SAFETY DATA SHEET

HAMMER®

Date of Issue: 09 October 2011

1. SUBSTANCE/PREPARATION AND COMPANY IDENTIFICATION

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

Recommended use: **Herbicide**

Supplier: **Etec Crop Solutions Limited**
PO Box 51584
Pakuranga, Auckland
Phone 0800 100 325

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

2. HAZARDS IDENTIFICATION

Hazard Classification: **3.1D, 6.1E, 6.3B, 6.4A, 6.9B, 9.1A, 9.2A**

Required identification Details:

Combustible Liquid
Toxic if ingested.
Presumed to cause liver damage from repeated oral exposure at high doses.
May cause eye and skin irritation.
Ecotoxic to aquatic life. Do not apply to bodies of water.
Toxic to fish. Do not contaminate sewers, drains, dams, creeks or any other waterways with product or empty container.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance/preparation Information on hazardous ingredients

Common name	**CAS No**	**%**
Carfentrazone ethyl	81777	89
Surfactants	Proprietary	1-10
Liquid Hydrocarbons	64742-94-5	>60

4. FIRST-AID MEASURES

Description of necessary first aid measures:

Effects and symptoms
First-aid measures
Inhalation: Remove to fresh air. Apply artificial respiration if necessary.

Get medical help if breathing difficulty persists.

Ingestion: Give a glass or two of water. Get medical help. Never give anything by mouth to an unconscious person.

Skin contact: Remove contaminated clothing. Wash with soap and water. If irritation persists see a doctor.

Eye contact: Immediately flush with water for 15 minutes. If irritation persists see a doctor.

Notes to a physician:
This product has low oral dermal and inhalation toxicity. It is mildly irritating to the skin and eyes. This product contains light aromatic hydrocarbons that can produce a severe pneumonitis or fatal pulmonary edema if aspirated during vomiting. Consideration should be given to gastric lavage with an endotracheal tube in place. Treatment is otherwise controlled removal of exposure followed by symptomatic and supportive care.

5. FIRE-FIGHTING MEASURES

HAZCHEM Code: 3Z

Extinguishing media : Foam, CO_2, dry chemical.

Hazardous thermal (de)composition products: >50 Litres X 1, 200Litres+ X2
Flammable. Flashpoint 80^{O}C (CC)
Carbon monoxide, carbon dioxide, oxides of nitrogen, Hydrogen chloride and hydrogen fluoride.

Protection of fire-fighters: Wear full protective clothing and self contained breathing apparatus. Do not breathe smoke or gases.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Wear suitable protective clothing (refer section 8)

Environmental precautions: Contain spill, do not allow material to enter sewers or bodies of water. Keep unprotected persons and animals out of the area.

Methods for cleaning up: Soak up with sand, sawdust or other absorbent material, shovel or sweep up and bury in an approved landfill.

7. HANDLING AND STORAGE

Handling: Keep away from naked flame.

Storage: Store in original container tightly closed in a locked, dry, well ventilated place away from food and feedstuffs. Keep away from sparks, heat and flames. Keep out of reach of children or animals.

Packaging materials: Plastic containers (Fluorinated HDPE)

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Workplace Exposure Guidelines

Workplace exposure standards: Not Set

Exposure Standards outside The workplace: Not set

Engineering measures

Exposure control measures: Use local exhaust at all process locations where vapor or mist may be emitted. Ventilate all transport vehicles prior to unloading.

Personal Protective Equipment

Detail specifications for equipment:

Respiratory system: For splash, mist or spray exposure wear, as a minimum, a properly fitted half-face or full-face air-purifying respirator which is approved for pesticides (U.S.NIOSH/MSHA, EU CEN or comparable certification organization). Respirator use and selection must be based on airborne concentrations.

Skin and body: For splash, mist or spray exposure, wear chemical protective goggles or a face shield.

Hands: 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.

Eyes: Safety goggles or face shield.

General hygiene: Wash hands and face after use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Liquid

Colour: Yellow-orange

Odour: Aromatic solvent odour

pH: 5.25 (1% aqueous solution)

Vapour Pressure: 5.4 X 10-8@20^{o}C

Vapour Density: N/A

Boiling Point: N/A

Freezing/melting point:

Solubility: Emulsifies

Specific gravity or density:	N/A
Information for flammable material including: - **Lower and upper** - **Flammability limits** - **Flashpoint (state test Method**	Flashpoint $80^{O}C$
Flashpoint:	$80^{O}C$
Octanol/water partition coefficient:	
Explosion properties:	Not Explosive
Oxidation properties:	Not an oxidiser

10. STABILITY AND REACTIVITY

Stability:	Stable under normal conditions
Conditions to avoid:	Keep away from naked flame.
Materials to avoid:	Oxidising agents
Hazardous decomposition Products:	Refer to 5 above
Hazardous polymerization:	N/A
Hazardous reactions :	N/A

11. TOXICOLOGICAL INFORMATION

Acute toxicity – Oral :	4,077 mg/kg (rat)
Acute toxicity - Dermal :	> 4,000 mg/kg (rat)
Acute toxicity – Inhalation:	6.31 mg/l (4 h) (rat) Zero mortality
Skin irritation :	Mildly irritating (rabbit)
Eye irritation:	Mildly irritating (rabbit)
Sensitization :	N/A
Common name :	Carfentrazone ethyl

Chronic toxicity

Carcinogenicity:	N/A
Mutagenicity:	N/A
Reproduction toxicity:	N/A

Other information :
ACUTE EFFECTS FROM OVEREXPOSURE: This product has low oral, dermal and inhalation toxicity. It is mildly irritating to the skin and eyes. Signs of toxicity in laboratory animals included mydriasis, cyanosis, ataxia, dyspnea, lacrimation, and diarrhea. Inhalation of aromatic hydrocarbon vapors 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 edema.

CHRONIC EFFECTS FROM OVEREXPOSURE: No data 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.

12. ECOLOGICAL INFORMATION

No data available for the formulation. Data presented below are based on the active ingredient.

ENVIRONMENTAL DATA: 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 vapor pressure is 1.19 x 10-7 torr, indicating that volatility
is not a concern with this chemical.

ECOTOXICOLOGICAL INFORMATION:
Marine: Carfentrazone-ethyl is very toxic to algae (EC50: 5.7 to 17 µg/L), and much less toxic to fish (LC50: 1.6 to 2.0 mg/L), and aquatic crustacea (LC50 > 9.8 mg/L). Care should be taken to avoid contamination of the aquatic environment. Do not contaminate bodies of water with chemical or empty container.
Soil: In a test with earthworms, carfentrazone-ethyl was shown to cause no effects at concentrations up to 820 mg/kg in soil. Rapidly degraded in soils, half life is 1-2 days. Low potential for movement in soil. Rapidly hydrolyses at pH9 but stable at pH5.

Birds: Low toxicity to birds. Carfentrazone-ethyl shows little toxicity to birds either orally (LD50 > 2,250 mg/kg), or in the diet (LC50 > 5,620 ppm). Similarly, carfentrazone-ethyl has low toxicity to bees (no death at 200 µg/bee).

13. DISPOSAL CONSIDERATIONS

Methods of disposal : Triple rinse container and add to spray tank, burn if circumstances, particularly wind direction, permit allow, otherwise crush and bury in an approved landfill.

14. TRANSPORT INFORMATION
International transport regulations

UN number: UN3082

Class or Division: 9

Classification Code:	M6
Packing Group:	III
Marine Pollutant:	Carfentrazone-ethyl 22.73%
Proper shipping name :	Environmentally hazardous substance, liquid, N.O.S.,carfentrazone ethyl.
INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA):	Notes: Hammer meets no criterion established for dangerous good when shipped by aircraft.

15. REGULATORY INFORMATION

ACVM Registered Number:	P5990
HSNO Approval Code:	HSR000436

16. OTHER INFORMATION

Original Issue Date: 9th September 2005
Revision Date: 9 October 2011
Replaces: ES 142

Disclaimer EXCLUSION OF LIABILITY: PLEASE READ
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