SAFETY DATA SHEET

Elliott Technologies ltd

SHARK®

Date of Issue: 4 Februray 2008

1. SUBSTANCE/PREPARATION AND COMPANY IDENTIFICATION

Chemical name of active ingredient(s): **Carfentrazone-ethyl**

Recommended use: **Pesticide**

Supplier: **Elliott Technologies Limited**
PO Box 838
Pukekohe
Phone 0800 100 325

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

2. HAZARDS IDENTIFICATION

Hazard Classification: **6.1E, 6.3B, 6.4A, 6.9B, 9.1A, 9.2A**
Required identification Details: ECOTOXIC

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance/preparation Information on hazardous ingredients

Common name	**CAS No**	**%**
Carfentrazone-ethyl	128639-02-1	60 g/L
Inert Ingredients		to 100%

4. FIRST-AID MEASURES

Description of necessary first aid measures:

Effects and symptoms **HEALTH WARNING:** TOXIC IF INGESTED, Presumed to cause liver damage from repeated oral exposure at high doses. May cause eye and skin irritation.

First-aid measures

Inhalation: Remove affected person to fresh air. If respiratory distress occurs or irritation persists for more than 30 minutes, seek prompt medical attention.

Ingestion: Do not induce vomiting and do not give liquids of any kind to the person. Never give anything by mouth to an unconscious person. Seek medical attention immediately.

Skin contact: If product comes into contact with skin wash with plenty of soap and water. Remove contaminated clothing. If irritation occurs

	and persists seek medical advice.
Eye contact:	If product comes into contact with eyes, hold eyes open, gently flood with water for at least 15 minutes. If any discomfort persists seek medical advice.
Notes to a physician:	This product is expected to have low oral, dermal and inhalation toxicity. It is expected to be irritating to the eyes and skin. Note that there is a risk if pulmonary irritation or chemical pneumonitis if this product is aspirated during vomiting. Consideration should be given to gastric lavage with an endotracheal tube in place.

5. FIRE-FIGHTING MEASURES

HAZCHEM Code:	2X
Extinguishing media :	Foam, CO_2 or dry chemical. Soft stream water fog only if necessary. Contain all runoff.
Unusual Fire or Explosion Hazards:	Moderately combustible. When heated above the flashpoint, this material releases vapours which, when mixed with air, can burn or be explosive.
Hazards from combustion products	On burning will emit Carbon dioxide, Carbon monoxide and may release toxic fumes. Mixtures of toxic decomposition products may be produced upon combustion of this product in confined spaces.
Protection of fire-fighters:	Isolate fire area. Evacuate downwind. Wear full protective clothing and self-contained breathing apparatus. Do not breathe or come into contact with smoke, gases or vapours generated.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:	Wear protective clothing and respiratory protection as prescribed in Section 8, below.
Environmental precautions:	Isolate and post spill area. Remove nearby ignition sources (such as smoking, matches or open flames). Keep unprotected persons and animals out of the area. Do NOT allow spilled product to enter sewers, drains, dams, creeks or any other waterways. Dike to confine spill and absorb with a non-combustible absorbent such as clay, sand or soil. Vacuum, shovel or pump waste into an approved container and clearly label for disposal.
Methods for cleaning up:	Vacuum, shovel or pump waste into an approved container and clearly label for disposal. To clean and neutralise spill area, tools and equipment, wash with a suitable solution of caustic or soda ash, and an appropriate alcohol (i.e., Methanol, Ethanol or Isopropanol). Follow this by washing with a strong soap and water solution. Absorb, as above, any excess liquid and add to the containers of waste already collected. Repeat if necessary. Dispose of waste as in accordance with Local Regional Council

by-laws.

7. HANDLING AND STORAGE

Handling:	Avoid skin and eye contact and breathing vapour.
Storage:	Keep out of reach of children and animals. Store in a in a cool, dry, well-ventilated place. Store below 30℃, away from sources of extreme heat and open flames. Store in original containers only. Do not contaminate other pesticides, fertilizers, water, food or feed by storage or disposal.
Packaging materials:	Fluorinated HDPE

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Workplace Exposure Guidelines

Workplace exposure standards:	No exposure standard has been established for Carfentrazone-ethyl or this product formulation by ERMA NZ. A blanket limit of 10 mg/m^3 applies for dusts or mists when limits have not otherwise been established.
Application in the workplace:	Not established
Exposure Standards outside: The workplace:	Not established

Engineering measures

Exposure control measures:	Follow First Aid recommendations
Ventilation specification:	Use local exhaust at all process locations where vapour or mist may be emitted. Ventilate all transport vehicles prior to unloading. In industrial situations, concentration values should not exceed the TWA. If the concentration of mists, dusts or vapours is becoming high, you are advised to modify processes or the environment to reduce the problem.

Personal Protective Equipment

Detail specifications for equipment:	Depending upon concentrations encountered, wear coveralls or a long-sleeved uniform and head covering. For larger exposures as in the case of spills, wear impermeable suit, such as Hypalon, Tyvek®, Saranex® or PVC. Launder all work clothing before reuse (separately from household laundry).
Respiratory system:	For splash, mist or spray exposures wear, as a minimum, a properly fitted half-face or full-face air-purifying respirator which is approved for pesticides (Australian Standards).
Skin and body:	Wear chemical protective gloves made of materials such as nitrile or neoprene. Thoroughly wash the outside of gloves with soap and water prior to removal. Inspect regularly for leaks.
Hands:	Wash hands after use.
Eyes:	For splash, mist or spray exposure, wear chemical protective

	goggles or a face shield.
General hygiene:	Clean water should be available for washing in case of eye or skin contamination. Wash skin prior to eating, drinking or using tobacco. Shower at the end of the workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Odor:

Physical State, colour & odour::	Translucent liquid, yellow-orange in colour. Minimal odour.
pH:	4.86 @ 24℃ (1% aqueous emulsion)
Vapour Pressure:	Negligible at ambient temperature and Pressure.
Vapour Density:	NA
Boiling Point:	Not available (liquid at normal temperatures)
Freezing/melting point:	NA
Solubility:	Disperses in water to form an emulsion
Specific gravity or density:	0.931 g/cm³ @ 20℃ ± 0.5℃
Flash Point	63℃
Octanol/water partition coefficient:	NA
Explosion properties:	NA
Oxidation properties:	Not an Oxidizer

10. STABILITY AND REACTIVITY

Stability:	Stable at ambient temperatures and under normal conditions of use.
Conditions to avoid:	Excessive heat and fire.
Materials to avoid:	Strong oxidising agents.
Hazardous decomposition Products:	Upon combustion or thermal decomposition, Carbon dioxide, Carbon monoxide (if Oxygen supply is limited), aldehydes, ketones, Nitrogen oxides, Hydrogen chloride and Hydrogen fluoride may be liberated
Hazardous polymerization:	Will not occur
Specific Data:	
Hazardous reactions :	None known. Polymerisation will not occur.

11. TOXICOLOGICAL INFORMATION

Acute toxicity – Oral :	LD50 (rat) >2000 mg/kg
Acute toxicity - Dermal :	LD50 >2000 mg/kg
Acute toxicity – Inhalation:	LC50 (rat) >6.92 mg/L (4h)
	This product may be a skin sensitizer.
Skin irritation :	Expected to be mildly irritating.
Eye irritation:	Expected to be moderately irritating.
Inhalation:	Expected to have low toxicity. Inhalation of aromatic hydrocarbon vapours *(content <2% w/v in formulation)* may cause dizziness, disturbances in vision, drowsiness, respiratory irritation, and eye, skin and mucous membrane irritation.

Acute Health Effects

This product is expected to have low oral, dermal and inhalation toxicity. It is expected to be irritating to the eyes and skin. Signs of toxicity with Carfentrazone-ethyl, in laboratory animals, included tremors, abdominal gripping, mucoid anal discharge, bloody oral discharge, hypothermia, squinting eyes, lacrimation, and pink to orange-brown discoloration of urine. Polyether modified trisiloxane *(content <6% w/v in formulation)* may be harmful by inhalation, and it can cause serious damage to the eyes. Inhalation of aromatic hydrocarbon vapours *(content <2% w/v in formulation)* may cause dizziness, disturbances in vision, drowsiness, respiratory irritation, and eye, skin and mucous membrane irritation. Vomiting after ingestion of this product may cause aspiration of aromatic hydrocarbons into the lungs, which may result in fatal pulmonary oedema. Exposure to Butanol vapors *(content <2% w/v in formulation)* may produce headaches, drowsiness and irritation of the nose and throat. Excessive exposures to Butanol liquid or vapours may result in contact dermatitis and irritation of the mucous membranes.

Chronic Health Effects

No data is available for the formulation. In studies with laboratory animals, Carfentrazone-ethyl did not cause reproductive toxicity, teratogenicity, or carcinogenicity. An overall absence of genotoxicity has been demonstrated in tests of mutagenicity, DNA damage and chromosome aberrations. Chronic exposure to aromatic hydrocarbons may cause headaches, dizziness, loss of sensations or feelings (such as numbness), and liver and kidney damage. Disturbances in hearing and balance have been reported in workers exposed to Butanol vapors. Exposure to Butanol vapors may produce headache, drowsiness and irritation of the nose and throat. Excessive exposure to Butanol vapors may result in contact dermatitis and irritation of the mucous membranes. Chronic exposure to Trimethylbenzene *(content <1% w/v in formulation)* may cause CNS changes, asthmatic bronchitis and blood dyscrasias.

Carcinogenicity: Not a carcinogen
Mutagenicity: Not Mutagenic
Reproduction toxicity: Not a Reproductive toxin
Other information :

12. ECOLOGICAL INFORMATION

Ecotoxicity

No data is available for the formulation.

Environmental Data

No data available for the formulation. Carfentrazone-ethyl is rapidly degraded in soil (DT50 < 1.5 days) through microbial degradation, initially by hydrolysis to F8426-Chloropropionic acid, and then through further side-chain degradation to other acids. Based on field studies, carfentrazone-ethyl and its major metabolite, F8426-Chloropropionic acid, are confined to the top soil layer, indicating only slight mobility in soil. Carfentrazone-

ethyl is hydrolytically unstable in base (half-life of 5.1 hours), with stability increasing with decreasing pH. It is susceptible to photolytic degradation in water, with a half-life of 8.3 days (pH 5). The Log Pow is 3.36 and the measured bioconcentration factor in whole fish is 159, both indicating a low potential for accumulation. Its vapour pressure is 1.19 x 10-7 torr, indicating that volatility is not a concern with this chemical.

Carfentrazone-ethyl: Care should be taken to avoid contamination of the aquatic environment as Carfentrazone-ethyl is a herbicide and is toxic to algae. In a test with earthworms, Carfentrazone-ethyl was shown to cause no effects at concentrations up to 820 mg/kg in soil. Carfentrazone-ethyl has low toxicity to bees (no death at 200 µg/bee).

Species	LD^{50}	LC^{50}	EC^{50}
Algae	---	---	5.7-17 µg/L
Fish	---	1.6-2.0 mg/L	---
Aquatic crustacea	---	> 9.8 mg/	---
Birds	> 2,250 mg/kg	> 5,620 ppm	---

13. DISPOSAL CONSIDERATIONS

Spills & Disposal: Do NOT allow product or wash solutions to enter sewers, drains, dams, creeks or any other waterways. Dispose of waste according to instructions in section 6.

Disposal of empty containers: Non-returnable containers that held this material should be cleaned, prior to disposal, by triple rinsing with water. Dispose of rinsings as indicated above. If recycling, replace cap and return clean containers to recycler or designated collection point. If not recycling, break, crush or puncture and bury empty containers in a local authority landfill. If no landfill is available bury the containers below 500 mm in a disposal pit specifically marked and set up for this purpose clear of waterways, vegetation and roots. Empty containers and product should not be burnt. Do not cut or weld metal containers. Vapours that form may create an explosion hazard.

14. TRANSPORT INFORMATION

International transport regulations

International transport regulations: This product contains Carfentrazone-ethyl and Polyether modified trisiloxane, which are considered to be environmental toxins and thus falls under the classification: Environmentally hazardous substances, liquid, N.O.S. (UN 3082):

UN number: **3082**

Land - Road/Railway **Class 9**

Proper shipping name : **Environmentally hazardous substance, Liquid, N.O.S.,**

IDENTIFIER	ROAD & RAIL (RID/ADR)	SEA TRANSPORT (IMO/IMDG)	AIR TRANSPORT (ICAO/IATA)
UN Number:	3082	3082	3082
Primary Hazard Class:	9	9	9
IER Guide:	47	47	---
Labelling:	9	9	9
Packaging Group:	III	III	III

15. REGULATORY INFORMATION

ACVM Registered Number: **P7808**
HSNO Approval Code: **HSR007883**

16. OTHER INFORMATION

Additional information:

Disclaimer
This Safety Data Sheet is based on the most recent information available. To the extent permitted by law, users of this information accept that neither the manufacturer, Elliott Technologies Limited as distributor, nor any other distributor have any liability or responsibility whatsoever for any loss, damage or injury whether in contract or tort, whether direct, indirect or consequential howsoever arising in connection with the supply of these information.

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