

Section 1 - Identification of Chemical Product and Company

Farmoz Pty Ltd, Suite 1, Level 4, Building B
207 Pacific Highway, St Leonards, NSW 2068
ACN 050 328 973

Telephone (02)9431 7800 (24 hours)

Fax (02)9431 7700

Substance: Amitraz is an amidine derivative.
Trade Name: Farmoz Amitraz Elite EC/ULV Insecticide
Product Use: Agricultural insecticide for use as described on the product label.
Creation Date: **March, 2003**
Revision Date: **June, 2008**

Section 2 - Hazards Identification

Statement of Hazardous Nature

This product is classified as: Hazardous according to the criteria of ASCC Australia.

Not a Dangerous Good according to the Australian Dangerous Goods (ADG) Code.

Risk Phrases: R65, R20/21/22, R36/38. Harmful: May cause lung damage if swallowed. Harmful by inhalation, in contact with skin, and if swallowed. Irritating to eyes and skin.

Safety Phrases: S20, S38, S46, S24/25. When using, do not eat or drink. In case of insufficient ventilation, wear suitable respiratory equipment. If swallowed, contact a doctor or Poisons Information Centre immediately and show this container or label. Avoid contact with skin and eyes.

SUSDP Classification: S6

ADG Classification: None allocated. Not a Dangerous Good.

UN Number: None allocated

Emergency Overview

Physical Description & colour: Pale yellow liquid.

Odour: Mild aromatic odour.

Major Health Hazards: Signs of acute Amitraz poisoning in male and female rats treated with 440 mg/kg and 365 mg/kg respectively, include coolness to touch, reduced spontaneous activity, episodes of increased induced activity such as aggression in response to handling, and signs of general debilitation. Harmful by inhalation, in contact with skin, and if swallowed, irritating to eyes and skin, if aspirated, may cause lung damage.

Potential Health Effects

See section 11 for Chronic exposure studies.

Inhalation

Short term exposure: Available data shows that this product is harmful, but symptoms are not available. In addition product may be mildly irritating, although unlikely to cause anything more than mild transient discomfort.

Skin Contact:

Short term exposure: Available data shows that this product is harmful, but symptoms are not available. In addition product is a skin irritant. Symptoms may include itchiness and reddening of contacted skin. Other symptoms may also become evident, but all should disappear once exposure has ceased.

Eye Contact:

Short term exposure: Available data shows that this product is not harmful. However 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: Because of the low viscosity of this product, it may directly enter the lungs if swallowed, or if subsequently vomited. Once in the lungs, it is very difficult to remove and can cause severe injury or death. This product is unlikely to cause any irritation problems in the short or long term.

MATERIAL SAFETY DATA SHEET

Carcinogen Status:

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

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

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

Section 3 - Composition/Information on Ingredients

Ingredients	CAS No	Conc,%	TWA (mg/m ³)	STEL (mg/m ³)
Amitraz	33089-61-1	20	not set	not set
N-Methyl-2-pyrrolidone	872-50-4	5	103	309
Non hazardous liquid hydrocarbon	secret	to 100	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 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 should not be exceeded for more than 15 minutes and should not be repeated for 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.

Inhalation: If symptoms of poisoning become evident, contact a Poisons Information Centre, or call a doctor at once. 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.

Skin Contact: If significant skin contact occurs, wash gently and thoroughly with water (use non-abrasive soap if necessary) for 10 minutes or until chemical is removed. Under running water, remove contaminated clothing, shoes and leather goods (e.g. watchbands and belts). Contact a Poisons Information Centre, or call a doctor.

Eye Contact: Quickly and gently blot or brush away product. Immediately flush the contaminated eye(s) with lukewarm, gently flowing water until the product is removed or until a few minutes after irritation has ceased, while holding the eyelid(s) open. Take care not to rinse contaminated water into the unaffected eye or onto the face. Obtain medical advice if irritation becomes painful or lasts more than a few minutes.

Ingestion: If swallowed, do NOT induce vomiting. Wash mouth with water and contact a Poisons Information Centre, or call a doctor.

Section 5 - Fire Fighting Measures

Fire and Explosion Hazards: This product is classified as a C1 combustible product. There is a slight 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: Preferred extinguishing media are carbon dioxide, dry chemical, foam, water fog.

Fire Fighting: When fighting fires involving significant quantities of this product, wear a splash suit complete with self contained breathing apparatus.

Flash point: 63°C

Upper Flammability Limit: No data.

Lower Flammability Limit: No data.

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 clothing including face mask, face shield and gauntlets. All skin areas should be covered. See above under Personal Protection regarding Australian Standards relating to personal protective equipment. Suitable materials for protective clothing include

MATERIAL SAFETY DATA SHEET

rubber, PVC. 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. Sweep up and shovel or collect recoverable product into labelled containers for recycling or salvage, and dispose of promptly. 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: Note that this product is combustible and therefore, for Storage, meets the definition of Dangerous Goods in some states. We suggest you consult your state's Dangerous Goods laws in order to clarify your obligations regarding the storage of this product.

Make sure that containers of this product are kept tightly closed. Keep containers of this product in a well ventilated area. Make sure that the product does not come into contact with substances listed under "Materials to avoid" in Section 10. Some liquid preparations settle or separate on standing and may require stirring before use. 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**.

Exposure Limits	TWA (mg/m³)	STEL (mg/m³)
N-Methyl-2-pyrrolidone	103	309

The ADI for Amitraz is set at 0.002mg/kg/day. The corresponding NOEL is set at 0.25mg/kg/day. ADI means Acceptable Daily Intake and NOEL means No-observable-effect-level. Values taken from Australian ADI List, Dec 2002.

Ventilation: No special ventilation requirements are normally necessary for this product. However make sure that the work environment remains clean and that dusts and vapours are minimised.

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: Prevent skin contact by wearing impervious gloves, clothes and, preferably, apron. Make sure that all skin areas are covered. See below for suitable material types.

Protective Material Types: We suggest that protective clothing be made from the following materials: 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 this product is being used.

Section 9 - Physical and Chemical Properties:

Physical Description & colour:	Pale yellow liquid.
Odour:	Mild aromatic 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:	No data.
Vapour Density:	No data.
Specific Gravity:	1.01 at 20°C
Water Solubility:	Emulsifiable.
pH:	No data.

MATERIAL SAFETY DATA SHEET

Volatility:	No data.
Evaporation Rate:	No data.
Coeff Oil/water distribution:	5.5 (25°C, pH 5.8) (log P octanol/water)
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: This product should be kept in a cool place, preferably below 30°C. Containers should be kept dry.

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. Water.

Carbon monoxide poisoning produces headache, weakness, nausea, dizziness, confusion, dimness of vision, disturbance of judgment, and unconsciousness followed by coma and death. Hydrogen cyanide poisoning signs and symptoms are weakness, dizziness, headache, nausea, vomiting, coma, convulsions, and death. Death results from respiratory arrest. Hydrogen cyanide gas acts very rapidly; symptoms and death can both occur quickly.

Polymerisation: This product is unlikely to undergo polymerisation processes.

Section 11 - Toxicological Information

Toxicity: Acute Toxicity: Amitraz is harmful to mammals if ingested orally. The oral LD₅₀ is 523-800 mg/kg for Amitraz in rats. The oral LD₅₀ is greater than 1,600 mg/kg for mice. Dermal exposure results in an LD₅₀ of greater than 1,600 mg/kg for rats and greater than 200 mg/kg for rabbits. The inhalation LC₅₀ (6 hours) of Amitraz for rats is 65 mg/l of air. Amitraz is not a skin irritant and does not sensitize skin. Signs of acute Amitraz poisoning in male and female rats treated with 440 mg/kg and 365 mg/kg respectively, include coolness to touch, reduced spontaneous activity, episodes of increased induced activity such as aggression in response to handling, and signs of general debilitation. Amitraz also may produce a slowly reversible emaciation in survivors.

Chronic Toxicity: In two-year feeding trials, rats who received 50 mg/kg/day in their diet and dogs who received 0.25 mg/kg/day of Amitraz did not show any ill-effects.

Reproductive Effects: Doses of 200 mg/kg/day of Amitraz for ten weeks decreased fertility in male and female rats. Female mice treated orally for 5 days with 50 mg/kg/day of Amitraz and then mated showed a slight increase in loss of foetuses and a decrease in the number of living offspring. When male mice were given 50 mg/kg/day of Amitraz orally for 5 days and then mated, the resulting embryos were significantly less likely to grow in the mother's uterus. Female mice who received 400 mg/kg/day of Amitraz in their diet for up to 33 weeks, showed a significant increase in the time they were sexually receptive. The highest dose of Amitraz which has no observable effect on the death of unborn rats (foetotoxic NOEL) is 3 mg/kg/day. The highest dose of Amitraz that does not cause an observable effect in the death of rat embryos (Embryotoxic NOEL) is 5 mg/kg/day. Rats who received 12 mg/kg/day of Amitraz from day one of pregnancy until the young were weaned at 21 days old had a reduced number of young born and alive at day four. Rabbits who received 25 mg/kg/day of Amitraz from days 6 to 18 of pregnancy had fewer and smaller litters. Although there have been reproductive effects observed in laboratory animals at some dose levels, likely human exposures are very much less than those which produced effects. These effects are unlikely in humans under normal circumstances.

Teratogenic Effects: In one study, rats treated with 12 mg/kg/day of Amitraz from days 8 to 20 of pregnancy, the offspring were heavier but had less bone development than the offspring of untreated rats. However, an EPA study indicates that the highest dose at which Amitraz has no observable effect on test rats' offspring (teratogenic NOEL) is 12 mg/kg/day. The teratogenic NOEL of rabbits is 25 mg/kg/day. These studies indicate that high doses of Amitraz exposure during pregnancy produced adverse effects in laboratory animals. Likely human exposures are very much less than those which produced effects, and these effects are unlikely in humans under normal circumstances.

Mutagenic Effects: A variety of tests indicate that Amitraz is not mutagenic and does not cause damage to DNA.

Carcinogenic Effects: Long term feeding studies show that Amitraz is not carcinogenic in rats. However, it can cause tumors in female mice. Amitraz causes an increase in tumors of the lungs and lymph nodes in female mice, but not males, at 57 mg/kg/day over 20 months. A two-year study of female mice also showed an increase in tumors of the liver (hepatocellular tumors) at 57 mg/kg/day of Amitraz). Because Amitraz causes cancer in female mice, but not male mice or male or female rats, it is unclassifiable as to human carcinogenicity.

Organ Toxicity: At high doses, Amitraz can reduce the function of the hypothalamus, which helps regulate the metabolism by controlling hormone release in the body. A daily dose of 200 mg of Amitraz per kilogram of body weight for ten weeks causes decreased growth and food consumption.

Fate in Humans and Animals: Available data suggest that Amitraz, following absorption into the blood, is not readily absorbed into tissues, and is mostly excreted unchanged via the urine).

MATERIAL SAFETY DATA SHEET

Section 12 - Ecological Information

Effects on Birds: Amitraz is slightly toxic to birds. The dietary LC₅₀ (8 day) is 7,000 mg/kg for mallard ducks and 1,800 mg/kg for Japanese quail. The oral LD₅₀ for bobwhite quail is 788 mg/kg. Amitraz may affect reproduction in birds. The avian reproduction NOEL is less than 40 ppm.

Effects on Aquatic Organisms: Amitraz is moderately toxic to fish. The LC₅₀ (96-hour exposure) is 1.3 mg/l for bluegill sunfish and 3.2-4.2 mg/l for harlequin fish. For a 48-hour exposure of rainbow trout, a cold water species, the LC₅₀ is 2.7-4.0 mg/l. Daphnia, a fresh water invertebrate, exhibited toxic effects at 35 ppb of Amitraz in water.

Effects on Other Animals (Nontarget species): Amitraz is relatively non-toxic to bees. The LD₅₀ is 12 µg per bee by ingestion and 3.6 mg/l by direct spraying.

ENVIRONMENTAL FATE

Breakdown of Chemical in Soil: Amitraz is broken down rapidly in soil containing oxygen. The half-life in soil, the amount of time needed for the chemical to degrade to half its original concentration, is less than one day. Degradation occurs more rapidly in acidic soils than in alkaline or neutral soils.

Breakdown of Chemical in Vegetation: Reports indicate that Amitraz may cause crop injury to young peppers and pears during high temperature conditions.

Section 13 - Disposal Considerations

Disposal: Instructions concerning the disposal of this product and its containers are given on the product label. These should be carefully followed. 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.

Section 14 - Transport Information

ADG Code: This product is not classified as a Dangerous Good. No special transport conditions are necessary unless required by other regulations.

Section 15 - Regulatory Information

AICS: All of the significant ingredients in this formulation are to be found in the public AICS Database.

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
CAS number	Chemical Abstracts Service Registry Number
IARC	International Agency for Research on Cancer
ASCC	Office of the Australian Safety and Compensation Council
NTP	National Toxicology Program (USA)
R-Phrase	Risk Phrase
SUSDP	Standard for the Uniform Scheduling of Drugs & Poisons
UN Number	United Nations Number

Contact Points:

Call Farmoz on (02)9431 7800

Fax: (02)9431 7700 and ask for the technical manager.

**Police and Fire Brigade:
Emergency contact:**

**Dial 000
1800 024 973 (24 hours)**

If ineffective:

**Dial Poisons Information Centre
(13 1126 from anywhere in Australia)**

The information contained in this Material Safety Data Sheet is provided in good faith and is believed to be correct at the date hereof. However, it is expected that individuals receiving the information will exercise their independent judgement in determining its appropriateness for a particular purpose. Farmoz Pty Ltd makes no representation as to the accuracy or comprehensiveness of the information and to the full extent allowed by law excludes all liability whatsoever, whether with respect to negligence or otherwise, for any loss or damage arising from or connection with the supply or use of the information in this Material Safety Data Sheet.

Please read all labels carefully before using product.

MATERIAL SAFETY DATA SHEET

Issued by: Farmoz Pty Ltd

Phone: (02)9431 7800

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



This MSDS copyright © Kilford & Kilford Pty Ltd, June, 2008.

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

MATERIAL SAFETY DATA SHEET