

Linuron Flowable

Date of Issue: 3 December 2010

1. IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND SUPPLIER

Product Name: Linuron Flowable Herbicide
Other Names: -
Recommended Use: Herbicide
Manufacturer/Supplier: Tessenderlo Kerley, Inc.
Address: 2255 N. 44th Street, Suite 300
Phoenix, Arizona 85008 USA
Australian Distributor: AgNova Technologies Pty Ltd
ACN: 097 705 158
Address: Suite 10/857 Doncaster Road
Doncaster East Vic 3109 Australia
Telephone: (03) 9840 2333
Facsimile: (03) 9840 2555
Website: www.agnova.com.au
Contact: Managing Director
Emergency Telephone Number: 1800 033 111 (24 hrs)

2. HAZARDS IDENTIFICATION**HAZARDOUS SUBSTANCE – DANGEROUS GOOD**

Hazard Designation: Classified as hazardous according to the criteria of NOHSC.

Risk Phrases: R61 May cause harm to the unborn child.
R62 Possible risk of impaired fertility
R40 Limited evidence of a carcinogenic effect
R22 Also harmful if swallowed.
R48/22 Also harmful: danger of serious damage to health by prolonged exposure if swallowed.
R50 Very toxic to aquatic organisms
R53 May cause long-term adverse effects in the aquatic environment.

Safety Phrases: S53 Avoid exposure – obtain special instructions before use.
S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S60 This material and its container must be disposed of as

Linuron Flowable

Date of Issue: 3 December 2010

hazardous waste.

S61 Avoid release to the environment. Refer to special instructions/Material Safety Data Sheets.

S2 Keep out of reach of children

ADG
Classification:

Classified as Dangerous Goods according to the Australian Code for the Transport of Dangerous Goods by Road and Rail.

DG Class 9 – Environmentally Hazardous

SUSDP
Classification:

Poison Schedule 6

3. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredients:	CAS Number:	Concentration (%):
Linuron	330-55-2	40.6
Inert ingredients (including percentages of the following)	-	59.4
Ethylene glycol	107-21-1	8

4. FIRST AID MEASURES

If poisoning occurs, immediately contact a doctor or Poisons Information Centre (Phone 13 11 26), and follow the advice given. Show this Material Safety Data Sheet to a doctor.

Inhalation: Remove victim from contaminated atmosphere. If breathing is laboured, administer oxygen. If breathing has ceased, clear airway and start mouth-to-mouth resuscitation. If heart has stopped beating, external heart massage should be applied. Obtain immediate medical attention.

Ingestion: DO NOT INDUCE VOMITING. Give 1 or 2 glasses of water. If vomiting does occur, repeat fluid administration. If unconscious or convulsing, do not give fluids. Obtain immediate medical attention.

Skin Contact: Immediately flush with large quantities of water for 15 minutes. Remove contaminated clothing under a safety shower. Do not neutralize with chemical agents. Obtain medical attention if irritation occurs.

Eye Contact: Immediately flush with large quantities of water for 15 minutes. Hold eyelids apart during irrigation to ensure thorough flushing of the entire area of the eye and lids. Obtain immediate medical attention.

Linuron Flowable

Date of Issue: 3 December 2010

General Advice: Have the product container or label with you when calling the Poison Information Centre or physician, or going for treatment.

First Aid Facilities: Ensure washing facilities, including eye wash station and safety shower, are available.

Medical Attention: Treat symptoms.
No specific antidote known.

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media: Use extinguishing media as appropriate for combustibles involved in fire.

Hazards from Combustion Products: None.

Special Protective Equipment for Fire-Fighters: Wear self-contained breathing apparatus and full protective equipment.

Further Information: Evacuate personnel to a safe area.

6. ACCIDENTAL RELEASE MEASURES

Emergency Procedures:
Clear area. Shut off leak if safely possible.

Methods and Materials for Containment and Cleanup:*Small Releases:*

Do not wash small spills away. Ensure adequate ventilation. Do not discharge into drains or surface waters/groundwater. Sweep up then shovel material into a suitable container (fibreboard) for disposal. If spill area is on ground nears trees or other valuable plants, remove top two inches of soil after initial clean-up. Dispose as directed by the pesticide product label.

Large Releases:

Cordon off area of spillage and dike area with dirt, sand or other inert material to prevent any further migration. Recover as much of usable product for application (best disposal practice). Handle remaining material as a small spill above.

7. HANDLING AND STORAGE

Linuron Flowable

Date of Issue: 3 December 2010

Precautions for Safe Handling: Keep out of reach of children. Use only in a well-ventilated area. Avoid prolonged or repeated contact with the skin and eyes. Avoid breathing vapours, mist or dust. Wash thoroughly with soap and water after handling. Wash exposed clothing before reuse.

Conditions for Safe Storage: Store in cool, dry, well-ventilated areas, away from heat or flame. Protect containers from physical damage and contamination. Do not store close to water, food or feed to avoid contamination.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

National Exposure Standards:		OSHA	ACGIH
		PEL	TLV STEL
	Linuron	Not established	Not established
	Ethylene Glycol	Not established	39.4 ppm ceiling, 100 mg/m ³ , aerosol

Biological Limit Values: None established.

Exposure Measures: Use adequate exhaust ventilation to prevent inhalation of product vapours, mist or dust.

Personal Protective Equipment: *Respiratory protection:* Wear dual cartridge respirator for dusts and mists if local ventilation is inadequate.

Skin Protection: Wear butyl, natural, nitrile or neoprene rubber gloves and coveralls over long-sleeve shirt and long pants and chemical resistant apron to prevent repeated or prolonged contact with the skin.

Eye protection: Chemical goggles and a full face shield to prevent contact with face and eyes.

9. PHYSICAL AND CHEMICAL PROPERTIES
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Linuron Flowable

Date of Issue: 3 December 2010

Appearance:	Light tan liquid
Odour:	Slight characteristic odour
pH:	7.1
Vapour pressure:	Not determined
Vapour density:	Not determined
Boiling Point:	103°C±3°C
Freezing Point:	Not determined.
Flash Point:	Not applicable
Specific gravity:	1.18
Water Solubility:	Disperses to form a suspension. Solubility of Linuron technical is 75 ppm in water.

10. STABILITY AND REACTIVITY

Chemical Stability:	This is a stable material under normal temperature and storage conditions.
Conditions to Avoid:	None reasonably foreseeable.
Incompatible Materials:	None reasonably foreseeable.
Hazardous Decomposition Products:	Thermal decomposition may release toxic and/or hazardous gases.
Hazardous Reactions:	Polymerization will not occur.

11. TOXICOLOGICAL INFORMATION

Acute Oral Toxicity:	LD ₅₀ rat female: 3247 mg/kg LD ₅₀ rat male: 3540 mg/kg
Acute Inhalation Toxicity:	LC ₅₀ (4 hour): >1.7 mg/L
Acute Dermal Toxicity:	LD ₅₀ rabbit: > 2000 mg/kg
Carcinogenicity Assessment:	Carcinogenic Category 3 (HSIS) Not listed as a carcinogen by NTP, IARC or OSHA
Toxicity to	Toxic to Reproduction Category 2 (HSIS)

Linuron Flowable

Date of Issue: 3 December 2010

Reproduction Assessment: Toxic to Reproduction Category 3 (HSIS)

12. ECOLOGICAL INFORMATION

Ecotoxicity:
Linuron:
Toxicity to Fish: LC₅₀/96 h/*Oncorhynchus mykiss* (rainbow trout): 3.3 mg/L

 LC₅₀/96 h/Bluegill sunfish: 9.6 mg/L

Aquatic Toxicity:

 EC₅₀/48 h/*Daphnia magna*: 1.9 mg/L

 EC₅₀/72 h/Freshwater algae: 0.028 mg/l

Toxicity to Algae:
Avian Toxicity:

 Acute oral LD₅₀ Bobwhite quail: 940 mg/kg

 Acute dietary LC₅₀ Bobwhite quail: 1838 ppm

 Acute dietary LC₅₀ Mallard duck: 5224 ppm

 Oral LC₅₀ Mallard duck: 3083 ppm

Ethylene
Glycol:
Aquatic
Toxicity:

 LC₅₀/96 h/fathead minnows: 49000 mg/L

 LC₅₀/48 h/ *Daphnia magna*: 46300 mg/L

 LC₅₀/96 h/algae: 10940 mg/L

Persistence and Degradability:
Plants: In plants, metabolism involves demethylation and demethoxylation.

Soil and water: Microbial degradation is the primary factor in disappearance from soil. Half-life under field conditions is c. 2-5 months, F. Kempson-Jones and R. J. Hance *Pestic. Sci.*, 1979, 10: 449. In soil, DT₅₀ 38-67 d. Soil adsorption K_∞ 500-600.

Mobility:

This chemical is known to leach through soil into ground water under certain conditions as a result of agricultural use.

13. DISPOSAL CONSIDERATIONS

Disposal Methods including Disposal of Containers:

Linuron Flowable

Date of Issue: 3 December 2010

Do not contaminate water, food or feed by disposal. Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

Environmental Hazards:

This pesticide is toxic to fish and aquatic invertebrates. Do not apply directly to water or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not apply where weather conditions favour drift from areas treated. Do not contaminate water when cleaning of equipment or disposing of equipment washwaters or rinsate.

Ground water advisory:

This chemical is known to leach through soil into ground water under certain conditions as a result of agricultural use. Use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in ground water contamination.

Refer to the product label for additional application instructions relating to environmental precautions. Always read and follow the product label.

Container Disposal:

Plastic containers: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of resulting smoke.

Paper and Plastic Bag: Completely empty bag into application equipment. Then dispose of empty bag in a sanitary landfill, or by incineration or if allowed by state and local authorities, by burning. If burned, stay out of resulting smoke.

Container Refilling and Disposal: Refer to product label.

Container Disposal for Bulk Containers: Refer to product label.

The container must only be refilled with this pesticide product. **DO NOT REUSE THE CONTAINER FOR ANY OTHER PURPOSE.**

Do not transport if the container is damaged or leaking.

Disposal of the container must be in compliance with state and local regulations.

For spills or leaks, see section 6.

14. TRANSPORT INFORMATION

UN Number: 3082

Linuron Flowable

Date of Issue: 3 December 2010

Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Linuron 50%)
Class: 9
Packing Group: III
Special Precautions for User: None
Hazchem Code: 3Z

15. REGULATORY INFORMATION

SUSDP: Poison Schedule 6
APVMA: Registered according to the Agricultural and Veterinary Chemicals Act 1988.
APVMA Product Number: 60222

16. OTHER INFORMATION

Edition: Initial version
Revision Due: 3 December 2015
Reason for Revision: -
Abbreviations and Acronyms: APVMA – Australian Pesticides and Veterinary Medicines Authority
ACGIH – American Conference of Governmental Industrial Hygienists
IARC – International Agency for Research on Cancer
NOHSC – National Occupational Health and Safety Commission
NTP – National Toxicology Program (Department of Health and Human Services, USA)
OSHA – Occupational Safety and Health Administration (United States Department of Labor)
SUSDP – Standard for the Uniform Scheduling of Drugs and Poisons

Data Sources: Manufacturer product safety data and published data

This MSDS summarises our best knowledge of the health and safety hazard information of the product and how to safely handle and use the product in the workplace. Each user should read this MSDS and consider the information in the context of how the product will be handled and used in the workplace including in conjunction with other products.

Linuron Flowable

Date of Issue: 3 December 2010

The opinions expressed herein are those of qualified experts with the manufacturer. Since the use of this information and of these opinions and the conditions of use of this product are not within the control of Tessenderlo Kerley, Inc. or AgNova Technologies Pty Ltd, it is the user's obligation to determine the conditions of safe use of the product.

END OF MSDS