

MATERIAL SAFETY DATA SHEET



FRONTLINE® Plus for Dogs

Version 3a
Issue Date: 19 May 2014
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SECTION 1 IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Recommended use: Treatment and prevention of flea infestation, and control of brown dog ticks, paralysis ticks and biting lice on dogs and puppies

Supplier name: Merial Australia Pty Ltd
Address: Building D, 12-24 Talavera Road
Macquarie Park NSW 2113
Telephone number (toll-free): 1800 808 691
All hours emergency phone number - Poisons Information Centre 131126 anywhere in Australia

SECTION 2 HAZARDS IDENTIFICATION

Classified as hazardous according to the National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008(1999)].

Classified as Dangerous Goods according to the ADG Code (Class 3 PG III - flammable liquid).

Risk phrase(s) (Hazard): FLAMMABLE (R10)
HARMFUL BY INHALATION AND IN CONTACT WITH SKIN AND IF SWALLOWED (R20/21/22)
IRRITATING TO EYES (R36)

Safety phrase(s):
(Precautionary statements) 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)

APPROVED CRITERIA:CLASSIFICATION: HARMFUL Xn

SUSDP CLASSIFICATION -

POISONS SCHEDULE: 5

ADG CODE CLASSIFICATION: Class 3 (Flammable liquid)

UN No. 1170 (See also Sections 14-16)

LOCAL EFFECTS OF PRODUCT:

TARGET ORGANS:

INHALATION: Harmful if vapour or spray is inhaled. May cause irritation to nose, throat and respiratory tract, lethargy or dizziness.

SKIN CONTACT: May cause irritation.

EYE CONTACT: Irritant. May cause burning, redness and swelling.

INGESTION: Harmful. May cause nausea, vomiting, abdominal pain,

CARCINOGEN STATUS: Not classified by NOHSC, NTP or IARC

SECTION 3 COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	CAS No.	Content %	Classification	Risk phrase
Fipronil Technical	120068-37-3	10	Harmful Xn	R 20/21-36
Methoprene	40596-69-8	9	Not classified	-
Ethanol	64-17-5	7.9	Flammable	R 10
Non-hazardous ingredients	Confidential	~10	Not classified	-
Glycol ether		to 100	Not classified	-



SECTION 4 FIRST AID MEASURES

ADVICE:	For advice, contact a Poisons Information Centre (Phone 131 126 anywhere in Australia), or call a doctor at once.
INHALATION:	If vapour or mist inhaled, remove from contaminated area. If adverse effects occur, contact a doctor and show this MSDS.
SKIN CONTACT:	If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water.
EYE CONTACT:	If in eyes, hold eyelids apart and flush the eye continuously with running water. Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.
INGESTION:	If swallowed urgent hospital treatment is likely to be needed. Follow instruction of Poisons Information Centre.
Notes to physician:	The active ingredient Fipronil, is a phenylpyrazole that disrupts normal nerve function by blocking GABA-gated chloride channels. The action is selectively toxic to insects. Methoprene is of low toxicity with an NOEL rat is 250 mg/kg/day.

SECTION 5 FIRE FIGHTING MEASURES

FIRE AND EXPLOSION HAZARDS:	Flammable.
EXTINGUISHING MEDIA:	Water spray/fog, dry chemical, CO2 or alcohol-resistant foam.
FIRE FIGHTING:	
Special advice in case of fire:	Emergency workers should wear full protective equipment and supplied-air breathing apparatus. Toxic or irritant gases, vapours or particulates may be generated in a fire. Spray water on containers to cool. Contain contaminated fire-fighting water.
Hazardous products of combustion:	Oxides of carbon and nitrogen, various organic substances.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Emergency procedures.	Initial Emergency response Guide: 14
If spill or leak is of significant quantity, move non-essential persons away. Remove any sources of ignition from area. Seal leak if safe to do so. Remove leaking packages to space with good ventilation of area and place in over-bin. Contain spill with absorbent material such as dry sand or kitty litter. Do not allow to enter drains or sewer. Sweep up used absorbent and pack in properly labelled container for disposal. Wet down contaminated area with water, cover with absorbent and sweep up and place in labelled container. Consult waste authority regarding disposal.	
OCCUPATIONAL RELEASE:	As for accidental release. Wear impervious gloves, eye protection and half-face respirator with organic vapour element, to deal with a large spill or leak.

SECTION 7 HANDLING AND STORAGE

SAFETY DIRECTIONS:	Will irritate the eyes and skin. Avoid contact with eyes and skin. Wash hands after use. Keep away from foodstuffs and beverages. Do not eat, drink or smoke when using the product. Do not inhale vapours or mists.
HANDLING AND STORAGE	Classified as Dangerous Goods of Class 3 PG III according to the Australian Dangerous goods Code 6 th edition. Surface transport must comply with the ADG Code. Special storage conditions may apply to a site if more than 1000 L of the liquid is stored. Store and stow away from oxidising agents. Do not store with food. Store in original container below 30°C away from oxidising agents.
Ventilation:	Store significant quantities where there is good natural ventilation.
Sources of ignition:	Store away from sources of ignition such as power points, switches, motors, naked flames and spark-producing equipment.

**SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION**

No ingredients that require workplace atmosphere monitoring have been identified by the manufacturer.

EXPOSURE LIMITS: NOHSC TWA = 1880 mg/m³ for ethanol
NOHSC STEL= None established

No exposure limits have been established for toxic ingredients such as the active ingredient.

The Time Weighted Average (TWA) is the concentration of the substance in the worker's breathing zone, exposure to which over 8-hour days, 5-day weeks over a working lifetime, should not cause any undue discomfort or health impairment to nearly all workers. The Short Term Exposure Limit (STEL), means a 15 minute TWA exposure which should not be exceeded and should not be repeated within 60 minutes or more than four times per day.

Exposure Controls / Industrial hygiene:

VENTILATION: Not required where there is good natural ventilation.
RESPIRATOR: Not required for normal handling.
EYE PROTECTION: Not required for normal use. Avoid contact with eyes.
Wear eye protection if there is likelihood of splashing.
SKIN PROTECTION: Not required for normal use, however, if used frequently or animals on which the product has been used are handled frequently, wear impervious gloves.

Personal Protective Equipment

EYE PROTECTION: If required as outlined above or if cleaning-up a large spill or leak, use chemical goggles complying with AS 1337 / 1337.
SKIN PROTECTION: If required as outlined above or if cleaning-up a large spill or leak, wear impervious gloves such as PVC coated cotton gloves complying with AS/NZS 2161.2.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance Slightly viscous amber liquid.
Odour. Alcoholic
pH. Not relevant
Boiling point/range. 78 ° C (ethanol)
Freezing Point Not determined
Melting point Not determined
Solubility in water Soluble in all proportions
pH 5.2
Specific gravity or density. 1.020 g/cc
Flash point 36 deg.C.
Upper explosive limits in air 19 %
Lower explosive limit 4.3 %
Auto-ignition temperature. 190 deg.C (estimate)
Particle size. Not relevant
Volatile organic compounds. ~8 %
Viscosity. 9.73 mm²/s
Octanol/water partition coefficient. Not determined
Reactivity Not an oxidising agent.
Burning characteristics. Flammable
Incompatible materials. Strong oxidizing agents or peroxide formers.

SECTION 10 STABILITY & REACTIVITY

Thermal decomposition: Not expected at normal temperatures.
Dangerous reactions: None known.
REACTIVITY: Stable but readily oxidised by oxidising agents such as pool and spa chlorine, permanganates, chlorates and may catch fire in contact with them.
CONDITIONS TO AVOID: Contact with any oxidising agent, strong acids and strong alkali.
Incompatible with oxidising agents.
HAZARDOUS DECOMPOSITION: No significant decomposition expected at normal temperatures.
POLYMERISATION: No hazardous polymerisation will occur.



SECTION 11 TOXICOLOGICAL INFORMATION

Does not contain heavy metals or halogenated compounds.

Health effects from the likely routes of exposure

LD50 acute oral rat:	750 mg/kg
LD50 acute dermal rat:	5000 mg/kg
Skin irritation (rabbit):	Mild skin irritant
Eye irritation (rabbit):	Eye irritant
Sensitisation (guinea pig):	Not a sensitising agent
Genotoxicity	Not available

LOCAL EFFECTS OF PRODUCT: Irritant to eyes and skin.

TARGET ORGANS: Eyes, Skin, CNS.

HAZARDOUS INGREDIENTS: Fipronil R-PHRASE 20/21-36
HARMFUL BY INHALATION AND IN CONTACT WITH SKIN

MUTAGENICITY DATA: Not available

Subacute to chronic toxicity: There are no data on the reproductive effects of this mixture. One component of this product produced slight adverse reproductive effects at 2.5% in drinking water. For Fipronil, the No Effect Level (NOEL) for adverse reproductive effects in rats was approximately 2.5 mg/kg-day, with higher doses causing adverse effects. Ethanol is a known reproductive toxin, with overexposure to bulk volumes during pregnancy associated with numerous adverse effects on the foetus. Acute and chronic overexposure to bulk volumes of Technical Fipronil produced adverse neurological effects in animals (rabbits), including changes in neuromuscular endpoints and seizures.

Additional toxicological information: Symptoms of respiratory depression or central nervous system depression (fatigue, lethargy or dizziness) may occur if exposed to bulk volumes of ingredients.

SECTION 12 ECOLOGICAL INFORMATION

The following Information applies to the Fipronil active ingredient, not the product:

Environmental fate:	Not available
Biological elimination:	Not available
Bioaccumulation potential:	Not available
Mobility:	Not available
TOXICITY TO FISH:	Rainbow Trout LC50 0.25 mg/L/24hr - poisonous to fish.
TOXICITY TO DAPHNIA:	190g/L EC50 48 hr (<i>D. magna</i>)
TOXICITY TO ALGA:	Not available
TOXICITY TO BACTERIA:	IC50 (respiration) Not available
READY BIODEGRADABILITY:	Not available

The following Information is on the Methoprene active ingredient, not the product:

TOXICITY TO DAPHNIA: 360g/L EC50 48 hr (*D. magna*)

SECTION 13 DISPOSAL CONSIDERATIONS

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. Individual used pipettes 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, consult waste authority.



SECTION 14 TRANSPORT INFORMATION

Surface transport:

UN Number	1170
UN Proper Shipping Name	Ethanol Solution
Class and subsidiary risk	3 (no sub-risk)
Packing Group	III
Special precautions for user	SP144 SP184
Hazchem Code	2[Y]
Labelling:	Transport packaging to comply with ADG Code labelling requirements for Class 3 PG III DG.
Transport as :	DG of Class 3 PG III
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

Maritime transport:

UN Number	1170
UN Proper Shipping Name	Ethanol Solution
Page:	3337-1
Class and subsidiary risk	3.3 (no sub-risk)
Packing Group	III
EMS NO.	F-E, S-D
MFAG:	305

Air transport ICAO-TI and IATA-DGR:

UN Number	1170
UN Proper Shipping Name	Ethanol Solution
Class and subsidiary risk	3 (no sub-risk)
Packing Group	III

SECTION 15 REGULATORY INFORMATION

This product is registered with the Australian Pesticides & Veterinary Medicines Authority; APVMA Approval Number: 54523.

Consult Australian Standard AS1940 for guidance regarding storage facilities for DG of Class 3.

SECTION 16 OTHER INFORMATION

Classification for storage requirements of AS 1940.

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.

Do not allow product to reach ground water, water course or sewage system. Poisonous to fish and plankton.



ACRONYMS USED IN THIS MSDS

SUSDP	Standard for the Uniform scheduling of Drugs and Poisons
ADG Code	Australian Dangerous Goods (DG) Code
CAS No.	Chemical Abstracts number
UN No.	United Nations identifying number for DG
R-phrases	Risk phrases identifying main hazard of ingredient or product
S-phrases	Safety phrases identifying main safety measures to be used
NOHSC	National Occupational; Health and Safety Commission
NTP	National Toxicology Programme (USA)
IARC	International Agency for Research on Cancer
AICS	Australian Inventory of Chemical Substances
HAZCHEM	Code for information for emergency services

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SUPPLIER STATEMENT: The product should be stored, handled and used in accordance with good industrial hygiene practices and in conformity with legal regulations.. The information in this MSDS is based on the level of knowledge at the time of preparation and relates to the product in the state in which it is supplied. The information describes the product from the safety point of view and is not intended to guarantee any particular properties and shall not establish a legally valid contractual relationship.