



HEXTAR GROUP OF COMPANIES

Hextar Chemicals Pty Ltd
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Tel : 04 0214 9346

Material Safety Data Sheet

SECTION 1: IDENTIFICATION OF THE CHEMICAL PRODUCT

Product Name: METHYLATE 225 INSECTICIDE

Product Type: Group 1A Insecticide /carbamate - methylcarbamate insecticide

Product Use: For the control of certain insect pests as recommended under the Directions for Use Table.

SECTION 2 : HAZARD IDENTIFICATION

Statement of Hazardous Nature:

This product is classified as: T+, Very Toxic. N, Dangerous to the Environment. F+, Highly Flammable. Hazardous according to the criteria of NOHSC Australia.

Classed as a Dangerous Good for Storage or Road and Rail transport.

Risk Phrases: R11, R28, R41, R23/24, R37/38, R39/23/24/25, R50/53. Highly flammable. Very toxic if swallowed. Risk of serious damage to eyes. Toxic by inhalation and in contact with skin. Irritating to respiratory system and skin. Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed. Very toxic to aquatic organisms, may cause long-term adverse effects to the aquatic environment.

Safety Phrases: S7, S16, S20, S23, S45, S60, S61, S1/2, S24/25, S36/37. Keep container tightly closed. Keep away from sources of ignition - No smoking. When using, do not eat or drink. Do not breathe vapours or spray mists. In case of accident or if you feel unwell, contact a doctor or Poisons Information Centre immediately (show this MSDS where possible). This material and its container must be disposed of as hazardous waste. Avoid release to the environment. Refer to special instructions/Safety Data Sheets. Keep locked up and out of reach of children. Avoid contact with skin and eyes. Wear suitable protective clothing and gloves.

ADG Classification: Class 3: Flammable Liquids. Sub risk: Class 6.1, Toxic Substances. Dangerous Good for transport by road or rail.

Marine Pollutant: None allocated.

SUSDP Classification: S7

UN Number: 2758

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

Ingredients	CAS	Proportion
Methomyl	16752-77-5	22.5%
Methanol	67-56-1	55.0 - 65.0%
Other ingredients	-	to 100%

SECTION 4: FIRST AID MEASURES

Call The Poisons Information Centre if 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 inhalation occurs, contact a Poisons Information Centre immediately. Urgent medical treatment is likely to be needed. Remove the product or move victim to fresh air. If the victim has difficulty breathing, 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: Quickly and gently blot away excess liquid. Flush contaminated area with lukewarm, gently flowing water for at least 20-30 minutes. Under running water, remove contaminated clothing, shoes and other items (eg. watchbands and belts). If breathing has stopped, trained personnel should begin artificial respiration or, if the heart has stopped, cardiopulmonary resuscitation (CPR) should be performed immediately.

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 seek medical attention at once.

Advice to Doctor: Methomyl poisoning produces effects associated with anticholinesterase activity. Atropine sulfate should be used for treatment. Administer repeated doses, 1.2 to 2.0 mg intravenously every 10 to 30 minutes until full atropinization is achieved. Maintain atropinization until the patient recovers. Do not use 2-PAM and morphine for exposure to this product.

SECTION 5: FIRE FIGHTING MEASURES

Fire and Explosion Hazards: This product is classified as highly flammable. There is a moderate risk of an explosion from this product if commercial quantities are involved in a fire. Firefighters should be notified to be extra careful and take appropriate precautions. Any explosion will likely spread the fire to surrounding materials. Water spray may be used to cool drums involved in a fire, reducing the chances of an explosion. 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.

Fire Fighting: This product can be explosively reactive. Evacuate personnel to a safe area and keep personnel upwind of fire as toxic gases may be released upon combustion of the

product. Firefighters or others that may be exposed to vapors or products of combustion should wear full protective clothing and self-contained breathing apparatus (AS/NZ 1715/1716). Firefighting equipment should be thoroughly cleaned after use.

Extinguishing Media: Preferred extinguishing media are alcohol-resistant foam, dry chemical and carbon dioxide.

Flash point: 14°C, closed cup.

Upper Flammability Limit: 36% **Lower Flammability Limit:** 6.7% (methanol)

Autoignition temperature: No data. **Flammability Class:** C3, Highly flammable.

SECTION 6: ACCIDENTAL RELEASE MEASURES

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. Immediately call the Fire Brigade. 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 PVC, butyl rubber, Teflon, PE/EVAL. Eye/face protective equipment should comprise as a minimum, protective goggles. 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.

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. Avoid using sawdust or other combustible material. Any electrical equipment should be non-sparking. Any equipment capable of building an electrostatic charge should be electrically grounded. 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 labeled 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 minimize 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. Avoid contact or contamination of product with incompatible materials listed in Section 10.

Storage: Store in the closed original container in a cool well ventilated area away from direct sunlight and ignition sources.

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, and make sure that surrounding electrical devices and switches are suitable. Check containers periodically for leaks. Containers should be kept closed in order to minimise contamination and possible evaporation.

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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.

Flammability: C3, Highly flammable.

SECTION 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure standards:

ASCC Exposure Limits	TWA (mg/m ³)	STEL (mg/m ³)
methomyl	2.5	not set
methanol	262	328

The ADI for methomyl is set at 0.01mg/kg/day. The corresponding NOEL is set at 1.25mg/kg/day. ADI means Acceptable Daily Intake and NOEL means No-observable-effect-level. Values taken from Australian ADI List, Dec 2006.

Engineering Control: Store, handle and use in a well ventilated area only.

Personal Protective Equipment:

Australian Standards 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**

Eye Protection: Protective glasses or goggles should be worn when this product is being used. Failure to protect your eyes may cause them harm. Eyebaths or eyewash stations and safety deluge showers should be provided near 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.

Protective Material Types: We suggest that protective clothing be made from the following materials: PVC, butyl rubber, Teflon, PE/EVAL.

Respirator: If there is a significant chance that vapours or mists are likely to build up in the area where this product is being used, we recommend that you use a respirator. It should be fitted with a type G cartridge, suitable for agricultural chemicals.

Inhalation: Where product is being sprayed and a mist could be produced a respirator should be worn It should be fitted with a type G cartridge, suitable for agricultural chemicals.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical Description & colour: Clear colorless liquid

Odour: Alcoholic odour

Boiling Point: Approx. 65°C

Freezing/Melting Point: No specific data. Liquid at normal temperatures.

Volatiles: Methanol content.

Vapour Pressure: 23.23 kPa at 25°C

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Vapour Density: No data.
Specific Gravity: 0.892 at 25°C
Water Solubility: Miscible in water
pH: ~ 5.0-7.0 (1 % aqueous emulsion)
Odour Threshold: No data.
Evaporation Rate: No data.
Autoignition temp: No data.
Flash point: Approx. 14°C
Flammability limit: 6.0%-36.0% (Methanol)
Partition coefficient (octanol/water): 0.093 (methomyl) (log P octanol/water)

SECTION 10: STABILITY AND REACTIVITY

Stability: Stable under normal conditions of storage and use as described on the label and in section 7.

Reactivity: This product is unlikely to react or decompose under normal storage conditions.

Conditions to Avoid: This product should be kept in a cool place, preferably below 30°C. Containers should be kept dry. Keep away from sources of sparks or ignition. Keep isolated from combustible materials. Store in the closed original container in a dry, cool, well-ventilated area out of direct sunlight.

Incompatibilities: Strong oxidising agents and reactive metals.

Fire Decomposition: Carbon monoxide, sulfur oxides, methyl isocyanate and hydrogen cyanide.

Hazard reactions: None

SECTION 11: TOXICOLOGICAL INFORMATION

Health Effect from likely routes of exposure - Animal Toxicity data:

An information profile for Methomyl is available at <http://extoxnet.orst.edu/pips/methomyl.htm>

Acute toxicity: Methomyl is highly toxic orally, with reported oral LD₅₀ values of 17 to 24 mg/kg in rats, 10 mg/kg in mice, and 15 mg/kg in guinea pigs. It is moderately toxic via inhalation with a reported 4-hour inhalation LC₅₀ in male rats of 0.3 mg/L. It is slightly toxic via the dermal route, with a reported dermal LD₅₀ of 5880 mg/kg in rabbits, and is absorbed only slowly through the skin. However, if sufficient amounts are absorbed through the skin, symptoms similar to those induced by ingestion or inhalation will develop.

Chronic toxicity: Prolonged or repeated exposure to Methomyl may cause symptoms similar to the pesticide's acute effects. Repeated exposure to small amounts of Methomyl may cause an unsuspected inhibition of cholinesterase, resulting in flu-like symptoms, such as weakness, lack of appetite, and muscle aches. Cholinesterase-inhibition may persist for two to six weeks. This condition is reversible if exposure is discontinued. It is not likely that chronic effects would be seen in humans unless exposures were unexpectedly high, as with chronic misuse.

Reproductive effects: Methomyl fed to rats at dietary doses of 2.5 or 5 mg/kg for three generations caused no adverse effect on reproduction, nor was there any evidence of congenital abnormalities. Based on these data it appears unlikely that Methomyl will have reproductive effects.

Teratogenic effects: No teratogenic effects were found in the foetuses of female rabbits that were fed approximately 15 to 30 mg/kg/day during the 8th to 16th day of gestation. Thus, Methomyl does not appear to be teratogenic.

Mutagenic effects: There is no evidence, despite numerous studies, that Methomyl is a mutagenic or genotoxic.

Carcinogenic effects: There was no evidence of carcinogenicity in either rats or dogs that ingested high doses of Methomyl in 2-year feeding studies. The evidence suggests that Methomyl is not carcinogenic.

Organ toxicity: Lungs, skin, eyes, gastrointestinal tract, kidneys, spleen, and blood-forming organs have been affected in various experiments, depending on route of entry, duration of exposure, and dosage.

Fate in humans and animals: Methomyl is quickly absorbed through the skin, lungs, and gastrointestinal tract and are broken down in the liver. Breakdown products are readily excreted via respiration and urine. Although they do not appear to accumulate in any particular body tissue, they may alter many other enzymes besides the cholinesterases.

Note too that Methanol is toxic by ingestion, inhalation and by skin contact. Repeated exposure to airborne concentrations in the range of 200 to 375 ppm have been associated with headaches, and at 1200 to 8300 ppm with damaged vision. Repeated skin contact can cause defatting dermatitis with dryness and cracking.

Repeated inhalation exposures to rats caused CNS and behavioural effects, liver toxicity and changes to the spleen.

Inhalation exposure of pregnant rats to very high concentrations of methanol in air, 7 hr/day on gestation days 1-19, produced foetotoxic effects (10,000 ppm) and birth defects (20,000 ppm), as well as maternal toxicity. No adverse effects were seen at 5,000 ppm. Pregnant rats administered methanol orally at very high dose levels (20-35 g/kg) on gestation day 10 produced foetotoxic effects, as well as maternal toxicity.

Target organs; eyes.

SECTION 12: ECOLOGICAL INFORMATION

This product is toxic to bees. 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: Methomyl is highly toxic to birds. The acute oral LD₅₀ in bobwhite quail is 24.2 mg/kg. The oral LD₅₀ of Methomyl is 28 mg/kg in hens. All deaths occurred within ten minutes of dosing. The clinical signs of toxicity included tearing of the eyes, salivation, occasional convulsions, and respiratory disorders. In Japanese quail, the LD₅₀ is 34 mg/kg. The LD₅₀ of a 90% pure formulation is 15.9 mg/kg in eight-month-old mallards, and 15.4 mg/kg in three- to four-month-old male pheasants. The LD₅₀ for starlings is 42 mg/kg and for red winged blackbirds is 10 mg/kg.

Effects on aquatic organisms: Methomyl is moderately to highly toxic to fish and highly toxic to aquatic invertebrates. A 28-day fish residue study indicated that Methomyl did not accumulate in fish tissue. Methomyl is unlikely to bioconcentrate in aquatic systems.

Effects on other organisms: Methomyl is highly toxic to bees both by direct contact and through ingestion. The LD₅₀ for a 90% pure formulation of Methomyl is 11.0 to 22.0 mg/kg in mule deer. Symptoms of acute poisoning in these animals included drowsiness, drooling, diarrhoea, and tremors.

Environmental Fate:

Breakdown in soil and groundwater: Methomyl has low persistence in the soil environment, with a reported half-life of approximately 14 days. Because of its high solubility in water, and low affinity for soil binding Methomyl may have potential for groundwater contamination. It is very mobile in sandy loam and silty clay loam soils, but only slight leaching was observed in a silt loam and in a sandy soil. Methomyl is rapidly degraded by soil microbes. Methomyl residues are not expected to be found in treated soil after the growing season in which it is applied.

Breakdown in water: Aqueous solutions of Methomyl have been reported to decompose more rapidly on aeration, in sunlight, or in alkaline media. The estimated aqueous half-life for the insecticide is 6 days in surface water and over 25 weeks in groundwater. In one experiment, the hydrolysis half-lives of Methomyl in solutions at pHs of 6.0, 7.0 and 8.0 were 54, 38, and 20 weeks respectively. In pure water, the hydrolysis half-life has been estimated to be 262 days.

Breakdown in vegetation: Following soil treatment, plants take up Methomyl through their roots and move it throughout the plant by a process called "translocation." When Methomyl is applied to plants, its residues are short-lived. After it is applied to leaves, it has a 3 to 5 day half-life. Less than 3% Methomyl remained in cabbage plants 1 week after they were given foliar treatment with the insecticide.

Fish: LC₅₀ catfish: 0.53mg/L LC₅₀ rainbow trout (*Oncorhynchus mykiss*): 3.4mg/L

LC₅₀ bluegill sunfish (*Lepomis macrochirus*): 0.9mg/L

Algae: EC₅₀ 60mg/L **Bees:** LD₅₀ 0.1µg/bee

Daphnia: EC₅₀ 0.029mg/L

Methanol will biodegrade rapidly in soil, water, and air.

96-Hr LC₅₀ (fathead minnow, 28-29 days old): 29,400 mg/L, 25°C,

96-Hr LC₅₀ (rainbow trout fingerling): 13,680 mg/L, 12°C

SECTION 13: DISPOSAL CONSIDERATIONS

Instructions for the disposal of this product and its containers are listed on the product label.

For collection of unwanted rural chemicals, contact ChemClear @1800 008 182 www.chemclear.com.au and for help with the disposal of empty drums, contact DrumMuster@ www.drummuster.com.au for local and State contacts.

SECTION 14: TRANSPORT INFORMATION

ADG Code: 2758, CARBAMATE PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flash point less than 23 °C

Hazchem Code: 3WE

Special Provisions: 274

Limited quantities: ADG 7 specifies a Limited Quantity value of 1 L for this class of product.

Dangerous Goods Class: Class 3: Flammable liquids.

Sub Risk: Class 6.1, Toxic Substances.

Packaging Group: II

Packaging Method: P001, IBC02

Class 3 Flammable Liquids shall not be loaded in the same vehicle or packed in the same freight container with Classes 1 (Explosives), 2.1 (Flammable Gases where flammable liquids and flammable gases are both in bulk), 2.3 (Toxic Gases), 4.2 (Spontaneously Combustible Substances), 5.1 (Oxidising Agents), 5.2 (Organic Peroxides), 6 (Toxic Substances, except Flammable Liquid is nitromethane), and 7 (Radioactive Substances). They may however be loaded in the same vehicle or packed in the same freight container with Classes 2.1 (Flammable Gases except where the Flammable Liquids and Flammable Gases are in bulk), 2.2 (Non-Flammable Non-Toxic Gases), 4.1 (Flammable Solids), 4.3 (Dangerous When Wet Substances),

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6 (Toxic Substances, except where Flammable Liquid is nitromethane), 8 (Corrosive Substances), 9 (Miscellaneous Dangerous Goods), Foodstuffs or foodstuff empties.

Also refer to **EMERGENCY PROCEDURE GUIDE – TRANSPORT IERG 17** for this product

HAZARD		IDENTIFICATION	
Class Symbol		Trade Name:	Methylate 225 Insecticide
<p>Primary</p>  <p>3 Flammable Liquid</p>	<p>Subsidiary</p>  <p>6.1 Toxic Substance</p>	Shipping Name:	Carbamate pesticides, liquid, flammable, toxic, flashpoint less than 23°C
		UN Number:	2758
		HAZCHEM :	3WE
		Physical Description:	Clear, colorless liquid
		Company: (product registrant)	Hextar Chemicals Pty Ltd 28 Tillotson Terrace, Armadale, VIC 3143 Tel 04 0214 9346

SECTION 15: REGULATORY INFORMATION

SUSDP: Schedule 7; KEEP OUT OF REACH OF CHILDREN. READ SAFETY DIRECTIONS BEFORE OPENING OR USING CAN KIL IF SWALLOWED DO NOT PUT IN DRINK BOTTLES KEEP LOCKED UP

ADG Classification: Class 3: Flammable Liquids. Sub risk: Class 6.1, Toxic Substances. Dangerous Good for transport by road or rail.

AICS (Australia): All of the components in this product are listed on the Australian Inventory of Chemical Substances.

APVMA Registration Number: 64492

SECTION 16: OTHER INFORMATION

This MSDS contains only safety-related information sourced from the public domain and analytical results on this product:

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

Hazchem Number Emergency action code of numbers and letters that provide information firefighters

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

Police and Fire Brigade: Dial 000 **Poisons Information Centre (13 1126)**

Emergency contact: 04 0214 9346 (24 hours)

Information contained in this Material Safety Data Sheet is provided in good faith and is believed to be correct at the date hereof. However, its expected that individuals receiving the information will exercise independent judgement in determining its appropriateness for a particular purpose. Hextar Pty Ltd makes no representation whatsoever 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, and no responsibility as permitted by law for any loss or damage arising from or connection with the supply or use of the information in this Material Safety Data Sheet.

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