



IVORYCHEM PTE LIMITED
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Co. Registration No. 200405572W
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MATERIAL SAFETY DATA SHEET

AZONE 60 SL INSECTICIDE

Version: Global
Date Approved: 08/13/1998
Revision No: 1

CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: AZONE® 60 SL INSECTICIDE
ACTIVE INGREDIENT: Methamidophos
CHEMICAL FAMILY: Systemic organophosphate insecticide
CHEMICAL NAME: O,S-Dimethylphosphora-midodthiolate
MOLECULAR FORMULA: C₂H₈NO₂PS
SYNONYMS: swipe, nitofol, tamanox, other trade names

MANUFACTURER

IVORYCHEM PTE LTD
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Emergency Telephone Numbers:

Emergency Phone contact@ivorychem.com (Please refer local label for Emergency Numbers in your region).

COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS #	Wt.%	PEL/TLV	EC No.	EC Class
Methamidophos	10265-92-6	60	None	None	None
Other ingredients	-	40	None	None	None

HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Caution. Harmful if swallowed, inhaled or absorbed through the skin.

IMMEDIATE CONCERNS:

- Pale yellow to off-white liquid
- Phenolic odor

POTENTIAL HEALTH EFFECTS: Inhalation, dermal absorption or ingestion of this material may result in systemic intoxication due to the inhibition of the enzyme cholinesterase. The sequence of development of systemic effects varies with the route of entry, and the onset of symptoms may be delayed to 12 hours. First symptoms of poisoning may be nausea, increased salivation,



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lacrimation, blurred vision and constricted pupils. Other symptoms of systemic poisoning include vomiting, diarrhea, abdominal cramping, dizziness and sweating. After inhalation, respiratory symptoms like tightness of chest, wheezing and laryngeal spasms, may be pronounced at first. If the poisoning is severe, then symptoms of convulsions, low blood pressure, cardiac irregularities, loss of reflexes and coma may occur. In extreme cases, death may occur due to a combination of factors such as respiratory arrest, paralysis of respiratory muscles or intense bronchoconstriction. Complete symptomatic recovery from sublethal poisoning usually occurs within one week once the source of exposure is completely removed. Animal studies have shown that this material is extremely toxic orally. In addition, it is readily absorbed through the mucous membranes of the eye, and can be slightly irritating to the skin.

CHRONIC EFFECTS OF EXPOSURE: Cholinesterase inhibition sometimes persists for 2-6 weeks; thus, repeated exposure to small amounts of this material may result in an unexpected cholinesterase depression causing symptoms such as malaise, weakness, and anorexia that resemble other illnesses such as influenza. Exposure to a concentration that would not have produced symptoms in a person that was not previously exposed may produce severe symptoms of cholinesterase inhibition in a previously exposed person

MEDICAL CONDITIONS AGGRAVATED: No specific medical conditions are known which may be aggravated by exposure to the active ingredient in this product however, any disease, medication or prior exposure which reduces normal cholinesterase activity may increase susceptibility to the toxic effects of the active ingredient.

FIRST AID MEASURES

EYES: Flush eye immediately with large amounts of water for 15 minutes, occasionally lifting eyelids, until no evidence of chemical remains. Seek medical attention if eye irritation persists.

SKIN: In case of contact, immediately wash with plenty of soap and water for at least 5 minutes. Seek medical attention if irritation develops or persists. Remove contaminated clothing. Clean contaminated clothing and shoes before re-use. Seek medical attention if signs of intoxication (poisoning) occur.

INGESTION: Wash out mouth with water. Keep patient at rest and seek urgent medical advice as above. Transport patient to doctor or hospital quickly. Give one atropine tablet every 5 minutes until dryness of the mouth occurs, preferably on the advice of a doctor or Poisons Information Centre. Do not attempt to give anything by mouth to a semi-conscious or unconscious person.

INHALATION: Remove victim from immediate source of exposure and assure that the victim is breathing. If breathing is difficult, administer oxygen, if available. If victim is not breathing, administer CPR (cardio-pulmonary resuscitation). If breathing difficulty or discomfort occurs and persists, contact a medical doctor. Seek medical attention.

NOTES TO MEDICAL DOCTOR: This product contains the organophosphorus insecticide, methamidophos, a cholinesterase inhibitor. Cholinesterase inhibition results in stimulation of the central nervous system, the parasympathetic nervous system and the somatic motor nerves. Mild intoxication causes headache, blurred vision, weakness, sweating, mild chest pain, nausea and vomiting. Severe intoxication causes cyanosis (blueness of the skin, as from lack of oxygen), muscular twitching, spasms, miosis (pinpoint pupils) and respiratory paralysis. Onset of symptoms may be delayed. Cholinesterase inhibition sometimes persists for several weeks. Delayed neurological problems (delayed peripheral neuropathy) have been described 2-4 weeks after large exposures to organophosphates.

TREATMENT: basic aid, decontamination, symptomatic treatment and if necessary administration of antidote. If symptoms of organophosphate poisoning are present, the



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administration of atropine sulfate is indicated. Administer atropine sulfate in large, therapeutic doses. In mild cases, start treatment by giving 1-2 mg of atropine intravenously every 15 minutes until signs of atropinization appear (dry mouth, flushing, and dilated pupils if pupils were originally pinpoint).

In severe cases, start treatment by giving 2-4 mg intravenously every 5-10 minutes until fully atropinized. In severe cases, pralidoxime may be administered as well, if given within 24 hours after exposure. Dosages for children should be appropriately reduced. 2-PAM is also antidotal and may be used in conjunction with atropine. Do not give morphine. Watch for pulmonary edema, which may develop in serious cases of poisoning even after 24 hours. At first sign of pulmonary edema, place patient in oxygen tent and treat symptomatically.

CONTRAINDICATIONS: Adrenergic derivatives. Never give patient morphine, theophylline or theophylline-ethylenediamine. Large amounts of intravenous fluids are generally contraindicated because of the threat of pulmonary oedema.

Production workers and agricultural workers handling this product should be monitored for cholinesterase levels. A baseline level should be established prior to any potential exposure.

FIRE FIGHTING MEASURES

FLASH POINT: 214 F (101 C) Tagliabue Closed Cup (ASTM D-56)

FLAMMABLE LIMITS: Not established

EXTINGUISHING MEDIA: Water, carbon dioxide, dry chemical

FIRE FIGHTING PROCEDURES: Keep out of smoke. Cool exposed containers with water spray. Fight fire from upwind position. Use self-contained breathing equipment. Contain runoff by diking to prevent entry into sewers or waterways. Equipment or materials involved in pesticide fires may become contaminated.

HAZARDOUS DECOMPOSITION PRODUCTS: Hydrogen cyanide, carbon monoxide, phosphorus pentoxide, sulphur dioxide and nitrogen oxides may be formed.

ACCIDENTAL RELEASE MEASURES

EVACUATION PROCEDURES AND SAFETY: Wear appropriate gear for the situation. See Personal Protection information in Section 8.

CLEANUP AND DISPOSAL OF SPILL: Isolate area and keep unauthorized people away. Do not walk through spilled material. Avoid breathing vapors and skin contact. Remove sources of ignition if combustible or flammable vapors may be present and ventilate area. Wear protective equipment. Dike contaminated area with absorbent granules, soil, sand, etc. If there is a large spill, material should be recovered. Small spills can be absorbed with absorbent granules, spill control pads, or any absorbent material. Carefully sweep up absorbed spilled material. Place in covered container for reuse or disposal. Scrub contaminated area with detergent and bleach solution and/or detergent and lye in water solution. Repeat. Rinse with water. Use dry absorbent material such as clay granules to absorb and collect wash solution for proper disposal. Contaminated soil may have to be removed and disposed. Do not allow material to enter streams, sewers or other waterways or contact vegetation.

CONTAINMENT OF SPILL: Follow procedure under Cleanup and Disposal of Spill.

ENVIRONMENTAL AND REGULATORY REPORTING: Runoff from fire control or dilution water may cause pollution. Prevent material from entering public sewer system or any waterway. Spills



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may be reportable to the National Response Center (800-424-8802) and to state and/or local agencies. If spilled on the ground, the affected area should be removed to a depth of one or two inches and placed in an appropriate container for disposal.

HANDLING AND STORAGE

HANDLING PROCEDURES: Do not ingest. Avoid direct or prolonged contact with skin and eyes. Do not breathe vapors.

STORING PROCEDURES: Store in original container. Keep in a dry, cool place. Store in an area that is away from foodstuffs or animal feed, out of reach of children and animals.

WORK/HYGIENIC PROCEDURES: Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this material. Do not store, use, and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored. Wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics or using the toilet. Wash exposed skin promptly to remove accidental splashes of contact with this material.

In addition, based upon the specific hazard of this product. Do not take clothing/objects contaminated by this material off the work site. Shower and change into street clothes before leaving the work site.

MIN/MAX STORAGE TEMPERATURES: Not available

EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS: Where engineering controls are indicated by use conditions of a potential for excessive exposure exists, the following traditional exposure control techniques may be used to effectively minimize employee exposures: general area dilution/exhaust ventilation.

EYE/FACE PROTECTION: Eye and face protection requirements will vary dependent upon work environment conditions and material handling practices. Appropriate ANSI Z87 approved equipment should be selected for the particular use intended for this material. Eye contact should be prevented through use of chemical safety glasses with side shields or splash proof goggles. An emergency eye wash must be readily accessible to the work area. May irritate the eyes. Avoid contact with eyes and skin. Do NOT inhale spray mist. If product in eyes, wash out immediately with water. Wear a face shield while handling the concentrate.

SKIN PROTECTION: Skin contact should be prevented through use of suitable protective clothing, gloved and footwear, selected with regard of use conditions and exposure potential. Consideration must be given both to durability as well as permeation resistance. May irritate the skin. When preparing dip or spray, using prepared dip or spray, wear cotton overalls buttoned to the neck and wrist, washable hat, elbow-length PVC gloves, and face shield. If product on skin, immediately wash area with soap and water. Wash hands before breaks and at end of work.

RESPIRATOR: When respirators are required, select NIOSH/MSHA approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industrial recommendations.

Under normal conditions, in the absence or other airborne contaminants, the following should provide protection from this material up to the conditions specified by the appropriate OSHA< WHMIS or ANSI standard(s); Air-purifying (half-mask.full-face) respirator with cartridge/canister approved for use against pesticides.

Under conditions immediately dangerous to life or health, or emergency conditions with unknown



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concentrations, use a full-face positive pressure air-supplied respirator equipped with an emergency escape air supply unit or use a self-contained breathing apparatus unit.

PROTECTIVE MATERIAL TYPES: PVC, rubber

COMMENTS: After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water. After each day's use, wash gloves, face shield and contaminated clothing. Product is poisonous if swallowed. Clean water should be available for washing in case of eye or skin contamination. Educate and train employees in safe use of the product. Follow all label instructions. Launder clothing separately after use. Wash thoroughly after handling.

PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Crystalline solid, with off-white colour and pungent odour

CHEMICAL NAME: O,S-Dimethylphosphora-midothiolate

MOLECULAR WEIGHT: 141.12

WATER SOLUBILITY: 90g/l @ 20 degrees C

SOLUBILITY IN OTHER SOLVENTS: Not available

MELTING POINT: 112 degrees F, 44.5 degrees C

VAPOR PRESSURE: 3 x 10 to the minus 4 mmHg @ 30 Degrees C

PARTITION COEFFICIENT: -1.74

ADSORPTION COEFFICIENT: Not available

STABILITY AND REACTIVITY

CONDITIONS TO AVOID: Excessive heat and fire.

STABILITY: This material is stable under normal handling and storage conditions described in Section 7.

INCOMPATIBLE MATERIALS: Strong oxidizing agents

HAZARDOUS DECOMPOSITION: CH₃SH, CO, SO₂, P₂O₅, NH₃, vaporized MONITOR

HAZARDOUS REACTIONS: Not applicable

TOXICOLOGICAL INFORMATION

ACUTE TOXICITY: Oral LD₅₀ (male rat) 17 mg/kg
Oral LD₅₀ (female rat) 21 mg/kg
Dermal LD₅₀ (male rabbit) 987 mg/kg
Dermal LD₅₀ (female rabbit) 516 mg/kg
Inhalation LC₅₀ (male rat) 0.198 mg/L (4h)
Inhalation LC₅₀ (female rat) 0.184 mg/L (4h)
Eye effects: This product is highly toxic and can be readily absorbed through the mucous membranes of the eye.

LOCAL EFFECTS: Eye: may irritate the eye
Skin: may irritate the skin

SUBCHRONIC TOXICITY: A 3 month feeding study, rats and dogs tolerated treatment without ill effects when dosed with dietary concentrations of 2 ppm and 1.5 ppm respectively. In a study where rabbits were treated dermally for 6 hours per day, 5 days per week for 3 weeks, a level of 0.5 mg/kg body weight produced no toxicological findings.

CHRONIC TOXICITY: In chronic feeding studies with the technical material, NOELs (no-effect levels) of 5 ppm for mice and 2 ppm for rats and dogs were obtained.

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CARCINOGENICITY: The technical material was tested for carcinogenicity in feeding studies using rats and mice. Dietary levels up to and including 25 ppm for mice and 54 ppm for rats were employed on these studies. These studies revealed no evidence of carcinogenicity for the technical material.

ECOLOGICAL INFORMATION

This product is extremely toxic to birds and other wildlife.

DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: Chemical additions, processing or otherwise altering this material may make the waste management information presented in this MSDS incomplete, inaccurate or otherwise inappropriate. Please be advised that state and local requirements for waste disposal may be more restrictive or otherwise different from federal laws and regulations. Consult state and local regulations regarding the proper disposal of this material. Disposal of unwanted spraywash should be into a pit of adequate size on level ground and away from watercourses, drains, dams, and tree roots. Triple or (preferably) pressure rinse empty containers, adding rinsate to spray wash. Do not dispose of undiluted chemicals on site. If not available bury containers below 500mm in a disposal pit specifically marked and set up for this purpose clear of waterways, vegetation and roots. Empty containers and product should not be burnt.

EMPTY CONTAINER: Non-returnable containers which held this material should be cleaned, prior to disposal, by triple-rinsing. Containers which held this material may be cleaned by being triple-rinsed, and recycled.

TRANSPORT INFORMATION**DOT CLASSIFICATION**

PROPER SHIPPING NAME: Organophosphorus pesticides, liquid

HAZARD CLASS/DIVISION: 6.1

UN/NA NUMBER: UN3018

PACKING GROUP: II

DOT PRODUCT RQ 1LBS (KGS): None

HAZARD LABEL(S): Toxic

FREIGHT CLASS BULK: Insecticides, NOI – NMFC 102100

FREIGHT CLASS PACKAGE: Insecticides, NOI – NMFC 102100

PRODUCT LABEL: Not noted

REGULATORY INFORMATION

OSHA STATUS: This product is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29 CFR 1910.1200.

TSCA STATUS: This product is exempt from TSCA Regulation under FIFRA Section 3 (2)(B)(ii) when used as a pesticide.

CERCLA REPORTABLE QUANTITY: No components listed

RCRA STATUS: If discarded in its purchased form, this product would not be a hazardous waste either by listing or by characteristic. However, under RCRA, it is the responsibility of the product



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user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste.

OTHER INFORMATION

Section(s) Revised : New Format