

AMBER



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MATERIAL SAFETY DATA SHEET

Product Name **DAVID GRAYS CHLORPYRIFOS 500**

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Supplier Name DAVID GRAY & CO PTY LIMITED
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Synonym(s) 26792 - 5L - MANUFACTURER'S CODE • 26872 - 20L - MANUFACTURER'S CODE • CHLORPYRIFOS 500

Use(s) AGRICULTURAL APPLICATIONS • PEST CONTROL • PESTICIDE

MSDS Date 21 Jun 2010

2. HAZARDS IDENTIFICATION

CLASSIFIED AS HAZARDOUS ACCORDING TO ASCC CRITERIA

RISK PHRASES

R24/25 Toxic in contact with skin and if swallowed.
R38 Irritating to skin.

SAFETY PHRASES

S16 Keep away from sources of ignition - No smoking.
S25 Avoid contact with eyes.
S28 After contact with skin, wash immediately with plenty of water.
S29 Do not empty into drains.
S36/37 Wear suitable protective clothing and gloves.
S44 If you feel unwell, contact a doctor or Poisons Information Centre immediately (show label where possible).

CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE

UN No. 3018 **DG Class** 6.1 **Subsidiary Risk(s)** None Allocated
Packing Group III **Hazchem Code** 2X

3. COMPOSITION/ INFORMATION ON INGREDIENTS

Ingredient	Formula	CAS No.	Content
SOLVENT NAPHTHA (PETROLEUM), HEAVY AROMATIC	Not Available	64742-94-5	30-60%
CHLORPYRIFOS	C9-H11-C13-N-O3-P-S	2921-88-2	50%
ADDITIVE(S)	Not Available	Not Available	<20%

AMBER

Product Name **DAVID GRAYS CHLORPYRIFOS 500**

4. FIRST AID MEASURES

- Eye** If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.
- Inhalation** If inhaled, remove from contaminated area. If poisoning occurs, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or doctor. Give one atropine tablet every 5 minutes until dryness of the mouth occurs. Apply artificial respiration if not breathing.
- Skin** If skin contact occurs, remove any contaminated clothing and flush skin with running water. If poisoned, give 1 atropine tablet every 5 minutes until dryness of the mouth occurs. Remove from contaminated area. Seek immediate medical advice.
- Ingestion** For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, give one atropine tablet every 5 minutes until dryness of the mouth occurs. Seek medical attention immediately.
- Advice to Doctor** Treat symptomatically.
- First Aid Facilities** Atropine tablets should be available.

5. FIRE FIGHTING MEASURES

- Flammability** Combustible. May evolve toxic gases (phosphorus/ carbon/ nitrogen/ sulphur oxides, hydrogen chloride, phosgene, hydrocarbons) when heated to decomposition. May also evolve ethyl sulphide and diethyl sulphide when heated to decomposition.
- Fire and Explosion** 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 combating fire. Use waterfog to cool intact containers and nearby storage areas. May also evolve ethyl sulphide and diethyl sulphide when heated to decomposition.
- Extinguishing** Dry agent, carbon dioxide or foam. Prevent contamination of drains or waterways.
- Hazchem Code** 2X

6. ACCIDENTAL RELEASE MEASURES

- Spillage** Contact emergency services where appropriate. Use personal protective equipment. Clear area of all unprotected personnel. Ventilate area where possible. Contain spillage, then cover / absorb spill with non-combustible absorbant material (vermiculite, sand, or similar), collect and place in suitable containers for disposal. Prevent spill entering drains or waterways. Only trained personnel should undertake clean up.

7. STORAGE AND HANDLING

- Storage** Store in a cool, dry, well ventilated area, removed from moisture, oxidising agents, acids, alkalis, iron, mild/galvanised steel, zinc, heat or ignition sources and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use. Large storage areas should have appropriate fire protection systems. Store as a Class C1 Combustible Liquid (AS1940). Also store removed from direct sunlight and dyes.
- Handling** Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

8. EXPOSURE CONTROLS/ PERSONAL PROTECTION

Exposure Stds

Ingredient	Reference	TWA		STEL	
Chlorpyrifos	ASCC (AUS)	--	0.2 mg/m3	--	--

- Biological Limits** No biological limit allocated.

Product Name **DAVID GRAYS CHLORPYRIFOS 500**

Engineering Controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended. Maintain vapour levels below the recommended exposure standard.

PPE Wear splash-proof goggles, a PVC apron, safety boots, viton (R) gloves, coveralls and a Type A (Organic vapour) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	CLEAR YELLOW LIQUID	Solubility (Water)	EMULSIFIES
Odour	SLIGHT ODOUR	Specific Gravity	1.09
pH	NOT AVAILABLE	% Volatiles	NOT AVAILABLE
Vapour Pressure	2.5x10 ⁻⁶ kPa @20°C (chlorpyrifos)	Flammability	CLASS C1 COMBUSTIBLE
Vapour Density	NOT AVAILABLE	Flash Point	> 62°C
Boiling Point	NOT AVAILABLE	Upper Explosion Limit	NOT AVAILABLE
Melting Point	< -20°C	Lower Explosion Limit	NOT AVAILABLE
Evaporation Rate	NOT AVAILABLE		
Appearance	CLEAR YELLOW LIQUID	Decomposition Temperature	> 130°C
Odour	SLIGHT ODOUR		

10. STABILITY AND REACTIVITY

Chemical Stability	Stable under recommended conditions of storage.
Conditions to Avoid	Avoid heat, sparks, open flames and other ignition sources.
Material to Avoid	Incompatible with oxidising agents (eg. hypochlorites), acids (eg. nitric acid), alkalis (eg. hydroxides), iron, zinc, stainless/galvanised steel and heat sources. Also incompatible with dyes. The manufacturer reports that this product is corrosive to copper and brass.
Hazardous Decomposition Products	May evolve toxic gases (phosphorus/ carbon/ nitrogen/ sulphur oxides, hydrogen chloride, phosgene, hydrocarbons) when heated to decomposition. May also evolve ethyl sulphide and diethyl sulphide when heated to decomposition.
Hazardous Reactions	Hazardous polymerization is not expected to occur.

11. TOXICOLOGICAL INFORMATION

Health Hazard Summary	Toxic - irritant. This product has the potential to cause adverse health effects. Use safe work practices to avoid eye or skin contact and inhalation. Cholinesterase inhibitor resulting in the accumulation of acetylcholine, causing rapid twitching of voluntary muscles and finally paralysis. Chronic exposure to some solvents may result in central nervous system (CNS), liver and kidney damage. The potential for adverse health effects may be reduced upon dilution.
Eye	Irritant. Contact may result in irritation, lacrimation, pain, redness and blurring or dimness of vision.
Inhalation	Toxic. Over exposure may result in irritation of the nose and throat, coughing, weakness, nausea, headache, vomiting and mild chest pain. High level exposure may result in dizziness, incoordination, excessive salivation, sweating, and breathing difficulties. Cholinesterase inhibitor. The manufacturer reports that the oral LD50 (rat) is 2600 - 3600 mg/m ³ /4 hours.
Skin	Irritant - toxic. Contact may result in irritation, redness, pain and rash. May be absorbed through skin with harmful effects. The manufacturer reports the dermal LD50 (rabbit) is 2000 mg/kg.
Ingestion	Toxic. Ingestion may result in nausea, vomiting, abdominal pain, diarrhoea, fatigue, and sweating and/or salivation. Ingestion of large quantities may result in breathing difficulties, muscle spasms and convulsions. Aspiration may result in chemical pneumonitis and pulmonary oedema.
Toxicity Data	SOLVENT NAPHTHA (PETROLEUM), HEAVY AROMATIC (64742-94-5) LC50 (Inhalation): > 590 mg/m ³ /4 hours (rat) LD50 (Skin): > 2 mL/kg (rabbit)

AMBER

Product Name **DAVID GRAYS CHLORPYRIFOS 500**

LDLo (Ingestion): 5 mL/kg (rat)
CHLORPYRIFOS (2921-88-2)
Health Surveillance: Required [NOHSC:1005(1994)]
LC50 (Inhalation): 2600-3600 mg/m³/4 hours (rat)
LD50 (Ingestion): 60 mg/kg (mouse)
LD50 (Skin): 202 mg/kg (rat)
LDLo (Skin): 100 mg/kg (guinea pig)
TDLo (Ingestion): 10 mg/kg (mouse)

12. ECOLOGICAL INFORMATION

Environment Chlorpyrifos is highly toxic to insects, fish and mammals. **SOIL:** Can degrade by hydrolysis, volatilisation & microbial degradation. Soil persistence of 60-120 days is usual. **WATER:** Will absorb to sediment. Hydrolysis half-life: 35-78 days. Photolysis not expected to be significant. Microbial degradation may contribute. Volatilisation half-life: ~6 days. **ATMOSPHERE:** Will react with hydroxyl radicals (half-life: 14 hrs).

13. DISPOSAL CONSIDERATIONS

Waste Disposal For small amounts absorb with sand, vermiculite or similar and dispose of to an approved landfill site only. Contact the manufacturer for additional information if larger amounts are involved. Triple rinse (or preferably pressure rinse) containers before disposal. Add rinsings to spray tank.

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION



CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE

Shipping Name	ORGANOPHOSPHORUS PESTICIDE, LIQUID, TOXIC				
UN No.	3018	DG Class	6.1	Subsidiary Risk(s)	None Allocated
Packing Group	III	Hazchem Code	2X	GTEPG	6A1

IATA

Shipping Name	ORGANOPHOSPHORUS PESTICIDE, LIQUID, TOXIC				
UN No.	3018	DG Class	6.1	Subsidiary Risk(s)	None Allocated
Packing Group	III				

IMDG

Shipping Name	ORGANOPHOSPHORUS PESTICIDE, LIQUID, TOXIC				
UN No.	3018	DG Class	6.1	Subsidiary Risk(s)	None Allocated
Packing Group	III				

15. REGULATORY INFORMATION

Poison Schedule Classified as a Schedule 6 (S6) Poison using the criteria in the Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

AICS All chemicals listed on the Australian Inventory of Chemical Substances (AICS).

16. OTHER INFORMATION

Additional Information ABBREVIATIONS:
ADB - Air-Dry Basis.
BEI - Biological Exposure Indice(s)
CAS# - Chemical Abstract Service number - used to uniquely identify chemical compounds.
CNS - Central Nervous System.
EC No - European Community Number.

Product Name DAVID GRAYS CHLORPYRIFOS 500

IARC - International Agency for Research on Cancer.
M - moles per litre, a unit of concentration.
mg/m³ - Milligrams per cubic metre.
NOS - Not Otherwise Specified.
NTP - National Toxicology Program.
OSHA - Occupational Safety and Health Administration.
pH - relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm - Parts Per Million.
RTECS - Registry of Toxic Effects of Chemical Substances.
TWA/ES - Time Weighted Average or Exposure Standard.

HEALTH EFFECTS FROM EXPOSURE:

It should be noted that the effects from exposure to this product will depend on several factors including: frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a Chem Alert report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:

The recommendation for protective equipment contained within this Chem Alert report is provided as a guide only. Factors such as method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

COLOUR RATING SYSTEM: RMT has assigned all Chem Alert reports a colour rating of Green, Amber or Red for the sole purpose of providing users with a quick and easy means of determining the hazardous nature of a product. Safe handling recommendations are provided in all Chem Alert reports so as to clearly identify how users can control the hazards and thereby reduce the risk (or likelihood) of adverse effects. As a general guideline, a Green colour rating indicates a low hazard, an Amber colour rating indicates a moderate hazard and a Red colour rating indicates a high hazard.

While all due care has been taken by RMT in the preparation of the Colour Rating System, it is intended as a guide only and RMT does not provide any warranty in relation to the accuracy of the Colour Rating System. As far as is lawfully possible, RMT accepts no liability or responsibility whatsoever for the actions or omissions of any person in reliance on the Colour Rating System.

Report Status

This document has been compiled by RMT on behalf of the manufacturer of the product and serves as the manufacturer's Material Safety Data Sheet ('MSDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer.

While RMT has taken all due care to include accurate and up-to-date information in this MSDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this MSDS.

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End of Report