SANONDA
MATERIAL SAFETY DATA

Sanonda (Australia) Pty.Ltd.
A.C.N. 059 813 973
Suite 822 St Kilda Road Towers,
No. 1 Queens Road,
Melbourne, VIC 3004

PRODUCT NAME:

BAR 500 EC Chlorpyrifos Insecticide and Termiticide

Hazardous according to criteria of Worksafe Australia

Emergency Phone: 000 or 131126 State Poisons Information Centre

---

IDENTIFICATION SECTION

MSDS No. 005 a **Date: 21.05.2010** **Supersedes: 005**

Manufacturer's Name/Address:

Sanonda (Australia) Pty. Ltd.
Suite 822 St Kilda Road Towers,
No. 1 Queens Road,
Melbourne, VIC 3004
Emergency phone Number: 03 9863 8081

PRODUCT INFORMATION

Trade Name: **BAR 500 EC Chlorpyrifos Insecticide and Termiticide**

Chemical Name & Synonyms of Active Material: Phosphorothioic Acid, 0,0-Diethyl 0-(3,5,6-Trichloro-2-Pyridinyl) Ester

Chemical Formula of Active Material: $C_9H_{11}CL_3NO_3PS$

Chemical Family: Organophosphate Halogen compound, aromatic

UN No: 3018

Hazchem Code: 2X **Poisons Schedule:** S6 **Packing Group:** III

ADG Class: 6.1 Toxic Substances **Subsidiary Risk:** None allocated

Shipping Name: Pesticides Organophosphorus, Liquid, Toxic

Uses: For the control of certain insect pests in fruit, vegetables, field crops, pasture and other situations as specified by the label.

INGREDIENTS:

CHEMICAL ENTITY	CAS NO	PROPORTION
Chlorpyrifos	**2921-88-2**	**500 g/L**
Non Hazardous Emulsifier		**<10 % (w/v)**
Aromatic Petroleum Hydrocarbon		**to 100**

SANONDA
MATERIAL SAFETY DATA

Sanonda (Australia) Pty. Ltd.
A.C.N. 059 813 973
Suite 822 St Kilda Road Towers,
No. 1 Queens Road,
Melbourne, VIC 3004
Emergency phone Number: 03 9863 8081

PRODUCT NAME: BAR 500 EC Chlorpyrifos Insecticide and Termiticide

---

FIRST AID PROCEDURES

INHALATION:

FIRST AID - Remove from exposure area to fresh air immediately. If breathing has stopped, give artificial respiration. Maintain airway and blood pressure and administer oxygen if available. Keep affected person warm and at rest. Treat symptomatically and supportively. Administration of oxygen should be performed by qualified personnel. Get medical attention immediately.

SKIN CONTACT:

FIRST AID - Remove contaminated clothing immediately. Wash contaminated areas with soap and water followed by alcohol (Arena, Poisoning, 4th Ed.). Emergency personnel should wear gloves and avoid contamination. Treat respiratory difficulty with artificial respiration. Get medical attention immediately.

EYE CONTACT:

FIRST AID - Irrigate eyes with water or saline solution. If symptoms of poisoning occur, treat respiratory difficulty with artificial respiration and oxygen. Observe patient for at least 24-36 hours (Gosselin, Clinical Toxicology of Commercial Products, 5th Ed.). Get medical attention immediately. Oxygen should be administered by qualified medical personnel.

INGESTION:

FIRST AID - If person is alert and respiration is not depressed, give syrup of Ipecac followed by water (if vomiting occurs, keep head below hips to prevent aspiration). If consciousness level declines or vomiting has not occurred in 15 minutes empty stomach by gastric lavage with the aid of cuffed endotracheal tube using isotonic saline or 5% sodium bicarbonate follow with activated charcoal. Establish and maintain airway. Treat respiratory difficulty with artificial respiration and oxygen. Do not give morphine, aminophylline, phenothiazines, reserpine, furosemide, or ethacrynic acid (Morgan, Recognition and Management of Pesticide Poisoning, 3rd Ed.). Treat symptomatically and supportively. Administration of oxygen and lavage must be performed by qualified medical personnel. Get medical attention immediately.

NOTE TO PHYSICIAN
ANTIDOTE:

The following antidote(s) have been recommended. However, the decision as to whether the severity of poisoning requires administration of any antidote and actual does required should be made by qualified medical personnel.

Sanonda (Australia) Pty. Ltd.
A.C.N. 059 813 973
Suite 822 St Kilda Road Towers,
No. 1 Queens Road,
Melbourne, VIC 3004
Emergency phone Number: 03 9863 8081

PRODUCT NAME: BAR 500 EC Chlorpyrifos Insecticide and Termiticide

FIRST AID PROCEDURES (Contd)

FOR CHOLINESTERASE INHIBITORS:
Establish clear airway and tissue oxygenation by aspiration of secretions, and if necessary, by assisted pulmonary ventilation with oxygen. Improve tissue oxygenation as much as possible before administering atropine to minimise the risk of ventricular fibrillation. Administer atropine sulfate intravenously, or intramuscularly if IV injection is not possible. In moderately severe poisoning administer atropine sulfate, 0.4-2.0 mg repeated every 15 minutes until atropinisation is achieved (tachycardia, flushing, dry mouth, mydriasis). Maintain atropinisation by repeated doses for 2-12 hours, or longer, depending on the severity of poisoning.
The appearance of rales in the lung bases, miosis, salivation, nausea, bradycardia, are all indications of inadequate atropinisation. Severely poisoned individuals may exhibit remarkable tolerance to atropine; two or more times the dosages suggested above may be needed. Persons not poisoned or only slightly poisoned, however, may develop signs of atropine toxicity from such large dosages: Fever, muscle fibrillations, and delirium are the main signs of atropine toxicity. If these signs appear while the patient is fully atropinized, atropine administration should be discontinued, at least temporarily. Observe treated patients closely at least 24 hours to insure that symptoms (possibly pulmonary edema) do not recur as atropinisation wears off. In very severe poisoning, metabolic disposition of toxicant may require several hours or days during which atropinisation must be maintained. Markedly lower levels of urinary metabolites indicate that atropine dosage can be tapered off. As dosage is reduced, check the lung bases frequently for rales. If rales are heard or other symptoms return, re-establish atropinisation promptly (Morgan, Recognition and Management of Pesticide Poisoning, 3rd Ed.).
Administration of antidote must be performed by qualified medical personnel. In cases of severe poisoning by organophosphate pesticides in which respiratory depression, muscle weakness and twitching are severe, give pralidoxime (Protopam-Ayerst, 2-PAM), 1.0 gram intravenously at no more than 0.5 gram per minute. Dosage of pralidoxime may be repeated in 1-2 hours, then at 10-12 hour intervals if needed. In very severe poisoning, dosage rates may be doubled. Treatment with pralidoxime will be most effective if given within thirty-six hours after poisoning (Morgan, Recognition and Management of Pesticide Poisoning, 3rd Ed.).
Antidote should be administered by qualified medical personnel.

FIRE AND EXPLOSION INFORMATION

FIRE AND EXPLOSION HAZARD:
Hazchem Code 2WE. There is danger of violent reaction or explosion.

EXTINGUISHING MEDIA:
Water based foam.

For larger fires, use water spray, fog or regular foam.

FIRE AND EXPLOSION INFORMATION (Contd)

FIREFIGHTING:
Full protective clothing including breathing apparatus required. Move container from fire area if you can do it without risk. Fight fire from maximum distance. Stay away from ends of tanks. Embank fire-control water for later disposal; do not scatter the material. Prevent any spillage from entering drains or water courses.
Extinguish only if flow can be stopped; use flooding amounts of water as fog, solid streams may be ineffective. Cool containers with flooding amounts of water from as far a distance as possible. Use water spray to absorb toxic vapours. Avoid breathing toxic vapours; keep upwind. Consider evacuation of downwind area if material is leaking.

HAZARDOUS COMBUSTION PRODUCTS:
Thermal decomposition may release toxic and/or hazardous gases.

SPILL CONTROL AND PRODUCT/WASTE DISPOSAL

OCCUPATIONAL SPILL:
Do not touch spilled material. Stop leak if you can do it without risk. Use water spray to reduce vapours. For small spills, take up with sand or other absorbent material and place into containers for later disposal. For small dry spills, with a clean shovel place material into clean, dry containers and cover. Move containers from spill area. For larger spills, dam far ahead of spill for later disposal. Keep unnecessary people away. Isolate hazard area and deny entry. Ventilate closed spaces before entering.

SOIL SPILL:
Dig holding area such as lagoon, pond or pit for containment.
Use protective cover such as a plastic sheet to prevent material from dissolving in fire extinguishing water or rain.

WATER SPILL:
Trap spilled material at bottom in deep water pockets, excavated holding areas or within sand bag barriers.
Use activated carbon to absorb spilled substance that is dissolved.
Use suction hoses to remove trapped spill material.
Use mechanical dredges or lifts to extract immobilised masses of pollution and precipitates.

WASTE DISPOSAL PROCEDURE:
Wastes that cannot be used or chemically re-processed should be disposed of in landfill approved for pesticide disposal. Dispose of in accordance with local law.

Sanonda (Australia) Pty. Ltd.
A.C.N. 059 813 973
Suite 822 St Kilda Road Towers,
No. 1 Queens Road,
Melbourne, VIC 3004
Emergency phone Number: 03 9863 8081

PRODUCT NAME: BAR 500 EC Chlorpyrifos Insecticide and Termiticide

---

HANDLING AND STORAGE

Observe all federal, state and local regulations when storing this substance. Store in accordance with Dangerous Goods Regulations in recommended procedures for the disposal and storage of pesticides and pesticide containers.
Store away from incompatible substances.

Shipping Name:
Pesticides Organophosphorus, Liquid, Toxic, Flammable, N.O.S.

HEALTH HAZARD INFORMATION

EXPOSURE LIMITS:

0.2 mg/m3 OSHA TWA (skin)
0.2 mg/m3 ACGIH TWA (skin)

VENTILATION:
Provide local exhaust or process enclosure ventilation to meet published exposure limits.

EYE PROTECTION:
Employee must wear splash-proof or dust-resistant safety goggles and a face shield to prevent contact with this substance.
Emergency wash facilities:
Where there is any possibility that an employee's eyes and/or skin may be exposed to this substance, the employer should provide an eye wash fountain and quick drench shower within the immediate work area for emergency use.

CLOTHING:
Employee must wear appropriate protective (impervious) clothing and equipment to prevent any possibility of skin contact with this substance.

GLOVES:
Employee must wear appropriate protective gloves to prevent contact with this substance.

Sanonda (Australia) Pty. Ltd.
A.C.N. 059 813 973
Suite 822 St Kilda Road Towers,
No. 1 Queens Road,
Melbourne, VIC 3004
Emergency phone Number: 03 9863 8081

PRODUCT NAME: BAR 500 EC Chlorpyrifos Insecticide and Termiticide

HEALTH HAZARD INFORMATION (contd)

RESPIRATOR:
Respirators are recommended based on information found in the physical data, toxicity and health effects sections. They area ranked in order from minimum to maximum respiratory protection.
The specific respirator selected must be based on contamination levels found in the work place, must be based on the specific operation, must not exceed the working limits of the respirator.
Any supplied-air respirator with a full face piece operated in pressure-demand or other positive pressure mode or with a full face piece, helmet or hood operated in continuous- flow mode.
Any self-contained breathing apparatus with a full face piece operated in pressure-demand or other positive pressure mode.

FOR FIREFIGHTING AND OTHER IMMEDIATELY DANGEROUS TO LIFE OR HEALTH CONDITIONS:
Any self-contained breathing apparatus that has a full face piece and is operated in a pressure-demand or other positive-pressure mode.
Any supplied-air respirator that has a full face piece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive-pressure mode.

STABILITY AND REACTIVITY

REACTIVITY:
May undergo violent exothermic decomposition above 130°C (266°F). The increase in temperature and pressure may result in the violent rupture of the container.

CONDITIONS TO AVOID:
None reported.

INCOMPATIBILITIES:

ALKALINE CONDITIONS: May cause hydrolysis.
BRASS: May be corroded.
COPPER: May be corroded.

HAZARDOUS DECOMPOSITION:
Thermal decomposition may release toxic and/or hazardous gases.

Sanonda (Australia) Pty. Ltd.
A.C.N. 059 813 973
Suite 822 St Kilda Road Towers,
No. 1 Queens Road,
Melbourne, VIC 3004
Emergency phone Number: 03 9863 8081

PRODUCT NAME: BAR 500 EC Chlorpyrifos Insecticide and Termiticide

STABILITY AND REACTIVITY (Contd)

POLYMERISATION:
Hazardous polymerisation has not been reported to occur under normal temperatures and pressures.

TOXICOLOGY INFORMATION

TOXICITY DATA: >200 mg/m3/4 hours inhalation-rat LC50; 2000 mg/kg skin-rabbit LD50; 202 mg/kg skin-rat LD50; 300 mg/kg oral-man TDLo; 82 mg/kg oral-rat LD50; 60 mg/kg oral-mouse LD50; 1000 mg/kg oral-rabbit LD50; 504 mg/kg oral-guinea pig LD50; 100 mg/kg subcutaneous-guinea pig LDLo; 192 mg/kg intra peritoneal-mouse LD50; 150 mg/kg unreported-rat LD50; 163 mg/kg unreported-mammal LD50; mutagenic data (RTECS); reproductive effects data (RTECS).
CARCINOGEN STATUS: None.
LOCAL EFFECTS: Irritant - skin, eye.
ACUTE TOXICITY LEVEL: Toxic by ingestion; moderately toxic by dermal absorption.
TARGET EFFECTS: Cholinesterase inhibitor.
AT INCREASED RISK FROM EXPOSURE: Persons with respiratory ailments, recent exposure to cholinesterase inhibitors or impaired cholinesterase production, or liver malfunction.*
ADDITIONAL DATA: May cross the placenta. High environmental temperatures or exposure of the chemical to visible or ultraviolet light may enhance the toxicity. Interactions with medications may occur.*
* May be based on general information on organophosphates.

HEALTH EFFECTS
INHALATION:
CHOLINESTERASE INHIBITOR.
EXPOSURE - When inhaled, the first effects of cholinesterase inhibitors are usually respiratory and may include nasal hyperemia and watery discharge, cough, chest discomfort, dyspnea, and wheezing due to increased bronchial secretions and bronchoconstriction. If sufficient amounts are absorbed, other systemic effects may begin within a few minutes or be delayed for up to 12 hours. Symptoms may include pallor, nausea, vomiting, diarrhea, abdominal cramps, headache, dizziness, ocular pain, blurred vision, miosis or in some cases, especially initially, mydriasis, lacrimation, salivation, sweating, and confusion. Other reported central nervous system or neuromuscular effects may include ataxia, slurred speech, areflexia, weakness, fatigue, fasciculations, twitching, tremors possibly of the tongue and

Sanonda (Australia) Pty. Ltd.
A.C.N. 059 813 973
Suite 822 St Kilda Road Towers,
No. 1 Queens Road,
Melbourne, VIC 3004
Emergency phone Number: 03 9863 8081

PRODUCT NAME: BAR 500 EC Chlorpyrifos Insecticide and Termiticide

TOXICOLOGY INFORMATION (Contd)

eyelids, and eventually paralysis of the extremities and possibly of the respiratory muscles. In severe cases there may also be involuntary defectation and urination, cyanosis, psychosis, hyperglycemia, acute pancreatitis, cardiac irregularities, pulmonary edema, unconsciousness, convulsions, and coma. Death is primarily due to respiratory failure, although cardiovascular effects including cardiac arrest may also be implicated. Long term sequelae are rare but may include neuro-psychiatric disorders and myopathy with muscle tenderness.

SKIN CONTACT:
IRRITANT.

May cause irritation. Four doses of 25 mg/kg applied to the skin of humans for 12 hours each produced depressed plasma cholinesterase levels.

CHOLINESTERASE INHIBITOR.

EXPOSURE - Localised sweating and fasciculations may occur at the site of contact. If sufficient amounts are absorbed, other effects of cholinesterase inhibition as described in acute inhalation may occur. Symptoms may be delayed 2-3 hours, but usually no more than 12 hours. The rate of absorption is increased by the presence of dermatitis or high ambient temperatures.

EYE CONTACT:
IRRITANT.

May cause irritation. See information on organophosphates.

CHOLINESTERASE INHIBITOR.

EXPOSURE - Direct contact may cause pain, hyperaemia, lacrimation, twitching of the eyelids, miosis, and ciliary muscle spasm with loss of accommodation, blurred or dimmed vision and browache. Sometimes mydriasis may occur instead of miosis. With sufficient exposure, other symptoms of cholinesterase inhibition as described in acute inhalation may occur.

INGESTION:
TOXIC.

A dose of 0.1 mg/kg of 94% active material ingested daily for four weeks produced significant cholinesterase inhibition in several human volunteers. In a delayed neurotoxicity study in hens, the results were negative. Fetotoxicity and fetal developmental abnormalities were observed in a chronic ingestion study of pregnant mice, but the same dose produced severe maternal toxicity.

Sanonda (Australia) Pty. Ltd.
A.C.N. 059 813 973
Suite 822 St Kilda Road Towers,
No. 1 Queens Road,
Melbourne, VIC 3004
Emergency phone Number: 03 9863 8081

PRODUCT NAME: BAR 500 EC Chlorpyrifos Insecticide and Termiticide

TOXICOLOGY INFORMATION (Contd)

CHOLINESTERASE INHIBITOR.

EXPOSURE - When ingested, the first effects may be nausea, vomiting, anorexia, abdominal cramps and diarrhea. Gastrointestinal absorption may cause the symptoms of cholinesterase inhibition as described in acute inhalation. Symptoms may begin within minutes or be delayed.

PHYSICAL AND CHEMICAL INFORMATION

Appearance:	Pale yellow liquid with mercaptan odour
Molecular Weight of active material:	350.57
Melting Point of active material:	106-108°F (41-42°C)
Specific Gravity:	1.10 @ 25°C
Water Solubility:	2 ppm @ 25°C
Solvent Solubility:	Soluble in acetone, benzene, chloroform, ethanol, isooctane, methanol, and organic solvents

The information presented herein, while not guaranteed, was prepared by technically knowledgeable personnel and to the best of our knowledge is true and accurate. Sanonda (Australia) Pty. Ltd. makes no representation as to the completeness or accuracy thereof. It is not intended to be all inclusive and the manner and conditions of use and handling may involve other or additional considerations. Sanonda (Australia) will not be responsible for damages of any nature whatsoever resulting from use or reliance of information given in this Material Safety Data Sheet. Physical data of material may vary from batch to batch.