

Section 1 - Identification of Chemical Product and Company

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Trade Name: Garden King Grubkil 500
Product Use: Controls lawn grubs and armyworms in lawns
Creation Date: April 2005
Revision Date: April 2008

Section 2 - Hazards Identification

Statement of Hazardous Nature

This product is classified as hazardous according to the criteria of ASCC Australia. (Xn Harmful)
Dangerous Good according to the Australian Dangerous Goods (ADG) Code.

Risk Phrases: R22 Harmful if swallowed, R36/38 Irritating to eyes & skin, R43 May cause sensitisation by skin contact

Safety Phrases: S24 Avoid contact with skin, S37/39 wear suitable gloves and eye/face protection

SUSDP Classification: S6

ADG Classification: 6.1 **Sub Risk Class:** 3

UN Number: 3017

Packaging Group: II

Hazchem Code: 3W

Chemical Family: Active ingredient is an Organophosphorus pesticide.

Emergency Overview

Physical Description & colour: Clear colourless liquid

Odour: Mild odour

Major Health Hazards: Trichlorfon is a cholinesterase inhibitor. Regular absorption of low quantities of the concentrate or the spray may result in cholinesterase inhibition. Full recovery follows after a period without exposure.

Potential Health Effects

Inhalation: Poisoning may occur by absorption through the lungs if the active ingredient is inhaled; however the active ingredient is relatively non-volatile and thus inhalation of vapour from the concentrate is unlikely to lead to excessive absorption of Trichlorfon. During application of the product inhalation of spray mist must be avoided.

Skin Contact: This product is readily absorbed through the skin of people in harmful amounts. Regular or prolonged contact of the product with the skin could lead to defatting of the skin by the solvents and secondary dermatitis.

Eye Contact: This product is irritating to the eyes. It will cause discomfort such as stinging pain, watering and redness of the eyes. Effects may last after exposure has ceased, and in severe exposure, long lasting or even permanent effects such as corneal damage can occur.

Ingestion: Data suggests that this product is harmful if swallowed.

Carcinogen Status:

ASCC: No significant ingredient is classified as carcinogenic by ASCC.

NTP: No significant ingredient is classified as carcinogenic by NTP.

IARC: No significant ingredient is classified as carcinogenic by IARC.

Section 3 - Composition/Information on Ingredients

Ingredients	CAS No	Conc, %	TWA (mg/m3)	STEL (mg/m3)
Trichlorfon	52-68-6	50	not set	not set
Propylene glycol monomethyl ether	107-98-2	30-60	369	553
N-Methyl-2-pyrrolidone	872-50-4	10-30	103	309

This is a commercial product whose exact ratio of components may vary. Trace quantities of impurities are also likely. The TWA exposure value is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week. The STEL (Short Term Exposure Limit) is an exposure value that should not be exceeded for more than 15 minutes and should not be repeated for more than 4 times per day. There should be at least 60 minutes between successive exposures at the STEL. The term "peak" is used when the TWA limit, because of the rapid action of the substance, should never be exceeded, even briefly.

Section 4 - First Aid Measures

General Information:

You should call The Poisons Information Centre if you feel that 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.

Eyebaths or eyewash stations and safety deluge showers should be provided where this product is being used.

Atropine tablets 0.6mg should be available in the area where this product is used, or in a nearby unlocked medicine cabinet. If swallowed, give one atropine tablet every 5 minutes until dryness of the mouth occurs - if poisoned by skin absorption or through lungs, remove any contaminated clothing, wash skin thoroughly and give atropine tablets. Get to a doctor or hospital quickly. Note that this instruction may differ from the product label. The label is written on the basis that the product is a home garden preparation, used and handled domestically in small quantities. This MSDS is written for persons who may come into contact with larger quantities, and more regularly (such as packers, handlers and so-on).

Ingestion: Contact Poisons Information centre or Doctor immediately. If advised by medical advice, give atropine tablets until dryness of the mouth occurs. Get to a doctor or hospital quickly

Inhalation: Remove from contaminated area. Give oxygen and if necessary, artificial respiration. If giving mouth-to-mouth resuscitation wash out patients mouth and lips - do not inhale patient's expired air. Get to a hospital or doctor quickly.

Skin Contact: If product gets on skin, immediately remove contaminated clothing and wash skin thoroughly with soap and running water for at least 15 minutes. Seek medical attention. If safety shower is available, use it promptly. Because of the toxicity of this product, speed may save a life.

Eye Contact: If this product comes into contact with eyes, hold open and wash with running water for at least 15 minutes. Ensure irrigation under eyelids by occasionally lifting them. Do not try to remove contact lenses unless trained. Seek medical attention.

Advice to Doctor: The degradation product dichlorvos, usually formed in vivo, is a cholinesterase inhibitor. Atropine treatment may be necessary or treat with up to 10mg IV diazepam. Curare therapy is contraindicated. Do NOT give adrenergic amines, aminophylline, succinylcholine, phenothiazines or reserpine alkaloids or oils. Treat bronchopneumonia secondary to pulmonary oedema.

Section 5 - Fire Fighting Measures

Fire and Explosion Hazards: There is a moderate risk of an explosion from this product if it is involved in a fire. Fire-fighters should take care and appropriate precautions. Fire decomposition products from this product may form toxic and corrosive mixtures in confined spaces. 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.

Extinguishing Media: Carbon dioxide, dry chemical, foam, water fog

Fire Fighting: If a significant quantity of this product is involved in a fire, call the fire brigade.

Flash point: 37°C

Upper Flammability Limit: no data

Lower Flammability Limit: no data

Auto ignition temperature: no data

Flammability Class: Flammable liquid

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Decomposition Products: Carbon dioxide, and if combustion is incomplete, carbon monoxide and smoke. Oxides of phosphorus. Hydrogen chloride gas, chlorides, and in some circumstances, phosgene. Water.

Section 6 - Accidental Release Measures

Accidental release: 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 face mask, face shield, gauntlets and self contained breathing apparatus. See above under Personal Protection regarding Australian Standards relating to personal protective equipment. Stop leak if safe to do so, and contain spill. Absorb onto sand, vermiculite or other suitable absorbent material. Sweep up and shovel or collect recoverable product into labelled containers for recycling or salvage. Can be slippery on floors, especially when wet. 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. Dispose of only in accord with all regulations. 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 minimise 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. The measures detailed below under "Storage" should be followed during handling in order to minimise risks to persons using the product in the workplace. Also, avoid contact or contamination of product with incompatible materials listed in Section 10.

Storage: This product is a S6 Poison. Observe all relevant regulations regarding sale, transport and storage of this class of product. Containers should be kept closed in order to minimise contamination. Keep from extreme heat and open flames, and make sure that the product does not come into contact with substances listed under "Materials to avoid" in Section 10. Check packaging - there may be further storage instructions on the label.

Section 8 - Exposure Controls and Personal Protection

The following Australian Standards will provide general advice 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**.

Exposure Limits	TWA (mg/m ³)	STEL (mg/m ³)	ADI (mg/Kg/day)	NOEL (mg/Kg/day)
Trichlorfon	not set	not set	0.002	0.2
Propylene glycol monomethyl ether	369	553	not set	not set
N-Methyl-2-pyrrolidone	103	309	not set	not set

The STEL (Short Term Exposure Limit) is an exposure value that should not be exceeded for more than 15 minutes and should not be repeated for more than 4 times per day. There should be at least 60 minutes between successive exposures at the STEL. The exposure value at the TWA is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week. A TWA has not been established by Worksafe Australia for any of the major ingredients in this product. There is a blanket limit of 10mg/m³ for dusts or mists when limits have not otherwise been established. The nature of this product makes it unlikely that this level will be approached in normal use. ADI means Acceptable Daily Intake and NOEL means No-observable-effect-level. Values taken from Australian ADI List, Dec 2003.

When preparing spray and using the prepared spray wear cotton overalls buttoned to the neck and wrist, a washable hat, elbow-length PVC gloves, goggles, impervious footwear and half face piece respirator with combined dust and gas cartridge.

Ventilation: No special ventilation requirements are normally necessary for this product. However make sure that the work environment remains clean and that vapours and mists are minimised.

Eye Protection: Protective eyewear must be worn when using this product. Coverage should extend to all facial areas. Eye contact will prove at best painful and will probably cause irreversible damage if contact is other than brief.

Skin Protection: Impermeable protective gloves and Clean impermeable overalls or protective clothing should be worn, preferably with an apron, since absorption through the skin is likely to lead to serious harm. All skin areas should be covered. If contaminated, laundry should be advised of the nature of the contamination, or, preferably, clothing should be destroyed.

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Protective Material Types: Impermeable protective material. Consult AS2919 for advice on Industrial Clothing.

Respirator: Because of the danger of this product to the respiratory system, it should only be used when the user is equipped with full respiratory equipment, unless used in a fume cupboard or other positively ventilated area designed for the protection of users. Inhalation of even minor quantities of this product is likely to lead to serious harm or death. Thoroughly wash equipment after use.

Always wash hands before smoking, eating or using the toilet. Wash contaminated clothing and other protective equipment before storing or re-using.

Section 9 - Physical and Chemical Properties:

Physical Description & colour:	Clear, colourless solution.
Odour:	Mild odour.
Boiling Point:	Known to be >120°C
Melting Point:	No specific data. Liquid at normal temperatures
Flash Point:	37°C
Volatiles:	no data
Vapour Pressure:	no data
Vapour Density:	no data.
Specific Gravity:	1.15
Water Solubility:	Soluble
pH:	no data
Volatility:	no data.
Evaporation Rate:	no data.
Auto ignition temp:	no data.
Corrosiveness:	Not corrosive.

Section 10 - Stability and Reactivity

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

Conditions to Avoid: Heat, flames, ignition sources and incompatibles

Incompatibilities: Strong acids and bases

Fire Decomposition Products: Carbon dioxide, and if combustion is incomplete, carbon monoxide and smoke. Oxides of phosphorus. Hydrogen chloride gas, chlorides, and in some circumstances, phosgene. Water.

Polymerisation: This product is unlikely to undergo polymerisation processes.

Section 11 - Toxicological Information

Trichlorfon is a cholinesterase inhibitor. Regular absorption of low quantities of the concentrate or the spray may result in cholinesterase inhibition. Full recovery follows after a period without exposure. The onset of poisoning is rapid; the signs and symptoms being exhaustion, headache, weakness, confusion, vomiting, abdominal pain, excessive sweating and salivation. In severe case of poisoning, muscle spasms, unconsciousness, convulsions may develop and extend to respiratory failure.

Trichlorfon has been used medically as an anthelmintic. The World Health Organisation has estimated that more than 1 million people have been treated for parasites using this compound. When used as a drug, a total dosage as high as 37.7 mg/Kg produced very mild poisoning and a dosage of 10 mg/Kg/day had no untoward effects. In animal studies Trichlorfon was shown to be a sensitiser but no cases of sensitisation resulting from occupational exposure have been reported after many years of use. It is not listed as carcinogenic in Worksafe's document "Exposure Standards for Atmospheric Contaminants in the Occupational Environment" (May 1995).

For Trichlorfon: LD₅₀ Oral (Rat) = 560-630mg/kg LD₅₀ Dermal (Rat) >2000mg/kg

LC₅₀ Inhalation (Rat) = 0.53mg/L/4hr

Section 12 - Ecological Information

Aquatic Toxicity: Moderately toxic to fish: LC₅₀ (96 hr) values as follows: perch 0.75mg/L; roach 30mg/L; trout 4.8mg/L; pike 1.0mg/L; carp 15mg/L

Terrestrial Toxicity

Bees: Toxic to bees

Environmental Fate: no data

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Section 13 - Disposal Considerations

Disposal: Normally suitable for disposal at approved land waste site. Instructions for the disposal of containers is found on the product label.

Section 14 - Transport Information

ADG Code: This product is classed as UN3017, Dangerous Goods Class 6.1 Flammable liquids. Proper Shipping name is ORGANOPHOSPHORUS PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flash point not less than 23°C. 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 (Poisonous Gases), 4.2 (Spontaneously Combustible Substances), 5.1 (Oxidising Agents), 5.2 (Organic Peroxides), 6 (Poisonous 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 Ton-Toxic Gases), 4.1 (Flammable Solids), 4.3 (Dangerous When Wet Substances), 6 (Poisonous Substances, except where Flammable Liquid is nitromethane), 8 (Corrosive Substances), 9 (Miscellaneous Dangerous Goods), Foodstuffs or foodstuff empties.

Section 15 - Regulatory Information

AICS: All of the significant ingredients in this formulation are to be found in the public AICS Database. Copper Oxychloride is mentioned in the SUSDP.

Section 16 - Other Information

This MSDS contains only safety-related information. For other data see product literature.

Acronyms:

ADG Code	Australian Code for the Transport of Dangerous Goods by Road and Rail
AICS	Australian Inventory of Chemical Substances
ASCC	National Occupational Health and Safety Commission
CAS number	Chemical Abstracts Service Registry Number
Hazchem Number	Emergency action code of numbers and letters that provide information to emergency services especially fire-fighters
IARC	International Agency for Research on Cancer
NOS	Not otherwise specified
NTP	National Toxicology Program (USA)
R-Phrase	Risk Phrase
SUSDP	Standard for the Uniform Scheduling of Drugs & Poisons
UN Number	United Nations Number

THIS MSDS SUMMARISES OUR BEST KNOWLEDGE OF THE HEALTH AND SAFETY HAZARD INFORMATION OF THE PRODUCT AND HOW TO SAFELY HANDLE AND USE THE PRODUCT IN THE WORKPLACE. EACH USER MUST REVIEW THIS MSDS IN THE CONTEXT OF HOW THE PRODUCT WILL BE HANDLED AND USED IN THE WORKPLACE.

IF CLARIFICATION OR FURTHER INFORMATION IS NEEDED TO ENSURE THAT AN APPROPRIATE RISK ASSESSMENT CAN BE MADE, THE USER SHOULD CONTACT THIS COMPANY SO WE CAN ATTEMPT TO OBTAIN ADDITIONAL INFORMATION FROM OUR SUPPLIERS. OUR RESPONSIBILITY FOR PRODUCTS SOLD IS SUBJECT TO OUR STANDARD TERMS AND CONDITIONS, A COPY OF WHICH IS SENT TO OUR CUSTOMERS AND IS ALSO AVAILABLE ON REQUEST.

Please read all labels carefully before using product.

This MSDS is prepared in accord with the ASCC document "National Code of Practice for the Preparation of Material Safety Data Sheets" 2nd Edition [ASCC:2011(2003)]

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