SAFETY DATA SHEET

Nemacur™

Date of Issue: 17th May 2016

1. SUBSTANCE/PREPARATION AND COMPANY IDENTIFICATION

Chemical name of active ingredient(s):	Fenamiphos
Recommended use:	Agricultural nematicide
Supplier:	Amvac USA
Emergency telephone number:	**0800 Poison (0800 764 766) 24 Hours**

2. HAZARDS IDENTIFICATION

Hazard Classification:

Classified as hazardous according to the criteria in the Hazardous Substances (Minimum Degrees of Hazard) Regulations 2001

Required identification Details:

HSNO Class♦
3.1D, 6.1B, 6.3B, 6.4A, 6.9A, 9.1A, 9.2D, 9.3A, 9.4A
Combustible liquid – keep away from naked flame.
Toxic – may be harmful if swallowed.
Harmful - may cause skin irritation.
Harmful – may cause eye irritation.
Toxic – presumed to/may cause target organ damage from repeated oral exposure at high doses.
Toxic to fish with long-lasting effects.
Toxic to the soil environment.
Very toxic to terrestrial vertebrates.
Very toxic to terrestrial invertebrates.

Risk & Safety Phases

R23, R36, R38, R48, R50, R55, R57

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance/preparation Information on hazardous ingredients

Common name	CAS No	%
Fenamiphos	22224-92-6	40%
Hydrocarbon solvent	64742-94-5	22.7%
Napthalene	91.20-3	<0.23%

4. FIRST-AID MEASURES

Description of necessary first aid measures:
In case of poisoning by any exposure route contact the National Poisons and Hazardous Chemicals Information Centre, PO Box 913, Dunedin. Phone 0800 764 766, 0800 POISON.

Effects and symptoms No case of human poisoning due to this product is on record.

First-aid measures

Inhalation: Move person to fresh air and keep at rest until recovered. Apply artificial respiration if necessary.

Ingestion: Wash out mouth with water. Do NOT induce vomiting. Give a glass of water. Transport patient to doctor or hospital quickly.

Skin contact: If skin contact occurs remove contaminated clothing and wash affected areas thoroughly with soap and water.

Eye contact: If product gets in eyes wash it out immediately with water.

Notes to a physician:

Workplace facilities: No specific facilities required. Standard emergency equipment must be available.

Hygiene Practices: Avoid contact with skin and eyes and inhalation of concentration or spray mist. When mixing or applying, wear protective clothing, including face shield, impervious gloves and footwear. If clothing becomes contaminated with product, remove clothing immediately. DO NOT eat, drink or smoke while using. Wash hands and exposed skin thoroughly with soap and water before meals and after work. Wash protective clothing daily after work.

5. FIRE-FIGHTING MEASURES

HAZCHEM Code:

Extinguishing media : Water spray, foam, dry chemical, carbon dioxide, sand.

Hazardous thermal (de)composition products: In a fire, hydrogen cyanide, carbon monoxide, phosphorus pentoxide, sulphur dioxide and nitrogen oxides may be formed.

Protection of fire-fighters: When fighting a major fire wear an air-supplied respirator. Wear protective equipment.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: ***Emergency Procedures:***
Ensure suitable personal protection during removal of spillages. This means wearing eye protection, chemically resistant gloves, boots and overalls.

Environmental precautions: Washings must be prevented from entering surface water drains or waterways.

Methods for cleaning up: Keep all bystanders away.

Wear goggles, half face-piece respirator with combined dust and vapour cartridge, full length clothing and PVC gloves. Contaminated material must be disposed of in accordance with all local authority requirements.

- For quantities up to 50L of product bury in a secure approved landfill site.
- For quantities greater than 50L seek advice from the manufacturer (use emergency contact number) before attempting disposal. Contain in a secure location until disposal method is established.

Decontaminate the spill area with detergent and water and rinse with the smallest volume of water practicable.

Procedure for Disposal:

a)Triple rinsing or preferably pressure rinsing containers with water. Add the rinsings to the spray tank. DO NOT dispose of undiluted chemicals on site.
b) Burning of empty containers if circumstances, especially wind direction, permit is an alternative method. Do not burn unless in a suitable incinerator.
c) Product or unused spray mix should be disposed of according to label instructions.

7. HANDLING AND STORAGE

Handling: Avoid contact with skin and eyes and inhalation of concentrate or spray mist. When using, do not eat, drink or smoke. Wash face and hands before eating, drinking or smoking.

Storage: Store in a cool, dry, well ventilated place and protect from sunlight.

Packaging materials: Store in original container, tightly closed, away from foodstuffs.

Flammability: Combustible Liquid, Class C1 – flashpoint between 61°C and 150°C.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Workplace Exposure Guidelines

Workplace exposure standards: Solvent naptha (petroleum, heavy aromatic): TWA: 100mg/ m^3 (17ppm)
For the small amount of naphthalene present in the solvent TWA: 10ppm (52mg/ m^3, STEL: 15ppm (79mg m^3).
Skin notation.

Application in the workplace:

Exposure Standards outside:
The workplace:

Engineering measures

Use in well ventilated areas.

Hierarchy of controls:

Exposure control measures:

No Hazard indication:

Ventilation specification:

Personal Protective Equipment

Wear suitable protective clothing.

Detail specifications for equipment:	**Personal protection:**
Warnings and restrictions:	Any person who is mixing, loading or applying the substance, or entering an application area within the REI (of 48 hours), must wear full protective clothing such as chemical resistant coveralls, chemical resistant gloves, chemical proof hat and rubber gumboots plus socks when using. Full Respiratory and eye protective equipment must be worn when mixing and applying. Use a full face mask fitted with type 'A' filters for use with organic vapours. Remove protective clothing and wash hands and face thoroughly before meals and after work. May be harmful if swallowed, inhaled or absorbed through the skin. Avoid skin contact or inhalation. Avoid contact with the eyes.
Restricted Re-entry Interval:	The person applying this substance must not cause adverse effects beyond the boundary of the treated property, and must also avoid adverse effects from spray drift occurring. Mitigation measures employed must be recorded as part of the application records (i.e. in spray diaries). Records of use must be kept. The maximum application rate is 20L of product / ha and this product can be applied only once per crop cycle. Aerial application of Nemacur is not permitted. This product is very toxic to bees. Do not apply this product to any plant or tree likely to be visited by bees at the time of application or immediately after application until spray has dried or in areas where bees are foraging. The REI for Nemacur is 48 hours after application.
Notification of use:	The Person in charge of the application area is responsible for making sure that no person re-enters the treated area until the end of the REI. A person may re-enter the treated area before the end of the REI if full PPE & RPE is worn as if that person is applying the substance. Written notice must be given to anyone likely to be directly affected by the application, these persons include occupiers and owners of land, dwellings or buildings or property that is immediately abutting the application area.
Respiratory system:	Where insufficient ventilation, use suitable respiratory protection.
Skin and body:	
Hands:	Wear suitable protective gloves (e.g. Polyvinyl chloride − PVC). After contamination with product change the gloves immediately.
Eyes:	Chemical goggles/face protection.
General hygiene:	Avoid inhaling aerosols and vapours. Avoid contact with eyes and skin. Store work clothes and street clothes separately.

Wash hand before breaks and at the end of work. Change contaminated protective clothing. Keep away from food, drinks and tobacco.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Solution
Colour:	Clear yellow
Odour:	Aromatic, chemical
pH:	5.0 to 6.0 (1% in water)
Vapour Pressure:	1.2 x 10^{-6}hPa at 20 °C (fenamiphos): 0.3 kPa (at 38°C) - hydrocarbon solvent
Vapour Density:	> 1.00 –hydrocarbon solvent
Boiling Point:	Not known
Freezing/melting point:	
Solubility:	Emulsifies in water
Specific gravity or density:	1.05gm/cm³ @ 20°C
Information for flammable material including:	Combustible Liquid, Class C1 – flashpoint between 61°C and 150°C.
- **Lower and upper flammability limits**	LEL: 0.6; UEL: 7.0 Vol % in air (hydrocarbon solvent)
- **Flashpoint (state test Method**	70°C
Auto – ignition Temperature:	> 400°C (hydrocarbon solvent)
Octanol/water partition coefficient:	Fenamiphos: Log P_{ow} = 3.30 at 20°C
Explosion properties:	
Oxidation properties:	

10. STABILITY AND REACTIVITY

Stability:	Stable under standard conditions.
Conditions to avoid:	Excessive heat
Materials to avoid:	Oxidising agents, bases
Hazardous decomposition Products:	In a fire, phosphorus pentoxide, sulphur dioxide, carbon monoxide, and nitrogen oxides may be formed.
Hazardous polymerization:	(*state any substance likely to polymerize and cause dangerous conditions)*
Specific Data:	*(state any other information which might describe a likely hazard from the product including mixtures)*
Hazardous reactions :	Chloride compounds and nitrogen oxides.

11. TOXICOLOGICAL INFORMATION

Acute toxicity – Oral :	LD_{50}: rat 10mg/kg (similar formulation)
Acute toxicity - Dermal :	LD_{50}: rat 161 - 208mg/kg (similar formulation)

Acute toxicity – Inhalation:	LC_{50}: rat 132- 198mg/km³ (4h) (similar formulation)
Skin irritation :	Slightly irritating (rabbit) (derived from the ingredients)
Mucous membranes:	Slightly irritating (derived from the ingredients)
Sensitization :	Fenamiphos is not a skin sensitizer.
Common name :	
Chronic toxicity :	
Carcinogenicity:	
Mutagenicity:	
Reproduction toxicity:	
Other information :	

12. ECOLOGICAL INFORMATION

For Fenamiphos:

Ecotoxicity	
Fish	LC_{50}: 0.0093mg/l (96h); bluegill sunfish (*Lepomis macrochirus*)
	LC_{50}: 0.0721mg/l (96h); trout (*Oncorhynchus mykiss)*
Daphnia magna	EC_{50}: 0.0019mg/l (48h); Water flea (*Daphnia magna*)
Algae	IC_{50}: >10mg/l (72h); Green algae (*Scenedesmus subspicatus)*
Bacteria	EC_{50}: 2030mg/l (96h); activated sludge
Birds	LD_{50}: 0.7 to 1.6mg/kg; bobwhite quail
	LD_{50}: 0.9 to 1.2mg/kg; mallard ducks

Common name	
Mobility Soil	
Water	
Persistence/degradability Soil	
Water	
Bioaccumulative potential :	
Ecotoxicity	
Fish	
Daphnia magna	
Algae (scenedesmus subspicatus)	
Birds	
Bees	

13. DISPOSAL CONSIDERATIONS

Product Disposal:	Dispose of this product only by using according to the label, o at an approved landfill or other approved facility.
Container Disposal:	Triple rinse the empty container adding rinseate to the spray tank. Recycle if possible. If allowed under local authority, burn if

circumstances, especially wind direction permit, otherwise crush and bury in an approved local authority facility. Do not use container for any other purpose.

14. TRANSPORT INFORMATION

International transport regulations

International transport regulations:

UN number:	**UN3018**
Land - Road/Railway	Organophosphorus Pesticide, Liquid, Toxic (fenamiphos). Class 6, Packing Group II, Hazchem 2X.
Sea (MDG code):	Organophosphorus Pesticide, Liquid, Toxic (fenamiphos). Class 6, Packing Group II, Hazchem 2X. Marine Pollutant.
Air (ICAO/IATA)	UN 3018 Organophosphorus Pesticide, Liquid, Toxic (fenamiphos). Class 6, Packing Group II, Hazchem 2X.

15. REGULATORY INFORMATION

ACVM Registered Number:	P2690
HSNO Approval Code:	HSR000956
Approved Handler required:	Approved Handler required at time of use
ACVM Controls:	See www.nzfsa.govt.nz/acvm for registration conditions
HSNO Controls (inc. Tracking):	See www.ermanz.govt.nz for controls

16. OTHER INFORMATION

Additional information:
Original Issue Date: 1st July 2015
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Replaces: ES385

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The data given here is based on current knowledge and experience. The purpose of this Safety Data Sheet is to describe products in terms of their safety requirements. The above details do not imply any guarantee concerning composition, properties or performance of the product.