SAFETY DATA SHEET

Elliott Technologies ltd

LINFLO 450

Date of Issue: 22nd December 2005

1. SUBSTANCE/PREPARATION AND COMPANY IDENTIFICATION

Chemical name of active ingredient(s): **Linuron**

Recommended use: **Herbicide**

Supplier: **Elliott Technologies Limited**
45 Kitchener Road
Pukekohe
Phone 0800 100 325

Emergency telephone number: **0800 Poison (0800 764 766) 24 Hours**

2. HAZARDS IDENTIFICATION

Hazard Classification: **Toxic - 6.1E, 6.3B, 6.4A, 6.8B, 6.9A,**
Ecotoxic –9.1A, 9.2A, 9.3C

Required identification Details: WARNING – KEEP OUT OF REACH OF CHILDREN
ECOTOXIC

Very toxic to aquatic organisms.
Very toxic in the soil environment.
Harmful to terrestrial vertebrates.

HARMFUL – may be harmful if swallowed, inhaled or absorbed through the skin.
May cause skin irritation
May cause eye irritation.
Frequent exposure at high doses may cause reproductive/development damage.
Frequent exposure at high doses may cause damage to the production of blood cells.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance/preparation Information on hazardous ingredients

Common name	**CAS No**	**%**
Linuron (ISO)	330-55-2	45

4. FIRST-AID MEASURES

Description of necessary first aid measures:

Effects and symptoms
First-aid measures
Inhalation: Remove victim to fresh air. If breathing is difficult: artificial respiration.Get medical attention.

Ingestion:	Wash out mouth with plenty of water. Get medical attention. Never give anything by mouth to an unconscious person.
Skin contact:	Remove victim from area of exposure. Wash off remaining material with plenty of water. Remove contaminated clothing. Wash away remainder with water and soap.
Eye contact:	Wash out with plenty of water with the eyelid held wide open for at least 15 minutes. Get medical attention.
Notes to a physician:	There is no specific antidote. Treat symptomatically and give supportive therapy.

5. FIRE-FIGHTING MEASURES

HAZCHEM Code:	2Z
Extinguishing media :	Foam, dry chemical or carbon dioxide.
Hazardous thermal (de)composition products:	Chloride compounds and nitrogen oxides
Protection of fire-fighters:	Self-contained breathing apparatus and total protection required in enclosed areas.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:	Wear PVC overalls, chemical resistant gloves, facemask or goggles.
Environmental precautions:	Contain Spills. Do not discharge into drains or the environment.
Methods for cleaning up:	Prevent further spillage. Adsorb spilled product and place in sealable container for disposal. Wash down affected area with water plus detergent. Absorb and collect washings and place in the same sealable container for disposal. Seek advice from the local authority regarding disposal.

7. HANDLING AND STORAGE

Handling:	Avoid contact with eyes and skin.
Storage:	Keep only in the original container. Keep in a cool, dry, well ventilated place away from direct sunlight. Protect from frost. Store at 10-30^{O}C.
Packaging materials:	Plastic lined cardboard box.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Workplace Exposure Guidelines

Exposure standards:	None Established

Engineering measures

Exposure control measures: Ventilation required in enclosed areas.

Personal Protective Equipment

Detail specifications for equipment:

Respiratory system: Respiratory protection is not required if good ventilation is maintained.

Skin and body: Wear long sleeved shirt, long pants.

Hands: Use gloves chemically resistant (eg: nitrile or neoprene) when prolonged or frequently repeated contact could occur.

Eyes: Use safety glasses if exposure possible.

General hygiene: When handling do not eat, drink or smoke. Wash hands thoroughly after handling. Wash clothing separately before re-use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Colour, Odour. Brownish aromatic liquid (suspension concentrate).

pH: 7 - 9.5
Vapour Pressure: 0.05 mPa @ 20oC (Linuron (ISO))
Boiling Point: 100°C (Water)
Freezing/melting point: N/A
Solubility: Dispersible.
Specific gravity: 1.19°C 0.02 g/mL @ 20°C
Flashpoint: Not flammable
Octanol/water partition coefficient: log P = 3.0 (Linuron (ISO))
Explosion properties: Not Explosive.
Oxidation properties: Not an Oxidizing Agent

10. STABILITY AND REACTIVITY

Stability: Stable
Conditions to avoid: Excess heat
Materials to avoid: Oxidizing agents, acids and alkali.
Hazardous decomposition Products: In Fire - Chloride compounds and nitrogen oxides.
Hazardous polymerization: Not subject to polymerization
Specific Data:
Hazardous reactions : None expected

11. TOXICOLOGICAL INFORMATION

Acute toxicity – Oral : LD50 (rat) = 4,480 mg/kg
Acute toxicity - Dermal : LD50 (rabbit) > 4,000 mg/kg
Acute toxicity – Inhalation: LC50 (rat) > 4.66 mg/L (4 hours)
Skin irritation : Not irritating (rabbit).
Eye irritation: Not irritating (rabbit).
Sensitization : Non sensitizer (guinea-pig).

Chronic toxicity

NOAEL (rat) = 25 ppm or 1.3 mg/kg/day (2 years)

	NOAEL (mouse) = 50 ppm or 6.5 mg/kg/day (2 years)
Mutagenicity:	Not mutagenic
Reproduction toxicity:	NOAEL (rat) = 6.83 - 8.3 (100 ppm) mg/kg/day.
Other information : Teratogenicity -	NOAEL (rat) = 20 mg/kg/day (Maternal and Fetal) NOAEL (rabbit) = 10 mg/kg/day (Maternal) ; 25 mg/kg/day Fetal)

12. ECOLOGICAL INFORMATION

Ecotoxicity	**Very toxic to aquatic organisms. Not toxic to bees.**
Rainbow trout	LC50 (96 hours) = 15.4 mg/L
Daphnia magna	EC50 (48 hours) = 4.1 mg/L
Algae	(scenedesmus subspicatus) EC50 (72 hours)=0.1mg/L
Birds	Bobwhite quail (colinus virginianus) LD50 = 314 mg/kg bobwhite quail (colinus virginianus) LC50 = 1,250 ppm (8-day feeding)
Bees	Oral LD50 > 197 □g g /bee Contact LD50 > 200 □g /bee
Soil:	Not mobile.Adsorbed on organic matter and clay. Kd = 2.2 - 18 mL/g Koc = 362 - 877 mL/g
Persistence/degradability Soil	Lab. - Half-life time (t½): 38-135 days (15-25o) Field - DT50: 13-82 days. Degradation is primarily via: microorganisms.
Water:	DT50: 48 days. Low risk of underground water contamination.

13. DISPOSAL CONSIDERATIONS

Methods of disposal :	Triple rinse container and add to spray tank, burn if permitted and circumstances, particularly wind direction, permit, otherwise crush and bury in an approved landfill. Do not contaminate any waterway with chemical or empty container. Ensure that any unwanted product is used in accordance with label directions.

14. TRANSPORT INFORMATION - International transport regulations

UN number:	**3082**
Class or Division:	**9**
Packing Group:	**III**
Marine Pollutant:	**YES**
Proper shipping name :	**Environmentally hazardous substance, Liquid, N.O.S.,Linuron (ISO).**

15. REGULATORY INFORMATION

ACVM Registered Number:	**P7210**

HSNO Approval Code: **HSR000938**

16. OTHER INFORMATION

Additional information:

Original Issue Date: 22 December 2005
Revision Date: N/A
Replaces: N/A

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