

Material Safety Data Sheet



PRODUCT NAME **ChemAg Assassinator 400 Insecticide**
APVMA Product Code: 56946

1 - IDENTIFICATION OF CHEMICAL PRODUCT AND COMPANY

Supplier Name **IMTRADE AUSTRALIA PTY LTD**
Address 17 Ocean Street, Kwinana, Western Australia, AUSTRALIA, 6167
Telephone (08) 9419 0333
Fax (08) 9419 7516
Emergency In a Transport Emergency Dial 000 – Police or Fire Brigade
Email sales@imtrade.com.au
Web site http://www.imtrade.com.au
Product Use: Agricultural insecticide for use as described on the product label.
Creation Date: **March, 2008**
This version issued: **First issue: March, 2008**
Product type: Active ingredient is an organophosphorus derivative.

SECTION 2 - HAZARDS IDENTIFICATION

Statement of Hazardous Nature

This product is classified as: Xi, Irritating. T, Toxic. N, Dangerous to the environment. Hazardous according to the criteria of ASCC.

Dangerous according to the Australian Dangerous Goods (ADG) Code.

Risk Phrases: R65, R23/24, R36/38, R50/53. Harmful: May cause lung damage if swallowed. Toxic by inhalation and in contact with skin. Irritating to eyes and skin. Very toxic to aquatic organisms, may cause long-term adverse effects to the aquatic environment.

Safety Phrases: S36, S38, S46, S60, S61, S24/25. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If swallowed, contact a doctor or Poisons Information Centre immediately and show this MSDS or label. This material and its container must be disposed of as hazardous waste. Avoid release to the environment. Refer to special instructions/Safety Data Sheets. Avoid contact with skin and eyes.

SUSDP Classification: S7

ADG Classification: Class 6.1: Toxic Substances.

UN Number: 3018, ORGANOPHOSPHORUS PESTICIDE, LIQUID, TOXIC

Emergency Overview

Physical Description & Colour: Clear yellow liquid.

Odour: Aromatic solvent odour.

Major Health Hazards: toxic by inhalation and in contact with skin, irritating to eyes and skin, if aspirated, may cause lung damage. Signs and symptoms associated with mild exposures to organophosphate and carbamate pesticides include: headache, fatigue, dizziness, loss of appetite with nausea, stomach cramps and diarrhoea; blurred vision associated with excessive tearing; contracted pupils of the eye; excessive sweating and salivation; slowed heartbeat, often fewer than 50 per minute; rippling of surface muscles just under the skin. These symptoms may be mistaken for those of flu, heat stroke or heat exhaustion, or upset stomach. Moderately severe organophosphate and carbamate insecticide poisoning cases exhibit all the signs and symptoms found in mild poisonings, but in addition, the victim: is unable to walk; often complains of chest discomfort and tightness; exhibits marked constriction of the pupils (pinpoint pupils); exhibits muscle twitching; has involuntary urination and bowel movement. Severe poisonings are indicated by incontinence, unconsciousness and seizures.

Potential Health Effects

See section 11 for Chronic exposure studies.

Contact with naphthalene can cause skin photosensitivity on contacted areas. Subsequent exposure to UV alpha rays in sunlight can cause sunburn in affected area.

Inhalation:

Short Term Exposure: Symptoms are described fully above.

MATERIAL SAFETY DATA SHEET

Issued by: Imtrade Australia Pty Ltd

Phone: (08) 9419 0333

Poisons Information Centre: 13 1126 from anywhere in Australia, (0800 764 766 in New Zealand)

Skin Contact:

Short Term Exposure: Symptoms are described fully above.

Eye Contact:

Short Term Exposure: This product is an eye irritant. Symptoms may include stinging and reddening of eyes and watering which may become copious. Other symptoms may also become evident. If exposure is brief, symptoms should disappear once exposure has ceased. However, lengthy exposure or delayed treatment may cause permanent damage.

Ingestion:

Short Term Exposure: Symptoms are described fully above.

Carcinogen Status:

ASCC: No significant ingredient is classified as carcinogenic by ASCC.

NTP: Naphthalene is classified by NTP as reasonably anticipated to be carcinogenic to humans.

See the NTP website for further details. A web address has not been provided as addresses frequently change.

IARC: Naphthalene is classed 2b IARC - possibly carcinogenic to humans.

See the IARC website for further details. A web address has not been provided as addresses frequently change.

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	CAS No	Conc,%	TWA (mg/m ³)	STEL (mg/m ³)
Fenamiphos	22224-92-6	400g/L	0.1	not set
Aromatic hydrocarbons	64742-94-5	227g/L	not set	not set
Naphthalene	91-20-3	<23g/L	52	79
Other non hazardous ingredients	secret	423g/L	not set	not set

This is a commercial product whose exact ratio of components may vary slightly. Minor quantities of other non hazardous ingredients are also possible.

The ASCC TWA exposure value is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week. The STEL (Short Term Exposure Limit) is an exposure value that may be equalled (but should not be exceeded) for no longer than 15 minutes and should not be repeated more than 4 times per day. There should be at least 60 minutes between successive exposures at the STEL. The term "peak" is used when the TWA limit, because of the rapid action of the substance, should never be exceeded, even briefly.

SECTION 4 - FIRST AID MEASURES**General Information:**

You should call The Poisons Information Centre if you feel that you may have been poisoned, burned or irritated by this product. The number is 13 1126 from anywhere in Australia (0800 764 766 in New Zealand) and is available at all times. Have this MSDS with you when you call.

Atropine tablets 0.6mg and activated charcoal should be available in the area where this product is used, or in a nearby unlocked medicine cabinet. If swallowed, splashed on skin or inhaled, contact a Poisons Information Centre or a doctor at once. Remove any contaminated clothing and wash skin thoroughly. If swallowed, use of activated charcoal may be advised. Give atropine if instructed. The usual instruction is to give one atropine tablet every 5 minutes until dryness of the mouth occurs.

Inhalation: If inhalation occurs, contact a Poisons Information Centre. Urgent hospital treatment is likely to be needed. Remove source of contamination or move victim to fresh air. If breathing is difficult, oxygen may be beneficial if administered by trained personnel, preferably on a doctor's advice. DO NOT allow victim to move about unnecessarily. Symptoms of pulmonary oedema can be delayed up to 48 hours after exposure. See instructions above about treatment with atropine.

Skin Contact: Flush contaminated area with lukewarm, gently flowing water for at least 20-30 minutes, by the clock. DO NOT INTERRUPT FLUSHING. If necessary, keep emergency vehicle waiting (show paramedics this MSDS and take their advice). Under running water, remove contaminated clothing, shoes and leather goods (eg watchbands and belts). If breathing has stopped, trained personnel should begin artificial respiration or, if the heart has stopped, cardiopulmonary resuscitation (CPR) immediately. See instructions above about treatment with atropine.

Eye Contact: Immediately flush the contaminated eye(s) with lukewarm, gently flowing water for 20 minutes or until the product is removed, while holding the eyelid(s) open. Take care not to rinse contaminated water into the unaffected eye or onto the face. Obtain medical attention immediately. Take special care if exposed person is wearing contact lenses.

Ingestion: If swallowed, do NOT induce vomiting; rinse mouth thoroughly with water and contact a Poisons Information Centre, or call a doctor at once. Give activated charcoal if instructed. See instructions above about treatment with atropine.

MATERIAL SAFETY DATA SHEET

SECTION 5 - FIRE FIGHTING MEASURES

Fire and Explosion Hazards: This product is classified as a C1 combustible product. There is little risk of an explosion from this product if commercial quantities are involved in a fire. Violent steam generation or eruption may occur upon application of direct water stream on hot liquids. Vapours from this product are heavier than air and may accumulate in sumps, pits and other low-lying spaces, forming potentially explosive mixtures. They may also flash back considerable distances.

Fire decomposition products from this product may be toxic if inhaled. Take appropriate protective measures.

Extinguishing Media: Suitable extinguishing media are carbon dioxide, dry chemical, foam, water fog. Water fog or fine spray is the preferred medium for large fires. Try to contain spills, minimise spillage entering drains or water courses.

Fire Fighting: If a significant quantity of this product is involved in a fire, call the fire brigade. There is little danger of a violent reaction or explosion if significant quantities of this product are involved in a fire. Recommended personal protective equipment is liquid-tight chemical protective clothing and breathing apparatus.

Flash point: 70-150°C

Upper Flammability Limit: 7.0%

Lower Flammability Limit: 0.6%

Autoignition temperature: No data.

Flammability Class: C1

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Accidental release: In the event of a major spill, prevent spillage from entering drains or water courses. Evacuate the spill area and deny entry to unnecessary and unprotected personnel. Wear full protective chemically resistant clothing including eye/face protection, gauntlets and self contained breathing apparatus. See below under Personal Protection regarding Australian Standards relating to personal protective equipment. Suitable materials for protective clothing include rubber, PVC. Eye/face protective equipment should include a full face shield. If there is a significant chance that vapours or mists are likely to build up in the cleanup area, we recommend that you use a respirator. It should be fitted with a type G cartridge, suitable for agricultural chemicals. Otherwise, not normally necessary. Stop leak if safe to do so, and contain spill. Absorb onto sand, vermiculite or other suitable absorbent material. If spill is too large or if absorbent material is not available, try to create a dike to stop material spreading or going into drains or waterways. Because of the toxicity of this product, special personal care should be taken in any cleanup operation. Sweep up and shovel or collect recoverable product into labelled containers for recycling or salvage, and dispose of promptly. Recycle containers wherever possible after careful cleaning. Refer to product label for specific instructions. After spills, wash area preventing runoff from entering drains. If a significant quantity of material enters drains, advise emergency services. Full details regarding disposal of used containers, spillage and unused material may be found on the label. If there is any conflict between this MSDS and the label, instructions on the label prevail. Ensure legality of disposal by consulting regulations prior to disposal. Thoroughly launder protective clothing before storage or re-use. Advise laundry of nature of contamination when sending contaminated clothing to laundry.

SECTION 7 - HANDLING AND STORAGE

Handling: Keep exposure to this product to a minimum, and minimise the quantities kept in work areas. Check Section 8 of this MSDS for details of personal protective measures, and make sure that those measures are followed. The measures detailed below under "Storage" should be followed during handling in order to minimise risks to persons using the product in the workplace. Also, avoid contact or contamination of product with incompatible materials listed in Section 10.

Storage: This product is a Scheduled Poison. Observe all relevant regulations regarding sale, transport and storage of this schedule of poison. Store in a cool, well ventilated area. Check containers periodically for leaks. Containers should be kept closed in order to minimise contamination. Make sure that the product does not come into contact with substances listed under "Incompatibilities" in Section 10. If you keep more than 2500kg or L of Dangerous Goods of Packaging Group II, you may be required to license the premises or notify your Dangerous Goods authority. If you have any doubts, we suggest you contact your Dangerous Goods authority in order to clarify your obligations. Check packaging - there may be further storage instructions on the label.

SECTION 8 - EXPOSURE CONTROLS AND PERSONAL PROTECTION

The following Australian Standards will provide general advice regarding safety clothing and equipment:

Respiratory equipment: **AS/NZS 1715**, Protective Gloves: **AS 2161**, Industrial Clothing: **AS2919**, Industrial Eye Protection: **AS1336** and **AS/NZS 1337**, Occupational Protective Footwear: **AS/NZS2210**.

ASCC Exposure Limits	TWA (mg/m³)	STEL (mg/m³)
Fenamiphos	0.1	not set
Naphthalene	52	79

MATERIAL SAFETY DATA SHEET

The ADI for Fenamiphos is set at 0.0001mg/kg/day. The corresponding NOEL is set at 0.014mg/kg/day. ADI means Acceptable Daily Intake and NOEL means No-observable-effect-level. Values taken from Australian ADI List, Dec 2006.

No special equipment is usually needed when occasionally handling small quantities. The following instructions are for bulk handling or where regular exposure in an occupational setting occurs without proper containment systems.

Ventilation: This product should only be used where there is ventilation that is adequate to keep exposure below the TWA levels. If necessary, use a fan.

Eye Protection: Protective glasses or goggles should be worn when this product is being used. Failure to protect your eyes may cause them harm. Emergency eye wash facilities are also recommended in an area close to where this product is being used.

Skin Protection: It is essential that all skin areas are adequately covered by impermeable gloves, overalls, hair covering, apron and face shield. See below for suitable material types.

Protective Material Types: We suggest that protective clothing be made from the following: rubber, PVC.

Respirator: Usually, no respirator is necessary when using this product. However, if you have any doubts consult the Australian Standard mentioned above. Otherwise, not normally necessary.

Eyebaths or eyewash stations and safety deluge showers should be provided near to where product is being used.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES:

Physical Description & colour:	Clear yellow liquid.
Odour:	Aromatic solvent odour.
Boiling Point:	Not available.
Freezing/Melting Point:	No specific data. Liquid at normal temperatures.
Volatiles:	No specific data. Expected to be low at 100°C.
Vapour Pressure:	0.3kPa at 38°C (hydrocarbon solvent)
Vapour Density:	>1 (hydrocarbon solvent)
Specific Gravity:	1.07 approx
Water Solubility:	Emulsifiable.
pH:	5.0-6.0 (1% in water)
Volatility:	No data.
Odour Threshold:	No data.
Evaporation Rate:	No data.
Coeff Oil/water Distribution:	No data
Autoignition temp:	No data.

SECTION 10 - STABILITY AND REACTIVITY

Reactivity: This product is unlikely to react or decompose under normal storage conditions. However, if you have any doubts, contact the supplier for advice on shelf life properties.

Conditions to Avoid: Store in the closed original container in a dry, cool, well-ventilated area out of direct sunlight.

Incompatibilities: strong acids, strong bases, strong oxidising agents.

Fire Decomposition: Carbon dioxide, and if combustion is incomplete, carbon monoxide and smoke. Nitrogen and its compounds, and under some circumstances, oxides of nitrogen. Occasionally hydrogen cyanide gas in reducing atmospheres. Oxides of sulfur (sulfur dioxide is a respiratory hazard) and other sulfur compounds. Most will have a foul odour. Oxides of phosphorus and other phosphorus compounds. Water. Carbon monoxide poisoning produces headache, weakness, nausea, dizziness, confusion, dimness of vision, disturbance of judgment, and unconsciousness followed by coma and death.

Polymerisation: Polymerisation reactions are unlikely; they are not expected to occur.

SECTION 11 - TOXICOLOGICAL INFORMATION

Local Effects:

Target Organs: There is no data to hand indicating any particular target organs.

Chronic toxicity: A number of long-term feeding studies have been conducted with this compound on several different species of animals. In dogs, dietary doses of 0.0125 to 0.25 mg/kg/day over 2 years produced depressions in cholinesterase activity at middle doses and above. No effects were noted in the liver or in blood chemistry even at the highest dose. Rats exposed to 1.5 mg/kg/day over 2 years experienced increases in thyroid gland and lung weights in females, and increased heart weight in males. There were no organ weight changes noted in the rats at doses below 0.5 mg/kg/day. Brain weights have also been affected by exposure to moderate amounts of the compound. Two studies have been conducted on the potential risk to pesticide workers (loaders and applicators) from the use of Nemacur. One study concluded that occupational exposure levels were more than 100 times lower than the level which causes cholinesterase inhibition in animals and thus the use of the compound did not pose a significant risk to the users. Another study concluded that the main threat to applicators was through the skin on the hands. However,

MATERIAL SAFETY DATA SHEET

the levels of exposure on the hands were significantly below the level that had caused chronic toxicity in mice. It was concluded that the pesticide could be used safely.

Reproductive effects: Both male and female rats fed moderate to high doses of Fenamiphos (0.15 to 1.5 mg/kg/day) over three generations showed no compound-related reproductive effects at the middle doses tested (0.5 mg/kg/day). At the higher doses the second generation of pups showed a decrease in body weight gain. This effect was not seen in the third generation. It is unlikely that this compound would cause reproductive effects in humans.

Teratogenic effects: A single study of pregnant rats fed Fenamiphos during gestation over a range of doses (up to 1 mg/kg/day) showed a decrease in the maternal weight at doses of 0.3 mg/kg/day and above. At the highest dose a higher number of the pups from the exposed group had died relative to the unexposed controls, and the pups which survived had decreased weights. In tests with pregnant rabbits fed up to 0.4 mg/kg, no birth defects were noted. However, another reference stated that teratogenic studies were positive in rabbits, though the effects in the offspring were induced at doses much higher than those that cause maternal toxicity. The results from these studies suggest that teratogenic effects in humans are unlikely.

Mutagenic effects: A number of studies evaluating the mutagenic potential of Fenamiphos have all shown the compound to be nonmutagenic. The test subjects included bacterial cells and male mice.

Carcinogenic effects: Two studies, one conducted with mice and the other with rats, indicated that Fenamiphos is not carcinogenic. One study was conducted for 1 1/2 years at very high levels (up to 7.5 mg/kg/day in mice) and the other study was conducted over 2 years (up to 1.5 mg/kg/day in rats).

Organ toxicity: Target organs identified in studies of test animals and exposed workers are the central nervous system, heart, lungs, and thyroid.

Fate in humans and animals: Fenamiphos is readily absorbed through the digestive tract and lungs. One study placed the amount absorbed near 95% of the ingested dose. The compound is rapidly broken down within the organism, and the by-products are excreted in the urine. The majority of a dose was recovered in urine within 15 hours after treatment.

Classification of Hazardous Ingredients

Ingredient	Risk Phrases
Fenamiphos	Conc>=25%: T+; R28; R24
Aromatic Hydrocarbons	Conc>=10%: Xn; R65

SECTION 12 - ECOLOGICAL INFORMATION

Very toxic to aquatic organisms, may cause long-term adverse effects to the aquatic environment. This product is biodegradable. It will not accumulate in the soil or water or cause long term problems.

Effects on birds: Fenamiphos is very highly toxic to birds, with a reported acute oral LD₅₀ for the most sensitive species tested, the ring-necked pheasant, of 0.5 mg/kg. LD₅₀ values for other species range from 1.0 to 2.4 mg/kg, all of which indicate that this is a very highly toxic compound. In a controlled experiment, Fenamiphos was determined to be the most toxic of thirteen different cholinesterase inhibitors. In tests with wild songbirds (red-winged blackbirds and house sparrows) an unspecified dose of NemaCur was highly toxic to these species, with death of the birds occurring within an hour of eating the granules.

Effects on aquatic organisms: The toxicity of Fenamiphos to aquatic species varies from moderate to high. Bluegill sunfish are extremely sensitive to the presence of the compound. The LC₅₀ for Fenamiphos is 9.6 mg/L in this species. Other species tested include the rainbow trout (LC₅₀ is 0.11 mg/L) and the goldfish (LC₅₀ is 3.2 mg/L). The compound is not expected to bioaccumulate appreciably in aquatic organisms.

Effects on other organisms: Fenamiphos is practically nontoxic to honeybees.

Environmental Fate:

Breakdown in soil and groundwater: Fenamiphos is moderately persistence in the soil environment, with a reported soil half-life of about 50 days. It appears to have no effect on the activity of soil bacteria. Aerobic processes are most important for breakdown of the compound. Fenamiphos is not strongly adsorbed to soils, but neither it nor its breakdown products have been found in over 1200 wells tested in six states in USA.

Breakdown in water: Fenamiphos disappears quickly from water in acidic and alkaline water, but it is stable in neutral water when held in the dark. The compound, when in the presence of artificial light, disappears very rapidly. In a neutral solution, half of the initial amount of the compound degraded within 4 hours.

Breakdown in vegetation: In plants, the compound is absorbed through the roots and translocated to the leaves. It is broken down within the plant. The products of its breakdown are relatively persistent and can also inhibit cholinesterase.

SECTION 13 - DISPOSAL CONSIDERATIONS

Disposal: Special help is available for the disposal of Agricultural Chemicals. The product label will give general advice regarding disposal of small quantities, and how to cleanse containers. However, for help with the collection of unwanted rural chemicals, contact ChemClear 1800 008 182 <http://www.chemclear.com.au/> and for help with the disposal of empty drums, contact DrumMuster <http://www.drummuster.com.au/> where you will find contact details for your area.

MATERIAL SAFETY DATA SHEET

SECTION 14 - TRANSPORT INFORMATION**ADG Code:** 3018, ORGANOPHOSPHORUS PESTICIDE, LIQUID, TOXIC**Hazchem Code:** 2X**Special Provisions:** 61, 274**Limited quantities:** ADG 7 specifies a Limited Quantity value of 100 ml for this class of product.**Dangerous Goods Class:** Class 6.1: Toxic Substances.**Packaging Group:** II**Packaging Method:** P001, IBC02

Class 6 Toxic Substances shall not be loaded in the same vehicle or packed in the same freight container with Classes 1 (Explosives), 3 (Flammable Liquids where the Flammable Liquid is nitromethane), 5.1 (Oxidising Agents where the Toxic Substances are Fire Risk Substances), 5.2 (Organic Peroxides where the Toxic Substances are Fire Risk Substances), 8 (Corrosive Substances where the Toxic Substances are cyanides and the Corrosives are acids), Foodstuffs and foodstuff empties. They may however be loaded in the same vehicle or packed in the same freight container with Classes, 2.1 (Flammable Gases), 2.2 (Non-Flammable, Non-Toxic Gases), 2.3 (Toxic Gases), 3 (Flammable liquids, except where the flammable liquid is nitromethane), 4.1 (Flammable Solids), 4.2 (Spontaneously Combustible Substances), 4.3 (Dangerous When Wet Substances), 5.1 (Oxidising Agents except where the Toxic Substances are Fire Risk Substances), 5.2 (Organic Peroxides except where the Toxic Substances are Fire Risk Substances), 7 (Radioactive Substances), 8 (Corrosive Substances except where the Toxic Substances are cyanides and the Corrosives are acids), 9 (Miscellaneous Dangerous Goods)

SECTION 15 - REGULATORY INFORMATION**AICS:** All of the significant ingredients in this formulation are compliant with NICNAS regulations.

The following ingredients: Fenamiphos, Liquid hydrocarbons, Naphthalene, are mentioned in the SUSDP.

SECTION 16 - OTHER INFORMATION**This MSDS contains only safety-related information. For other data see product literature.****Acronyms:****ADG Code** Australian Code for the Transport of Dangerous Goods by Road and Rail (7th edition)**AICS** Australian Inventory of Chemical Substances**ASCC** Office of the Australian Safety and Compensation Council**CAS number** Chemical Abstracts Service Registry Number**Hazchem Code** Emergency action code of numbers and letters that provide information to emergency services especially firefighters**IARC** International Agency for Research on Cancer**NOS** Not otherwise specified**NTP** National Toxicology Program (USA)**R-Phrase** Risk Phrase**SUSDP** Standard for the Uniform Scheduling of Drugs & Poisons**UN Number** United Nations Number

This MSDS summarises our best knowledge of the health and safety hazard information on 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. If clarification or further information is needed to ensure that an appropriate risk assessment can be made the user should contact Imtrade Australia Pty Ltd, or in the event of an emergency, 000. Our responsibility for products sold is subject to our standard terms and conditions, a copy of which is sent to our customers and is also available on request.

Please read all labels carefully before using product.

This MSDS is prepared in accord with the ASCC document "National Code of Practice for the Preparation of Material Safety Data Sheets" 2nd Edition [NOHSC:2011(2003)]

Copyright © Kilford & Kilford Pty Ltd, March, 2008.

<http://www.kilford.com.au/> Phone (02)9251 4532

End of Report

MATERIAL SAFETY DATA SHEET