# SAFETY DATA SHEET

## HY-MAL INSECTICIDE

**Infosafe No.: 3NUZE**
**ISSUED Date : 20/05/2022**
**ISSUED by: NUFARM AUSTRALIA LIMITED.**

## Section 1 - Identification

**Product Identifier**
HY-MAL INSECTICIDE

**Product Code**
1306

**Product Type**
Group 1B Insecticide

**Company Name**
NUFARM AUSTRALIA LIMITED. (ABN 80 004 377 780)

**Address**
103-105 Pipe Road Laverton North
Victoria 3026 AUSTRALIA

**Telephone/Fax Number**
Tel: +61 3 9282-1000
Fax: +61 3 9282-1001

**Emergency Phone Number**
1800 033 498 (24hr Australia)

**Emergency Contact Name**
www.nufarm.com.au

**E-mail Address**
SDSANZ@nufarm.com

**Recommended use of the chemical and restrictions on use**
This product controls adult mosquitoes, Queensland fruit fly and chewing and sucking insect pests of citrus, grape vines, lucerne, oilseed crops, ornamentals, pastures, peas, pome and stone fruits, rice, tobacco and vegetables as per the Directions for Use table on the label.

**Additional Information**
This Safety Data Sheet describes the properties of the concentrated product.
The physical properties and the assessments may not apply to the properties of the product once it has been diluted for application.

## Section 2 - Hazard(s) Identification

**GHS classification of the substance/mixture**
Classified as Hazardous according to the Globally Harmonised System of Classification and labelling of Chemicals (GHS) including Work, Health and Safety regulations, Australia.
Complies with the requirements of Special Provision AU01 and therefore exempted from being classified as Dangerous Goods according to the Australian Code for the Transport of Dangerous Goods by Road and Rail. (7th edition)
Classified as Dangerous Goods according to International Maritime Dangerous Goods Code (IMDG) and International Air Transport Association (IATA).
Acute toxicity: Category 4 - Oral
Sensitisation - skin: Category 1
Hazardous to the Aquatic Environment - Acute Hazard: Category 1
Hazardous to the Aquatic Environment - Long-Term Hazard: Category 1

**Signal Word (s)**
WARNING

**Hazard Statement (s)**
H302 Harmful if swallowed.
H317 May cause an allergic skin reaction.
H410 Very toxic to aquatic life with long lasting effects.

**Pictogram (s)**
Exclamation mark,Environment

**Precautionary Statement – Prevention**
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P272 Contaminated work clothing should not be allowed out of the workplace.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

**Precautionary Statement – Response**
P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
P330 Rinse mouth.
P302+P352 IF ON SKIN: Wash with plenty of water.
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
P362+P364 Take off contaminated clothing and wash it before reuse.
P391 Collect spillage.

**Precautionary Statement – Disposal**
P501 Dispose of contents/container to to an approved waste disposal plant.

## Section 3 - Composition and Information on Ingredients

**Ingredients**

| Name | CAS | Proportion |
|---|---|---|
| malathion (ISO) | 121-75-5 | 90-100 % |
| Emulsifiers | | 0-10 % |

## Section 4 - First Aid Measures

**Inhalation**
If inhaled, remove affected person from contaminated area. Keep at rest until recovered. If symptoms develop and/or persist seek medical attention.

**Ingestion**
Do not induce vomiting. Wash out mouth thoroughly with water. Seek immediate medical attention.

**Skin**
Remove all contaminated clothing immediately. Wash affected area thoroughly with soap and water. Wash contaminated clothing before reuse or discard. Seek medical attention.

**Eye**
If in eyes, hold eyelids apart and flush the eyes continuously with running water. Remove contact lenses. Continue flushing for several minutes until all contaminants are washed out completely. If symptoms develop and/or persist seek medical attention.

**First Aid Facilities**
Eyewash and normal washroom facilities.

**Advice to Doctor**
An anticholinesterase compound. Artificial respiration should be started at the first sign of respiratory failure. Cautious administration of fluids is advised, as well as general supportive and symptomatic pharmacological treatment and absolute rest. As early as possible, administer 2 mg of atropine sulfate i.v. and 1000-2000 mg of pralidoxime chloride or 250 mg of obidoxime chloride (adult dose) i.v. to patients suffering from severe respiratory difficulties, convulsions, and unconsciousness. Repeated doses of 2 mg of atropine sulfate should be given, as required, based on the respiration, blood pressure, pulse frequency, salivation, and convulsion conditions. The dose and the frequency of atropine varies with each patient, but the patient should remain fully atropinised (signs include dilated pupils, dry mouth, skin flushing). Diazepam should be given in all but the mildest cases in doses of 10 mg, s.c. or i.v., which may be repeated as required. For children, the doses are 0.04-0.08 mg of atropine/kg body weight, 250 mg of pralidoxime chloride per child, or 4-8 mg of obidoxime chloride/kg body weight. Morphine, barbiturates, phenothiazine derivatives, tranquillizers, and all kinds of central stimulants are contraindicated.

**Other Information**
For advice in an emergency, contact a Poisons Information Centre (Phone Australia 131 126) or a doctor at once.

## Section 5 - Firefighting Measures

**Suitable Extinguishing Media**
Water fog, foam, carbon dioxide or dry chemical.

**Hazards from Combustion Products**
Under fire conditions this product may emit toxic and/or irritating fumes, smoke and gases, including carbon monoxide, carbon dioxide, oxides of sulfur, oxides of phosphorus and possibly dimethyl sulfide.

**Specific hazards arising from the chemical**
This product will burn if exposed to fire.

**Decomposition Temperature**
Not available

**Precautions in connection with Fire**
Fire fighters should wear Self-Contained Breathing Apparatus (SCBA) operated in positive pressure mode and full protective clothing to prevent exposure to vapours or fumes. Water spray may be used to cool down heat-exposed containers. Fight fire from safe location. This product should be prevented from entering drains and watercourses.

## Section 6 - Accidental Release Measures

**Emergency Procedures**
Wear appropriate personal protective equipment and clothing to prevent exposure. Extinguish or remove all sources of ignition and stop leak if safe to do so. Increase ventilation. Evacuate all unprotected personnel. If possible contain the spill. Place clay, sand, soil or proprietary absorbent (such as vermiculite) onto spillage. Use clean non-sparking tools to collect the material and place into suitable labelled containers for subsequent recycling or disposal. Dispose of waste according to the applicable local and national regulations. If contamination of sewers or waterways occurs inform the local water and waste management authorities in accordance with local regulations.

## Section 7 - Handling and Storage

**Precautions for Safe Handling**
Avoid inhalation of vapours and mists, and skin or eye contact. Use only in a well ventilated area. Keep containers sealed when not in use. Prevent the build up of mists or vapours in the work atmosphere. Do not use near ignition sources. Do not pressurise, cut, heat or weld containers as they may contain hazardous residues. Maintain high standards of personal hygiene by washing hands prior to eating, drinking, smoking or using toilet facilities.

**Conditions for safe storage, including any incompatibilities**
Store in a cool, dry, well-ventilated area away from sources of ignition, foodstuffs, clothing and incompatible materials such as oxidising agents. Ideally, the product should be stored at temperatures below 30°C. Properties of the product may change if stored above this temperature for extended periods. Keep containers closed when not in use, securely sealed and protected against physical damage. Inspect regularly for deficiencies such as damage or leaks. Have appropriate fire extinguishers available in and near the storage area. Take precautions against static electricity discharges. Use proper grounding procedures. Ensure that storage conditions comply with applicable local and national regulations. For information on the design of the storeroom, reference should be made to Australian Standard AS1940 - The storage and handling of flammable and combustible liquids.

**Storage Regulations**
Classified as a Class C2 (COMBUSTIBLE LIQUID) for the purpose of storage and handling, in accordance with the requirements of AS1940.

## Section 8 - Exposure Controls and Personal Protection

**Occupational exposure limit values**
No exposure standards have been established for this material. However, the available exposure limits for ingredients are listed
Malathion:

TWA: 10 mg/m³
NOTE: Sk; Sen

TWA (Time Weighted Average): The average airborne concentration of a particular substance when calculated over a normal eight-hour working day, for a five-day week.

'Sk' Notice: Absorption through the skin may be a significant source of exposure. The exposure standard is invalidated if such contact should occur.

'Sen' Notice: The substance may cause sensitisation by skin contact or by inhalation.

Source: Safe Work Australia

**Biological Monitoring**
No biological limits allocated.

**Control Banding**
Not available

**Engineering Controls**
This substance is hazardous and should be used with a local exhaust ventilation system, drawing vapours away from workers' breathing zone. A flame-proof exhaust ventilation system is required. If the engineering controls are not sufficient to maintain concentrations of vapours/mists below the exposure standards, suitable respiratory protection must be worn. Refer to relevant regulations for further information concerning ventilation requirements.

**Respiratory Protection**
If engineering controls are not effective in controlling airborne exposure then an approved respirator with a replaceable vapor/mist filter should be used. Refer to relevant regulations for further information concerning respiratory protective requirements. Reference should be made to Australian Standards AS/NZS 1715, Selection, Use and Maintenance of Respiratory Protective Devices; and AS/NZS 1716, Respiratory Protective Devices, in order to make any necessary changes for individual circumstances.

**Eye and Face Protection**
Safety glasses with side shields, chemical goggles or full-face shield as appropriate should be used. Final choice of appropriate eye/face protection will vary according to individual circumstances. Eye protection devices should conform to relevant regulations. Eye protection should conform with Australian/New Zealand Standard AS/NZS 1337 (series) - Eye Protectors for Industrial Applications.

**Hand Protection**
Wear gloves of impervious material such as elbow-length PVC gloves. Final choice of appropriate gloves will vary according to individual circumstances. i.e. methods of handling or according to risk assessments undertaken. Occupational protective gloves should conform to relevant regulations.
Reference should be made to AS/NZS 2161.1: Occupational protective gloves - Selection, use and maintenance.

**Thermal Hazards**
No further relevant information available.

**Body Protection**
Suitable protective workwear, e.g. cotton overalls buttoned at neck and wrist and a washable hat is recommended. Chemical resistant apron is recommended where large quantities are handled.

**Hygiene Measures**
After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water. After each day's use, wash contaminated clothing and safety equipment.

**Special Protective Measures**
People who use pesticides in their job or business should have training in the application of the materials.

## Section 9 - Physical and Chemical Properties

| Properties | Description | Properties | Description |
|---|---|---|---|
| **Form** | Liquid | **Appearance** | Clear amber liquid. |
| **Colour** | Amber | **Odour** | Mild aromatic odour. |
| **Melting Point** | 3°C | **Boiling Point** | Decomposes >100°C |
| **Decomposition Temperature** | Not available | **Solubility in Water** | 145mg/L (malathion at 25°C) |
| **Specific Gravity** | 1.230 | **pH** | Not available |
| **Vapour Pressure** | 5.3 mPa at 30°C | **Relative Vapour Density (Air=1)** | Not available |
| **Evaporation Rate** | Not available | **Odour Threshold** | Not available |
| **Viscosity** | Not available | **Partition Coefficient: n-octanol/water (log value)** | Kow Log P : 2.75 |
| **Flash Point** | 163°C | **Flammability** | Combustible |
| **Auto-Ignition Temperature** | Not available | **Flammable Limits - Lower** | Not available |
| **Flammable Limits - Upper** | Not available | **Particle Size** | Not available |

## Section 10 - Stability and Reactivity

**Reactivity**
Reacts with incompatible materials.

**Chemical Stability**
Malathion is stable at temperatures below 55°C.

**Possibility of hazardous reactions**
Storage at temperatures too high may induce formation of more toxic and synergistic impurity in malathion.

**Conditions to Avoid**
Heat, open flames and other sources of ignition.

**Incompatible Materials**
Avoid contact with strong alkalis, amines and oxidizing compounds.

**Hazardous Decomposition Products**
Thermal decomposition and combustion produce noxious fumes including carbon monoxide and carbon dioxide.

**Hazardous Polymerization**
Will not occur.

## Section 11 - Toxicological Information

**Toxicology Information**
Toxicity data is given below.

**Acute Toxicity - Oral**
Malathion :
LD50 (rat): 1375 - 5500 mg/kg

**Acute Toxicity - Dermal**
Malathion:
LD50 (rat) >2000 mg/kg

**Acute Toxicity - Inhalation**
Malathion:
LC50 (rat) : >5.2 mg/l/4h

**Ingestion**
Harmful if swallowed. Ingestion of this product may cause irritation to the mouth, throat, oesophagus and stomach with symptoms of nausea, abdominal discomfort, vomiting and diarrhoea.

**Inhalation**
Inhalation of product vapours may cause irritation of the nose, throat and respiratory system.

**Skin**
May cause an allergic skin reaction.

**Eye**
May be irritating to eyes. The symptoms may include redness, itching and tearing.

**Respiratory Sensitisation**
Not expected to be a respiratory sensitiser.

**Skin Sensitisation**
May cause an allergic skin reaction.

**Germ Cell Mutagenicity**
Not considered to be a mutegenic hazard.

**Carcinogenicity**
Malathion is listed as a Group 2A: Probably carcinogenic to humans according to International Agency for Research on Cancer (IARC).

**Reproductive Toxicity**
Not considered to be toxic to reproduction.

**STOT - Single Exposure**
Not expected to cause toxicity to a specific target organ.

**STOT - Repeated Exposure**
Not expected to cause toxicity to a specific target organ.

**Aspiration Hazard**
Not expected to be an aspiration hazard.

**Other Information**
The Australian Acceptable Daily Intake (ADI) for malathion (maldison) for a human is 0.02 mg/kg/day, set for the public for daily, lifetime exposure. This is based on the NOEL of 2 mg/kg/day, the level determined to show no effects during long term exposure for the most sensitive indicators and the most sensitive species. Ref: Australian Pesticides and Veterinary Medicines Authority (APVMA) March 2022.

## Section 12 - Ecological Information

**Ecotoxicity**
Very toxic to aquatic life with long lasting effects.

**Persistence and degradability**
Half life in soil is typically 1-2 days.

**Mobility**
Not available

**Bioaccumulative Potential**
Not available

**Other Adverse Effects**
Not available

**Environmental Protection**
Do not spray on vegetation where honeybees are foraging. Do not discharge this material into waterways, drains and sewers.

**Acute Toxicity - Fish**
Malathion:
LC50 (bass): 0.28 mg/l/96h
LC50 (bluegill sunfish): 0.1 mg/l/96h

**Acute Toxicity - Daphnia**
Malathion:

EC50 (daphnia): 0.0007 mg/l/48h

**Acute Toxicity - Algae**
Malathion:
EC50 (algae): 13 mg/l/120h

**Acute Toxicity - Other Organisms**
Malathion:
Bees: Toxic to bees. LD50: 0.71 µg/bee.

**Hazardous to the Ozone Layer**
This product is not expected to deplete the ozone layer.

## Section 13 - Disposal Considerations

**Disposal Considerations**
Dispose of waste according to applicable local and national regulations. Do not allow into drains or watercourses or dispose of where ground or surface waters may be affected. Wastes including emptied containers are controlled wastes and should be disposed of in accordance with all applicable local and national regulations. To minimise personal exposure to the chemical, refer to Section 8—Exposure controls and personal protection.
Product Disposal
Shake bag contents into spray tank until the bag is empty. Puncture and deliver empty packaging for appropriate disposal to an approved waste management facility.
50kg containers:- Triple or preferably pressure rinse containers before disposal. Add rinsings to the spray tank. If recycling, replace cap and return clean containers to recycler or designated collection point. If not recycling, break, crush or puncture and deliver empty packaging for appropriate disposal at an approved waste management facility. If an approved waste management facility is not available, bury the empty packaging 500mm below the surface in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots, in compliance with relevant local, state or territory government regulations. DO NOT burn empty containers or product.

## Section 14 - Transport Information

**Transport Information**
Road and Rail Transport (ADG Code):
This product complies with the requirements of Special Provision AU01 and is therefore exempted from being classified as Dangerous Goods according to the ADG Code.
Note: Special Provision AU01:
Environmentally Hazardous Substances meeting the descriptions of UN 3077 or UN 3082 are not subject to this Code when transported by road or rail in: packagings that do not incorporate a receptacle exceeding 500 kg(L); or IBCs.

Marine Transport (IMO/IMDG):
Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea.
Class/Division: 9
UN No: 3082
Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Contains Malathion)
Packing Group: III
EMS: F-A, S-F
Special Provisions: 274, 335, 969

Air Transport (ICAO/IATA):
Classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air.
Class/Division: 9
UN No: 3082
Proper Shipping Name: Environmentally hazardous substance, liquid, n.o.s.(Contains Malathion)
Packing Group: III
Label: Miscellaneous
Packaging Instructions (passenger & cargo): 964
Packaging Instructions (cargo only): 964
Special provisions: A97, A158, A197, A215

**ADG U.N. Number**
None Allocated

**ADG Proper Shipping Name**
None Allocated

**ADG Transport Hazard Class**
None Allocated

**Special Precautions for User**
Not available

**IMDG Marine pollutant**
Yes

**Transport in Bulk**
Not available

## Section 15 - Regulatory Information

**Regulatory Information**
Classified as Hazardous according to the Globally Harmonised System of Classification and Labelling of Chemicals (GHS) including Work, Health and Safety Regulations, Australia.
Classified as a Scheduled Poison according to the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

**Poisons Schedule**
S6

**Montreal Protocol**
Not listed

**Stockholm Convention**
Not listed

**Rotterdam Convention**
Not listed

**International Convention for the Prevention of Pollution from Ships (MARPOL)**
Not available

**Agricultural and Veterinary Chemicals Act 1994**
Not available

**Basel Convention**
Not available

**Other Information**
This product is registered with the Australian Pesticides and Veterinary Medicines Authority (APVMA). APVMA product number: 48992.

## Section 16 - Any Other Relevant Information

**Date of Preparation**
SDS created: May 2022

**Version Number**
1.0

**Literature References**
Preparation of Safety Data Sheets for Hazardous Chemicals Code of Practice.
Standard for the Uniform Scheduling of Medicines and Poisons.
Australian Code for the Transport of Dangerous Goods by Road & Rail.
Work Health and Safety Regulations, Schedule 10: Prohibited carcinogens, restricted carcinogens and restricted hazardous chemicals.
Code of Practice for Supply Diversion into Illicit Drug Manufacture.
National Code of Practice for Chemicals of Security Concern.
Agricultural Compounds and Veterinary Chemicals Act.
International Agency for Research on Cancer (IARC) Monographs.

Montreal Protocol on Substances that Deplete the Ozone Layer.
Stockholm Convention on Persistent Organic Pollutants (POPs).
Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade.
Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal.
International Air Transport Association (IATA) Dangerous Goods Regulations.
International Maritime Dangerous Goods (IMDG) Code.
Workplace exposure standards for airborne contaminants.
Adopted biological exposure determinants, American Conference of Industrial Hygienists (ACGIH).
Globally Harmonised System of Classification and Labelling of Chemicals (7th revised edition).
Code of Practice: Managing Noise and Preventing Hearing Loss at Work.
Australian Pesticides and Veterinary Medicines Authority (APVMA) March 2022

**Contact Person/Point**
Normal hours: SDS coordinator : Phone +61 3 9282 1000
After hours: Shift supervisor : Phone 1800 033 498

**User Codes**

| User Title Label | User Codes |
|---|---|
| Field 4 | Y |

## END OF SDS