITY:	Fipronil, cyphenothrin and S-methoprene are considered toxic to highly toxic to aquatic organisms. The 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.

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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:	9 Miscellaneous dangerous substances and articles
	UN/ID Number:	3082
	Label:	-
	Packing Group:	III
	Proper Shipping Name:	Environmentally hazardous substance, liquid, n.o.s. (Fipronil, Cyphenothrin and Permethrin)
Maritime Transport IMDG:	IMDG Class:	9 Miscellaneous dangerous substances and articles
	UN Number:	3082
	Label:	-
	Packaging Group:	III
	EMS Number:	-
	Marine Pollutant:	Yes
	Proper Shipping Name:	Environmentally hazardous substance, liquid, n.o.s. (Fipronil, Cyphenothrin and Permethrin)

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Land Transport ADR/RID: (cross-border)	ADR/RID Class:	9
	Danger Code (Kemler):	-
	UN Number:	3082
	Packaging Group:	III
	Proper Shipping Name:	Environmentally hazardous substance, liquid, n.o.s. (Fipronil, Cyphenothrin and Permethrin)
USDOT Regulations:	Hazard Class:	Not Regulated
	Identification Number:	-
	Packing Group:	-
	Proper Shipping Name: (technical name)	-

15. REGULATORY INFORMATION

GHS Hazard Phrase:	H302	Harmful if swallowed
	H313	May be harmful in contact with skin
	H316	Causes mild skin irritation
	H320	Causes eye irritation
	H370	Causes damage to organs (CNS)
	H372	Causes damage to organs (CNS) through prolonged or repeated exposure
	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 P313 + P312	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)

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STATE RIGHT-TO-KNOW STATUS:

Component	CA	NJ	PA	MA
Fipronil	Not listed	Not listed	Not listed	Not listed
Cyphenothrin	Not listed	Not listed	Not listed	Not listed
S-methoprene	Not listed	Not listed	Not listed	Not listed

CA = California Proposition 65 NJ = New Jersey
PA = Pennsylvania MA = Massachusetts

Canada:

This mixture is exempt from classification under WHMIS Requirements of the *Hazardous Products Act* and Controlled Products Regulations.

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16. OTHER INFORMATION

FRONTLINE is a registered trademark of Merial.

Information contained within this document 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
ATE = Acute Toxicity Estimate
TE = Toxicity Estimate
LD50 = The median lethal dose where 50% mortality is noted
LC50 = The median lethal concentration (in air or solution) where 50% mortality is noted
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

REVISION: None

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.

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