

4FARMERS DIMETHOATE 400 SYSTEMIC INSECTICIDE

1 . IDENTIFICATION: PRODUCT IDENTIFIER AND CHEMICAL IDENTITY

Product Name: 4FARMERS DIMETHOATE 400 SYSTEMIC INSECTICIDE

Recommended Use of the Chemical and Restriction on Use: Agricultural insecticide

Details of Manufacturer or Importer:

4Farmers Australia Pty Ltd
70 McDowell Street
Welshpool WA 6106

Phone Number: +61 8 9356 3446

Emergency telephone number: National Poison Information Centre: 13 11 26

2 . HAZARDS IDENTIFICATION

Hazardous Nature:

Classified as Hazardous according to the Globally Harmonised System of Classification and Labelling of Chemicals (GHS) and Safe Work Australia criteria.

Classified as Dangerous Goods according to the Australian Code for the Transport of Dangerous Goods by Road and Rail

GHS Classification:

Flammable liquids, Category 3

Acute Toxicity Oral, Category 3

Acute Toxicity Dermal, Category 3

Skin Sensitisation, Category 1

Specific Target Organ Toxicity - repeated exposure, Category 1

Hazardous to Aquatic Environment, short term/chronic, Category 2

Hazard Statements:

H226 Flammable liquid and vapour.

H301 Toxic if swallowed.

H311 Toxic in contact with skin.

H317 May cause an allergic skin reaction.

H332 Harmful if inhaled.

H372 Causes damage to organs through prolonged or repeated exposure

H411 Toxic to aquatic life with long lasting effects.

Signal Word: DANGER

Pictograms:





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Revision: 05.02.2018

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Precautionary Statements

Prevention

- P102 Keep out of reach of children.
- P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- P233 Keep container tightly closed.
- P241 Use explosion-proof electrical/ventilating/lighting equipment.
- P240 Ground/bond container and receiving equipment.
- P242 Use only non-sparking tools.
- P243 Take precautionary measures against static discharge.
- P260 Do not breathe fumes, mists, vapours or spray.
- P262 Do not get in eyes, on skin, or on clothing.
- P264 Wash contacted areas thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.
- P271 Use only outdoors or in a well ventilated area.
- 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/ and face protection.

Response

- P312 Call a POISON CENTRE or doctor if you feel unwell.
- P361 Remove all contaminated clothing immediately.
- P363 Wash contaminated clothing before reuse
- P301+P310 IF SWALLOWED: Immediately call a POISON CENTRE or doctor
- P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
- P302+P352 IF ON SKIN: Wash with plenty of soap and water.
- P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- P333+P313 If skin irritation or rash occurs: Get medical advice
- P391 Collect spillage.
- P370+P378 In case of fire, use carbon dioxide, dry chemical, foam, water fog. Alcohol resistant foam is the preferred firefighting medium but, if it is not available, normal foam can be used.

Storage

- P405 Store locked up.
- P402+P404 Store in a dry place. Store in a closed container.

Disposal

- P501 Dispose of contents/container in accordance with local/regional/national regulations.

3 . COMPOSITION AND INFORMATION ON INGREDIENTS

Chemical Characterization: Mixture

Description: Mixture of substances listed below with nonhazardous additions

60-51-5	Dimethoate	Acute Toxicity (Oral) 3, H301; Acute Toxicity (Dermal) 3, H311; STOT RE 1, H372; Acute Toxicity (Inhalation) 4, H332; Skin Sensitisation 1A, H317	40%
108-94-1	Cyclohexanone	Flammable Liquids 3, H226; Acute Toxicity (Inhalation) 4, H332	12%



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4 . FIRST AID MEASURES

General advice: First Aid responders should ensure their own safety and use the recommended protective clothing (chemical resistant gloves and splash protection). If the potential for exposure exists, wear PPE as specified in Section 8.

Inhalation:

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Seek medical attention if breathing problems develop.

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 (e.g. watchbands and belts). If breathing has stopped, trained personnel should begin artificial respiration or, if the heart has stopped, cardiopulmonary resuscitation (CPR) immediately.

Eye Contact:

In case of eye contact, rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical attention.

Ingestion:

If swallowed, immediately call a doctor or Poisons Information Centre on 13 11 26. Do not induce vomiting unless told to do so by a doctor or Poison Control Centre. If vomiting occurs spontaneously, keep head below hips to prevent aspiration. Do not give anything by mouth to an unconscious person. Hospital treatment may be necessary.

Information for Doctor:

This product is a cholinesterase inhibitor. Treat symptomatically. If exposed, plasma and red blood cell cholinesterase tests may indicate significance of exposure (baseline data are useful). Vomiting may cause pulmonary aspiration. The stomach should be emptied as soon as possible by careful gastric lavage (using a cuffed endotracheal tube already in place). 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.

Refer to the Safety Data Sheet or product label when contacting a Poison Information Centre or doctor or attending hospital for treatment.

Symptoms Caused by Exposure:

The majority of the neurological symptoms associated with omethoate exposure are headache, nausea, vomiting, diarrhoea, bradycardia, blurred vision, pulmonary oedema, salivation, lacrimation, and urination.

5 . FIRE FIGHTING MEASURES

Suitable extinguishing media Dry agent, carbon dioxide or foam. Do not use water in a jet as this may spread the fire.



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Specific hazards arising from the chemical

Flammable liquid. May evolve toxic gases including oxides of carbon, sulfur, phosphorus and nitrogen when heated to decomposition.

Special protective equipment and precautions for fire fighters

Evacuate area and contact emergency services. Toxic gases may be evolved in a fire situation. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combatting fire. Use water fog to cool intact containers and nearby storage areas.

6 . ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Eliminate all ignition sources. Material is slippery. Clean up spills immediately to prevent further accidents. Wear personal protective equipment (PPE) as specified in Section 8. Avoid contact with spilled or released material. Shut off leaks, if safe to do so. Isolate hazard area and deny entry to unnecessary or unprotected personnel.

Environmental precautions

Prevent from spreading and entering waterways by using sand, earth or other non-combustible material. Ventilate contaminated area thoroughly.

Methods and materials for containment and cleaning up

Contain spillage, then cover / absorb spill with non-combustible absorbent material (vermiculite, sand, or similar), collect and place in suitable containers for disposal. Eliminate all ignition sources. In the event of a large spill, contain spilled material with sand, earth or other absorbent material. Prevent run-off into drains or waterways. Transfer spilled material to suitable containers for re-use or disposal. Transfer contaminated sand or earth into suitable containers for disposal. Clearly label all containers. Wash contaminated area with detergent and water.

7 . HANDLING AND STORAGE

Precautions for safe handling

Before use carefully read the product label. Use safe work practices to avoid eye or skin contact and inhalation of vapour. Use product only outdoors or in well-ventilated areas. Take precautionary measures against static discharge. Observe good personal hygiene, including washing hands before eating, drinking or smoking. Prohibit eating, drinking and smoking in areas where this product is in use. Wash contaminated clothing and other protective equipment before storage or re-use. Provide eyewash fountains and safety showers in close proximity to points of potential exposure.

Conditions for safe storage, including any incompatibilities

Store in a cool, dry and well-ventilated area. Keep container tightly closed when not in use. Protect from direct sunlight, heat, sparks, open flames and other sources of ignition. Keep away from strong oxidising agents. Protect from physical damage. Check regularly for spills. Containers, even those that have been emptied, may contain explosive vapours. Do not cut, drill, grind, weld or perform similar operations on or near containers.

8 . EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure Standards

Cyclohexanone (CAS 108-94-1):
NES TWA: 100mg/m³, 25ppm Sk



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Biological Limits

There is a legislative requirement in most States in Australia for workers to be medically monitored when handling or using organophosphates. The usual method of monitoring is by "*estimation of red cell and plasma cholinesterase activity towards the end of the day on which organophosphates have been used*". Reference: Control of Workplace Hazardous Substances, NOHSC:1005.

Engineering Controls

Maintain air concentration below occupational exposure standards, ensuring adequate ventilation of the working area. Use explosion-proof ventilating equipment.

Individual protective measures and personal protective equipment (PPE)

Eye Protection: Eye and face protectors for protection against splashing materials or liquids. See Australian/New Zealand Standard AS/NZS 1337 for more information.

Skin Protection: Elbow length PVC gloves, protective clothing, chemical resistant apron and safety boots. See Australian Standards AS/NZS 2161, 2210.1 and 2210.2 for more information.

Respiratory Protection: Use a Safe Work Australia approved respirator with combined dust and gas cartridge (canister) - Class A filter cartridge. See Australian Standards AS/NZS 1715 and 1716 for more information.

9 . PHYSICAL AND CHEMICAL PROPERTIES

Appearance:

Form:	Liquid
Colour:	Pale yellow
Odour:	Offensive mercaptan odour
Odour Threshold:	No information available
pH-Value:	No information available
Melting point/Melting range:	No information available
Initial Boiling Point/Boiling Range:	No information available
Flash Point:	39 °C
Flammability:	Flammable liquid
Auto-ignition Temperature:	No information available
Decomposition Temperature:	No information available
Explosion Limits:	
Lower:	No information available
Upper:	No information available
Vapour Pressure:	No information available
Density:	No information available
Relative Density at 20 °C:	1.1
Vapour Density:	No information available
Evaporation Rate:	No information available
Solubility in Water:	Immiscible

10. STABILITY AND REACTIVITY

Reactivity Stable under recommended conditions of storage and use.

Chemical Stability Stable under recommended conditions of storage and use.



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Conditions to Avoid	Keep away from heat, hot surfaces, sparks, open flame and other ignition sources. Avoid direct sunlight.
Incompatible materials and possible hazardous reactions	Keep away from strong oxidising agents, strong acids and alkalis. No hazardous reactions known.
Hazardous decomposition products	Hazardous combustion products include oxides of carbon, nitrogen, phosphorus and sulfur, hydrogen chloride and phosgene.

11 . TOXICOLOGICAL INFORMATION

Health Hazard Summary	This product is toxic by ingestion and of low to moderate toxicity by skin absorption. The product is may cause serious eye damage.
Eye	This product is an eye irritant. Symptoms may include stinging, reddening of the eyes and watering which may become copious. If exposure is brief, symptoms should disappear once exposure has ceased. Prolonged exposure or delayed treatment may cause permanent damage.
Inhalation	Harmful if inhaled. Inhalation of vapours, fumes or aerosols may cause respiratory discomfort and distress, central nervous system depression, which can lead to loss of coordination, impaired judgement and if exposure is prolonged, unconsciousness. Cyclohexane vapour irritates the nose and throat and may cause incoordination, low body temperature, damage to the lungs, liver and kidney, breathlessness, unconsciousness and even death depending on the dose.
Skin	Toxic in contact with skin. There may be sweating and muscle twitches at site of contact. Symptoms may be delayed several hours after exposure. Entry into the blood stream through cuts, abrasions or lesions may produce systemic injury with harmful effects. Symptoms for skin absorption are the same as for inhalation.
Ingestion	Toxic if swallowed. Effects of acute exposure are those typical of organophosphates. Symptoms of acute exposure to organophosphate or cholinesterase-inhibiting compounds may include the following: numbness, tingling sensations, incoordination, headache, dizziness, tremor, nausea, abdominal cramps, sweating, blurred vision, difficulty breathing or respiratory depression, and slow heartbeat. Very high doses may result in unconsciousness, incontinence, and convulsions or fatality. Persons with respiratory ailments, recent exposure to cholinesterase inhibitors, impaired cholinesterase production, or liver malfunction may be at increased risk from exposure to Dimethoate. High environmental temperatures or exposure of Dimethoate to visible or UV light may enhance its toxicity.

Toxicity Data

LD50/LC50 Values Relevant for Classification:

60-51-5 Dimethoate

Oral LD50:	60 mg/kg (rat)
	350 mg/kg (guinea pig)
Oral LDLo	30 mg.kg (human)
Oral TDLo	286 mg/kg (human; man)
Dermal LD50:	353 mg/kg (rat)



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1000 mg/kg (rabbit)

108-94-1 Cyclohexanone

Oral LD50: 1535 mg/kg (rat)
Dermal LD50: 1000 mg/kg (rabbit)
Inhalation LD50/4h: 8000 mg/l (rat)
Inhalation TClO: 75 ppm (human)

Sensitisation: May cause an allergic skin reaction.

Germ Cell Mutagenicity: Based on classification principles, the classification criteria are not met.

Carcinogenicity: Cyclohexanone is classified by IARC as Group 3 - Not classifiable as to its carcinogenicity to humans

Reproductive Toxicity: Based on classification principles, the classification criteria are not met

Target Organ Toxicity (STOT)

- Single Exposure: Based on classification principles, the classification criteria are not met

Specific Target Organ Toxicity

(STOT) - Repeated Exposure: Excessive exposure to this product may produce organophosphate type cholinesterase inhibition. Symptoms of excessive exposure to organophosphates include headache, dizziness, lack of coordination, muscle twitching, tightness in the chest, tremors, salivation, abdominal cramps, nausea, diarrhea, sweating, blurred vision, pinpoint pupils, tearing, excessive urination and convulsions.

Aspiration Hazard: Based on classification principles, the classification criteria are not met

Chronic Health Effects: Repeated or prolonged contact will cause effects similar to acute symptoms in addition to impaired memory and loss of concentration, severe depression and acute psychosis, irritability, confusion, apathy, emotional liability, speech difficulties, headache, spatial disorientation, delayed reaction times, sleepwalking, drowsiness or insomnia. The main health effects from repeated exposure would be toxic symptoms of cholinesterase inhibition as described above (ingestion).

Existing Conditions

Aggravated by Exposure: No information available.

Additional toxicological information:

The Australian Acceptable Daily Intake (ADI) for dimethoate for a human is 0.001 mg/kg/day, set for the public for daily, lifetime exposure. This is based on the NOEL of 0.1 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: Comm. Dept. of Health and Ageing, Office of Chemical Safety, 'ADI List', December 2015)

12 . ECOLOGICAL INFORMATION

Ecotoxicity

This product is regarded as toxic to aquatic organisms and may cause long term adverse effects in the aquatic environment. Highly toxic to bees.



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Persistence and Degradability:	Dimethoate is of low persistence in the soil environment. Soil half-lives of 4 to 16 days, or as high as 122 days have been reported, but a representative value may be on the order of 20 days. Because it is rapidly broken down by soil microorganisms, it will be broken down faster in moist soils. Dimethoate is highly soluble in water, and it adsorbs only very weakly to soil particles, so it may be subject to considerable leaching. However, it is degraded by hydrolysis, especially in alkaline soils, and evaporates from dry soil surfaces. In water, Dimethoate is not expected to adsorb to sediments or suspended particles, nor to bioaccumulate in aquatic organisms. It is subject to significant hydrolysis, especially in alkaline waters. The half-life for Dimethoate in raw river water was 8 days, with disappearance possibly due to microbial action or chemical degradation. Photolysis and evaporation from open waters are not expected to be significant.
Mobility in soil	High..
Bioaccumulative potential	Not expected to bioaccumulate.
Other adverse effects	Not toxic to plants.

13 . DISPOSAL CONSIDERATIONS

Safe handling and disposal methods	Recover or recycle if possible. Refer to local waste management authority for other approved methods. Empty containers should be decontaminated by rinsing with water prior to disposal or recycling. Product must be contained and not disposed of in sewerage systems, drains or waterways. Advise combustible nature.
Disposal of contaminated packaging	Empty packaging should be disposed of in accordance with local, state, and federal regulations or recycled/reconditioned at an approved facility.
Environmental regulations	Dispose of in accordance with relevant local, state and federal legislation.

Disposal Methods and Containers: Dispose according to applicable local and state government regulations.

Special Precautions for Landfill or Incineration:

Please consult your state Land Waste Management Authority for more information.

14 . TRANSPORT INFORMATION

UN Number (ADG, IMDG and IATA)	UN3017
Proper Shipping Name ADG	3017 ORGANOPHOSPHORUS PESTICIDE, LIQUID, TOXIC, FLAMMABLE, ENVIRONMENTALLY HAZARDOUS,
IMDG	ORGANOPHOSPHORUS PESTICIDE, LIQUID, TOXIC, FLAMMABLE, MARINE POLLUTANT



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IATA	ORGANOPHOSPHORUS PESTICIDE, LIQUID, TOXIC, FLAMMABLE
Dangerous Goods Class	
ADG Class:	6.1 Toxic substances.
IMDG Class:	6.1 Toxic substances.
Sub risk:	3 Flammable liquid
Packing Group:	
ADG, IMDG, IATA	III
Marine pollutant:	Yes (Symbol: fish and tree)
Hazchem Code:	3W
Special Provisions:	61, 223, 274
Limited Quantities:	5L
Packagings & IBCs - Packing Instruction:	P001, IBC03
Packagings & IBCs	
- Special Packing Provisions:	Not applicable
Portable Tanks & Bulk Container	
- Instructions:	T7
Portable Tanks & Bulk Containers	
- Special Provisions:	TP2, TP2

15 . REGULATORY INFORMATION

Australian Inventory of Chemical Substances:

60-51-5 Dimethoate (ISO)

108-94-1 Cyclohexanone

WHS REGULATIONS:

There is a legislative requirement in most States in Australia for workers to be medically monitored when using organophosphates. The usual method of monitoring is by "*estimation of red cell and plasma cholinesterase activity towards the end of the day on which organophosphates have been used*". Reference: Control of Workplace Hazardous Substances, NOHSC:1005.

Poison Schedule:

Poisons Schedule: 6

16 . OTHER INFORMATION

Date of Preparation or Last Revision: 05.02.18

Abbreviations and acronyms:

ADG: Australian Dangerous Goods

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

CAS: Chemical Abstracts Service (division of the American Chemical Society)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent



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IARC: International Agency for Research on Cancer

STEL: Short Term Exposure Limit

TWA: Time Weighted Average

NES: National Exposure Standard (Safe Work Australia - Workplace Exposure Standards For Airborne Contaminants)

Flam. Liq. 4: Flammable liquids – Category 4

Acute Tox. (Oral) 3: Acute toxicity – Category 3

Asp. Tox. 1: Aspiration hazard – Category 1

Aquatic Acute 1: Hazardous to the aquatic environment, short-term (Acute). Category 1

Aquatic Chronic 1: Hazardous to the aquatic environment, long-term (Chronic). Category 1

Disclaimer

This SDS is prepared in accordance with the Safe Work Australia document “Code of Practice for the Preparation of Safety Data Sheets for Hazardous Chemicals – February 2016”

The information contained in this material safety data sheet is provided in good faith and is believed to be accurate at the date of issuance. 4Farmers Australia Pty Ltd makes no representation of the accuracy or comprehensiveness of the information and to the full extent allowed by law excludes all liability for any loss or damage related to the supply or use of the information in this material safety data sheet. The user is cautioned to make their own determinations as to the suitability of the information provided to the particular circumstances in which the product is used.

End of SDS