

Section 1 - Identification of Chemical Product and Company

Statement of Hazardous Nature

This product is classified as: Hazardous according to the criteria of NOHSC Australia.

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

Farmoz Pty Ltd , Suite 1, Level 4, Building B 207 Pacific Highway, St Leonards, NSW 2068 ACN 050 328 973	Telephone (02)9431 7800 (24 hours) Fax (02)9431 7700
---	---

Substance: Linuron is a urea derivative.
Trade Name: Farmoz Linurex Flowable Selective Herbicide
Product Use: Agricultural herbicide for use as described on the product label.
Creation Date: July, 2002
Revision Date: November, 2003

Section 2 – Composition/Information on Ingredients

Ingredients	CAS No	Conc, %	TWA (mg/m ³)	STEL (mg/m ³)
Linuron	330-55-2	45	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 3 - Hazards Identification

Risk Phrases: R40. Possible risk of irreversible effects.

Safety Phrases: S2, S45. Keep out of reach of children. In case of accident or if you feel unwell, contact a doctor or Poisons Information Centre immediately (show the label where possible).

SUSDP Classification: None allocated.

ADG Classification: None allocated. Not a Dangerous Good.

UN Number: None allocated

Emergency Overview

Physical Description & colour: White viscous liquid.

Odour: Mild odour.

Major Health Hazards: Linuron is of slight toxicity by ingestion, with reported oral LD₅₀ values of 1200 to 1500 mg/kg in rats, and 2250 mg/kg in rabbits. The reported dermal LD₅₀ in rabbits is greater than 5000 mg/kg. It has been reported to be a skin sensitizer in guinea pigs, and an eye irritant in rabbits, but not a skin irritant in rabbits.

Potential Health Effects

See section 11 for Chronic exposure studies.

Inhalation

Short term exposure: Available data indicates that this product is not harmful. In addition, 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.

MATERIAL SAFETY DATA SHEET

Ingestion:

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

Carcinogen Status:

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

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

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

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 persons using the product in the workplace. Also, avoid contact or contamination of product with incompatible materials listed in Section 10.

Storage: Store packages of this product in a cool place. Make sure that the product does not come into contact with substances listed under "Materials to avoid" in Section 10. Some liquid preparations settle or separate on standing and may require stirring before use. Check packaging - there may be further storage instructions on the label.

This revision issued: November, 2003

Chronic toxicity: Skin sensitization was seen in guinea pigs repeatedly exposed. Alterations in red blood cells were seen in rats given 2.75 mg/kg/day over 2 years. Anemia was seen in dogs at doses above 6.25 mg/kg/day.

Reproductive effects: In a three-generation study, no reproductive effects were observed at doses of 12.5 mg/kg/day. These data suggest that reproductive effects are unlikely in humans at expected exposure levels.

Teratogenic effects: Pregnant rabbits fed high doses of Linuron during the sensitive period of pregnancy had normal offspring at doses of up to 25 mg/kg/day, even though maternal weight gain was reduced. In rats, doses of 6.25 mg/kg/day did not produce teratogenic effects. These data suggest that Linuron is not likely to cause birth defects.

Mutagenic effects: Linuron caused mutations in one microbial assay. But in several other mutagenicity and genotoxicity assays, including the Ames assay, E. coli culture assay, Chinese hamster ovary cell culture assay, and whole animal studies, Linuron showed no mutagenic or genotoxic activity. Thus, it appears that Linuron is either nonmutagenic or slightly mutagenic.

Carcinogenic effects: Several animal studies of mice, rats, and dogs have shown that it produces nonmalignant liver and testicular tumors. In these studies, doses of 72.5 mg/kg/day in rats caused testicular adenomas and 180 mg/kg/day in mice caused hepatocellular adenoma. These data are not sufficient to determine Linuron's carcinogenicity to humans.

Organ toxicity: Rats and dogs fed Linuron for 2 years had detectable residues of Linuron in their blood, fat, kidney, and spleen, but these did not seem to be associated with adverse effects.

Fate in humans and animals: In rats, Linuron breaks down completely after passing through the liver. It is thus unlikely to bioaccumulate in mammalian systems.

Section 12 – Ecological Information

Breakdown in soil and groundwater: Linuron is moderately persistent in soils, with a field half-life of 30 to 150 days in various soils and under various conditions. A representative field half-life is estimated to be approximately 60 days. Microbial degradation is the major process by which Linuron is lost from soils; photodegradation and volatilization are not important contributors to its breakdown. The metabolites of Linuron (3,4-dichloroaniline and carbon dioxide) are less toxic than Linuron. Linuron is moderately bound to soil, and is soluble in water. Losses may occur through transport of Linuron in runoff water and on suspended colloidal matter. Linuron has been found at very low concentrations in well and groundwater samples in some US states.

Breakdown in water: Linuron is slightly to moderately soluble in water, and is not readily broken down in water.

Breakdown in vegetation: Linuron is more readily absorbed by roots from soil application, than by leaves from foliar application. The rate at which it is absorbed, translocated, and subsequently broken down (or metabolized) differs with various plant 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)

MATERIAL SAFETY DATA SHEET

R-Phrase
SUSDP
UN Number

Risk Phrase
Standard for the Uniform Scheduling of Drugs & Poisons
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.

This MSDS copyright © Kilford & Kilford Pty Ltd, November, 2003.

<http://www.kilford.com.au> Phone (02)9251 4532