

Section 1 - Identification of Chemical Product and Company

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Substance: Prometryn is a 1,3,5-triazine derivative; fluometuron is a urea derivative.
Trade Name: Farnoz Promo-Mix Residual Herbicide
Product Use: Agricultural herbicide for use as described on the product label.
Creation Date: July, 2002
Revision Date: June, 2004

Section 2 - Hazards Identification

Statement of Hazardous Nature

This product is classified as: Not classified as hazardous according to the criteria of NOHSC Australia.

Not a Dangerous Good according to the Australian Dangerous Goods (ADG) Code.

Risk Phrases: Not Hazardous - No criteria found.

Safety Phrases: Not Hazardous - No criteria found.

SUSDP Classification: S5

ADG Classification: None allocated. Not a Dangerous Good.

UN Number: None allocated

Emergency Overview

Physical Description & colour: White to beige coloured viscous liquid.

Odour: Mild odour.

Major Health Hazards: The triazines are generally well-absorbed by the mammalian gut, and probably across the skin. While the breakdown of prometryn is not adequately understood, available data indicate that, in rats, most of the herbicide is excreted in urine and faeces within 48 hours of administration. No detectable residues of prometryn or its metabolites were found in the muscle, fat, blood, liver, kidney, and other organs of sheep and cattle fed up to 100 ppm for 4 weeks. However, prometryn or its breakdown products were found in whole milk samples taken from cows that were fed up to 100 ppm in their diet for 21 days.

Fluometuron is practically nontoxic by ingestion with a reported oral LD₅₀ of 6416 to 8900 mg/kg in rats.

Potential Health Effects

See section 11 for Chronic exposure studies.

Inhalation

Short term exposure: Available data indicates that this product is not harmful. However, this product is unlikely to cause any discomfort or irritation.

Skin Contact:

Short term exposure: Available data indicates that this product is not harmful. It should present no hazards in normal use. In addition, this product may be irritating, but is unlikely to cause anything more than mild transient discomfort.

Eye Contact:

Short term exposure: Available data shows that this product is not harmful. In addition, this product may be irritating to eyes, but is unlikely to cause anything more than mild transient discomfort.

Ingestion:

Short term exposure: Available data shows that this product is not harmful. This product is unlikely to cause any irritation problems in the short or long term.

Carcinogen Status:

NOHSC: No significant ingredient is classified as carcinogenic by NOHSC.

NTP: No significant ingredient is classified as carcinogenic by NTP.

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IARC: Fluometuron is Class 3 - unclassifiable as to carcinogenicity to humans.

Other Non Hazardous Ingredients is Class 3 - unclassifiable as to carcinogenicity to humans.

Section 3 – Composition/Information on Ingredients

Ingredients	CAS No	Conc,%	TWA (mg/m ³)	STEL (mg/m ³)
Prometryn	7287-19-6	25	not set	not set
Fluometuron	2164-17-2	25	not set	not set
Other non hazardous ingredients	secret	to 100	not set	not set

This is a commercial product whose exact ratio of components may vary slightly. Minor quantities of other non hazardous ingredients are also possible.

The TWA exposure value is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week. The STEL (Short Term Exposure Limit) is an exposure value that should not be exceeded for more than 15 minutes and should not be repeated for more than 4 times per day. There should be at least 60 minutes between successive exposures at the STEL. The term "peak" is used when the TWA limit, because of the rapid action of the substance, should never be exceeded, even briefly.

Section 4 - First Aid Measures

General Information:

You should call The Poisons Information Centre if you feel that you may have been poisoned, burned or irritated by this product. The number is 13 1126 from anywhere in Australia and is available at all times. Have this MSDS with you when you call.

Inhalation: First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

Skin Contact: Irritation is unlikely. However, if irritation does occur, flush with lukewarm, gently flowing water for 5 minutes or until chemical is removed.

Eye Contact: No effects expected. If irritation does occur, flush contaminated eye(s) with lukewarm, gently flowing water for 5 minutes or until the product is removed.

Ingestion: First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

Section 5 – Fire Fighting Measures

Fire and Explosion Hazards: There is no risk of an explosion from this product under normal circumstances if it is involved in a fire.

Fire decomposition products from this product may be toxic if inhaled. Take appropriate protective measures.

This product is likely to decompose only after heating to dryness, followed by further strong heating.

Extinguishing Media: Preferred extinguishing media are carbon dioxide, dry chemical, foam, water fog.

Fire Fighting:

Flash point: Will not burn until water component is driven off.

Upper Flammability Limit: Does not burn.

Lower Flammability Limit: Does not burn.

Autoignition temperature: Does not burn.

Flammability Class: Does not burn.

Section 6 – Accidental Release Measures

Accidental release: In the event of a major spill, prevent spillage from entering drains or water courses. As a minimum, wear overalls, goggles and gloves. Suitable materials for protective clothing include rubber, PVC. Stop leak if safe to do so, and contain spill. Absorb onto sand, vermiculite or other suitable absorbent material. If spill is too large or if absorbent material is not available, try to create a dike to stop material spreading or going into drains or waterways. Avoid using sawdust or other combustible material. Sweep up and shovel or collect recoverable product into labelled containers for recycling or salvage, and dispose of promptly. After spills, wash area preventing runoff from entering drains. If a significant quantity of material enters drains, advise emergency services. Full details regarding disposal of used containers, spillage and unused material may be found on the label. If there is any conflict between this MSDS and the label, instructions on the label prevail. Ensure legality of disposal by consulting regulations prior to disposal. Thoroughly launder protective clothing before storage or re-use. Advise laundry of nature of contamination when sending contaminated clothing to laundry.

Section 7 – Handling and Storage

Handling: Keep exposure to this product to a minimum, and minimise the quantities kept in work areas. Check Section 8 of this MSDS for details of personal protective measures, and make sure that those measures are followed. The measures detailed below under "Storage" should be followed during handling in order to minimise risks to

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coma, convulsions, and death. Death results from respiratory arrest. Hydrogen cyanide gas acts very rapidly; symptoms and death can both occur quickly.

Polymerisation: This product is unlikely to undergo polymerisation processes.

Section 11 – Toxicological Information

Toxicity: Acute toxicity: Prometryn is slightly to practically non-toxic by ingestion, with reported oral LD₅₀ values of 3750 to 5235 mg/kg in rats, 3750 mg/kg in mice, and greater than 2020 mg/kg in rabbits. Via the dermal route, it is slightly toxic with reported dermal LD₅₀ values of greater than 2000 mg/kg to greater than 3100 mg/kg in rabbits.

Technical prometryn does not cause skin irritation in rabbits or skin sensitization in guinea pigs, and may cause slight eye irritation in rabbits. Some formulations may be mild eye irritants and/or slight skin irritants in rabbits. The 4-hour LC₅₀ for prometryn in rats is 5.2 mg/L. Symptoms of high acute exposure may include sedation, muscle incoordination, breathing difficulty, bulging eyes, constricted pupils, diarrhea, excessive urination, and convulsions.

Chronic toxicity: The results of long-term feeding studies do not indicate obvious, nor severe, toxicity from prometryn exposure. Rats fed dietary doses of 37.5 mg/kg/day and dogs given 4 mg/kg/day over a 2-year period didn't show observable gross or microscopic signs of systemic toxicity. Effects which occurred at higher dose rates in these animals included changes in relative weights of the kidney and liver.

Reproductive effects: In a three-generation study, no reproductive effects were seen in rats fed up to 5 mg/kg/day. In another study, reduced offspring body weights, but no other reproductive effects, were seen in rats at doses of up to 75 mg/kg/day. From the data, it appears that prometryn is unlikely to cause reproductive effects.

Teratogenic effects: No teratogenic effects were seen in the offspring of rats fed 250 mg/kg/day, the highest dose tested. In another study, no teratogenic effects were seen in rats at doses of 50 mg/kg/day. No teratogenic or developmental effects were seen in rabbits at doses of 72 mg/kg/day. Prometryn does not appear to cause birth defects.

Mutagenic effects: Eleven different tests for mutagenicity involving hamsters, bacteria, or mammalian cell cultures have all produced negative results, indicating that prometryn is not a mutagen.

Carcinogenic effects: Prometryn was not carcinogenic in a 2-year rat feeding study at doses of up to 62.5 mg/kg/day. Carcinogenic effects were not seen in mice at doses of up to 300 mg/kg/day over 18 months. The available data suggest that prometryn is not carcinogenic.

Organ toxicity: Target organs identified through animal studies include the liver, kidneys, and bone marrow.

Fate in humans and animals: Fluometuron is absorbed only slowly into the body from the gastrointestinal tract. At 72 hours after rats were given oral doses of 50 mg/kg fluometuron, 15% of the dose was excreted in the urine and 49% was excreted unchanged in the faeces. At the same time, fluometuron or its metabolites were detected in the rats' livers, kidneys, adrenal gland, pituitary gland, red blood cells, blood plasma, and spleen, with the highest concentration found in red-blood cells.

Section 12 – Ecological Information

This product is biodegradable. It will not accumulate in the soil or water or cause long term problems.

Effects on birds: Prometryn is practically nontoxic to birds; the acute oral LD₅₀ values in bobwhite quail and mallard ducks are greater than 2150 mg/kg and greater than 4640 mg/kg, respectively. The reported 5- to 7-day dietary LC₅₀ values are greater than 10,000 ppm for these same species.

Effects on aquatic organisms: Prometryn is moderately toxic to fish, with reported 96-hour LC₅₀ values of 2.5 to 2.9 mg/L in rainbow trout, 10.0 mg/L in bluegill sunfish, 3.5 mg/L in goldfish, and 8 mg/L in carp. It is highly toxic to guppies. It is slightly toxic to freshwater invertebrates. A 19% decrease in shell growth was observed in oysters exposed to 1.0 mg/L of the herbicide for 48 hours. Pink shrimp were unaffected by exposure to 1.0 mg/L of the herbicide for 48-hours. However, the compound has a 48-hour LC₅₀ in the invertebrate Daphnia of 18.9 mg/L. The observed concentration of prometryn in bluegill and in rainbow trout is 9 to 10 times the ambient water concentration, indicating a low potential for bioaccumulation.

Effects on other organisms: Prometryn is nontoxic to bees and earthworms, with a reported contact LD₅₀ of greater than 99 µg/bee, and a 48-hour LC₅₀ of 153 mg/kg in earthworms.

Environmental Fate:

Breakdown in soil and groundwater: Prometryn is moderately persistent in the soil, with a field half-life of 1 to 3 months. It will persist longer under dry or cold conditions, which are not conducive to chemical or biological activity. Following multiple annual applications of the herbicide, prometryn activity can persist for 12 to 18 months after the last application. Soil microorganisms readily break down prometryn in the soil. The amount of the herbicide evaporating from soil increases with temperature and soil moisture content, but volatilization is not significant under most field conditions. Prometryn is weakly bound to most soils, and is slightly soluble in water. It may thus be mobile in some soils. However, it adsorbs more strongly to soils with higher proportions of clay and organic matter. Field leaching studies indicate that prometryn stays in the top 12 inches of treated soil.

Fluometuron is moderately to highly persistent in the soil environment, with a reported field half-life of 12 to 171 days.

Breakdown in water: No significant hydrolysis, or breakdown in water, was found when prometryn was tested over a period of 28 days in water ranging from slightly acidic to slightly alkaline and over a variety of test temperatures.

These data indicate that prometryn is potentially persistent in the water environment.

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Fluometuron may be highly persistent in the water environment. The half-life of fluometuron in water is 110 to 144 weeks.

Breakdown in vegetation: Prometryn is rapidly absorbed through both the foliage and roots of plants, and is translocated to the growing shoots. Removal or degradation by the plant is rapid in non-susceptible plants, but very slow in susceptible species.

Section 13 – Disposal Considerations

Disposal: Instructions concerning the disposal of this product and its containers are given on the product label. These should be carefully followed.

Section 14 – Transport Information

ADG Code: This product is not classified as a Dangerous Good. No special transport conditions are necessary unless required by other regulations.

Section 15 – Regulatory Information

AICS: All of the significant ingredients in this formulation are to be found in the public AICS Database.

Section 16 – Other Information

Much of the Information in this MSDS came from Extoxnet, a Pesticide Information Project of Cooperative Extension Offices of Cornell University, Oregon State University, the University of Idaho, and the University of California at Davis and the Institute for Environmental Toxicology, Michigan State University.

This MSDS contains only safety-related information. For other data see product literature.

Acronyms:

ADG Code	Australian Code for the Transport of Dangerous Goods by Road and Rail
AICS	Australian Inventory of Chemical Substances
CAS number	Chemical Abstracts Service Registry Number
Hazchem Number	Emergency action code of numbers and letters that provide information to emergency services especially firefighters
IARC	International Agency for Research on Cancer
NOHSC	National Occupational Health and Safety Commission
NOS	Not otherwise specified
NTP	National Toxicology Program (USA)
R-Phrase	Risk Phrase
SUSDP	Standard for the Uniform Scheduling of Drugs & Poisons
UN Number	United Nations Number

Contact Points:

Call Farnoz on (02)9431 7800

Fax: (02)9431 7700 and ask for the technical manager.

Police and Fire Brigade:

Dial 000

Emergency contact:

1800 024 973 (24 hours)

If ineffective:

**Dial Poisons Information Centre
(13 1126 from anywhere in Australia)**

The information contained in this Material Safety Data Sheet is provided in good faith and is believed to be correct at the date hereof. However, it is expected that individuals receiving the information will exercise their independent judgement in determining its appropriateness for a particular purpose. Farnoz Pty Ltd makes no representation as to the accuracy or comprehensiveness of the information and to the full extent allowed by law excludes all liability whatsoever, whether with respect to negligence or otherwise, for any loss or damage arising from or connection with the supply or use of the information in this Material Safety Data Sheet.

Please read all labels carefully before using product.

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