



COLIN CAMPBELL (CHEMICALS) PTY. LTD.

MATERIAL SAFETY DATA SHEET

Date of Issue: 1 December 2016

1) IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name: CAMPBELL PENNSIDE FLOWABLE
MICROENCAPSULATED INSECTICIDE

Other Names: Diazinon

Chemical Group: Organophosphate

CAS No.:

Recommended Use: Insecticide for use on recreational turf.

Supplier Details: Colin Campbell (Chemicals) Pty Ltd ABN 29 000 045 590
5 Blackfriar Place
Wetherill Park NSW 2164

Telephone: (02) 9725 2544

Fax: (02) 9604 7768

Email: ccesyd@campbellchemicals.com.au

Website: www.campbellchemicals.com.au

Contact: Product Development Manager – (02) 9725 2544

Emergency Telephone Number: 13 11 26 (Poisons Information Centre)

2) HAZARDS IDENTIFICATION

GHS classification: Acute toxicity dermal : Category 4
Carcinogenicity : Category 1
Acute toxicity inhalation: Category ½
Hazardous to aquatic environment - Short term/acute : Category 1
Hazardous to aquatic environment - Short term/Chronic : Category 1

GHS Signal Words: DANGER

Hazard Statements : H301 : Harmful if swallowed
H350 : May cause cancer
H373 May cause damage to organs through prolonged or repeated exposure
H400 : Very toxic to aquatic life
H410 : Very toxic to aquatic life with long lasting effects.

General Precautionary Statements : P101 : If medical advice is needed, have product container or label at hand.
P102 : Keep out of reach of children
P103 : Read label before use.



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Pictograms :



Precautionary statements Prevention:

P201 : Obtain special instructions before use.
P202 : Do not handle until all safety directions have been read and understood.
P260 : Do not breathe fumes, mists, vapours or spray.
P261 : Avoid breathing fumes, mists, vapours or spray.
P262 : Do not get in eyes, on skin, or on clothing.
P264 : Wash contacted areas thoroughly after handling.
P270 : Do not eat, drink or smoke when using this product.
P273 : Avoid release to the environment.
P281 : Use personal protective equipment as required.

Precautionary statements Response:

P314 : Get medical advice or attention if you feel unwell.
P361 : Remove contaminated clothing immediately.
P301 + P312 : IF SWALLOWED : Call a Poisons Information Centre or doctor if you feel unwell.
P301 + P330 + P312 : IF SWALLOWED : Call a Poisons Information Centre or doctor if you feel unwell.
P301 + P330 + P331 : IF SWALLOWED : Rinse mouth. Do NOT induce vomiting.
P302 + P352 : IF ON SKIN : Wash with plenty of soap and water.
P308 + P313 : If exposed or concerned : Get medical advice.
P370 + P378 Not combustible. Use extinguishing media suited to burning materials.

Storage :

P405 : Store locked up.
P410 : Protect from sunlight.
P402 + P404 : Store in a dry place. Store in a closed container.
P403 + P233 : Store in a well-ventilated place. Keep container tightly closed

Disposal:

P501 Dispose of contents and container as specified on the registered label.

Other information :

Dangerous goods.
Hazardous substance.

3) COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	CAS Number	Concentration
Diazinon	333-41-5	240g/L
Other ingredients	Non hazardous	60-100%



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4) FIRST AID MEASURES

If poisoning occurs, move out of dangerous area immediately contact a doctor or Poison Information Centre (Ph: 13 11 26) and follow the advice given.

Show this Material Safety Data Sheet to the doctor.

The symptoms associated with Diazinon poisoning in humans include weakness, headaches, tightness in the chest, blurred vision, nonreactive pinpoint pupils, salivation, sweating, nausea, vomiting, diarrhoea, abdominal cramps, and slurred speech. Death has occurred in some instances from both dermal and oral exposures at very high levels. Danger of cumulative effects, harmful if swallowed. Signs and symptoms associated with mild exposures to organophosphate and carbamate pesticides include : headache, fatigue, dizziness, loss of appetite with nausea, stomach cramps and diarrhoea, blurred vision associated with excessive tearing, contracted pupils of the eye, excessive sweating and salivation, slowed heartbeat (often fewer than 50 beats per minute), rippling of surface muscles just below the skin. These symptoms may be mistaken for those of flu, heat stroke or heat exhaustion, or upset stomach. Moderately severe organophosphate and carbamate poisoning cases exhibit all the signs and symptoms found in mild poisonings, but in addition the victim is unable to walk, often complains of chest discomfort and tightness, exhibits marked constriction of the pupils (pinpoint pupils), exhibits muscle twitching, has involuntary urination and bowel movement. Severe poisonings are indicated by incontinence, unconsciousness and seizures.

If inhaled: First aid is often not required. If in doubt, contact a Poisons Information Centre or doctor at once.

In case of skin contact: Wash gently and thoroughly affected areas with mild soap and plenty of water for 10-20 minutes or until product is removed..

In case of eye contact: No effects expected. If irritation does occur, check and remove any contact lenses. Protect unharmed eye. Rinse eyes immediately with clean water for at least 5 minutes. Keep eye wide open while rinsing. Obtain medical advice if irritation becomes painful or lasts more than a few minutes.

If swallowed: If swallowed, do NOT induce vomiting. Wash mouth with water and contact a Poisons Information Centre, or call a doctor.

First Aid facilities Ensure eye wash and safety shower are available.

Medical Attention: Symptoms may be delayed. The first aid procedure should be established in consultation with a doctor responsible for industrial medicine.

5) FIRE FIGHTING MEASURES

Extinguishing media Not combustible. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Hazard from combustion products The major hazard in fires is usually inhalation of heated toxic or oxygen deficient (or both), fire gases. There is little risk of explosion from this product if commercial quantities are involved in a fire. This product is likely to decompose only after heating to dryness, followed by further strong heating. Fire decomposition products from this product are likely to be irritating if inhaled.



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Precautions for fighting fires

Fire fighters should wear full protective gear, including self-contained breathing apparatus (AS/NZS 1715/1716). Keep unnecessary people away. If it can be done safely remove intact containers from the fire. Bund area with sand or earth to prevent contamination of drains or waterways. Dispose of fire residues and contaminated fire extinguishing water in accordance with local regulations. Do not release contaminated water into the environment.

Hazchem Code

3Z

6) ACCIDENTAL RELEASE MEASURES

Avoid contact with spilled material or contaminated surfaces. Do not smoke, eat or drink during the clean up process. Wear personal protective clothing and equipment as detailed in Section 8 PERSONAL PROTECTION. Keep people and animals away. Ensure adequate ventilation. Contain spill and absorb with earth, sand, clay or other absorbent material. Prevent spilled material from entering drains or watercourses. Collect and store in properly labelled drums for safe disposal. Clean floor with a damp cloth and place it in the drum. Seal drums and label ready for safe disposal. Deal with all spillages immediately. If contamination of drains, streams, watercourses etc is unavoidable warn the local water authority.

7) HANDLING AND STORAGE

Handling

Keep out of reach of children. Keep exposure to this product to a minimum, and minimise the quantities kept in work areas. Will irritate eyes and skin. Avoid contact with eyes and skin. Do not inhale spray mist. 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 and contaminated clothing.

Storage

Store in the closed original container in a cool well ventilated area. Do not store for prolonged periods in direct sunlight. Store in a locked room away from children, animals, food, animal feed, seed and fertilisers.

8) EXPOSURE CONTROL/PERSONAL PROTECTION

Exposure Standards (diazinon)

TWA (mg/m ³)	STEL (mg/m ³)
0.1	Not set

Exposure standard – **Time Weighted Average (TWA)** means the average airborne concentration of a particular substance when calculated over a normal eight hour working day, for a five-day working week.

Short Term Exposure Limit (STEL) means the exposure level that may be equalled (but should not be exceeded for no longer than 15 minutes and should not be repeated more than 4 times per day. There should be at least 60 minutes between successive exposures at the STEL.

Biological Limit Values

None allocated



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Engineering Controls	Control process conditions to avoid contact. Use in a well ventilated area only. If natural ventilation is inadequate, use of a fan is suggested.
Personal Protective Equipment	<p>Eyes: Protective glasses or safety goggles. Eye wash bottle with pure water.</p> <p>Clothing: Impervious overalls buttoned to the neck and wrists and a washable hat.</p> <p>Gloves: Polyvinyl alcohol or nitrile-butyl-rubber gloves. Before removing gloves clean them with soap and water.</p> <p>Respiratory: If inhalation is likely an AS/NZS 1715/1716 approved respirator should be worn.</p>

9) PHYSICAL AND CHEMICALS PROPERTIES

Appearance:	Viscous beige liquid
Odour:	Characteristic "rotten fish" odour.
Vapour pressure:	2.37 kPa at 20°C (water vapour pressure)
Relative vapour density:	As for water
Evaporation rate:	As for water
Boiling point:	About 100°C at 100 kPa
Freezing/Melting point:	Below 0°C
pH:	8 – 9 (as supplied)
Solubility:	Miscible in water.
Specific gravity:	1.035 – 1.045 at 25°C
Flash point:	No data
Flammability (explosive) limit:	Not available
Auto ignition temperature:	Not combustible.
Partition coefficient (octanol/water):	No data available.
Viscosity:	No data available
Oxidising properties:	No data available.

10) STABILITY AND REACTIVITY

Chemical stability:	Stable under normal conditions of use and storage.
Conditions to avoid:	This product should be kept in a cool place, preferably below 30°C. Protect this product from light. Store in the closed original container in a dry, well-ventilated area out of direct sunlight.
Incompatible materials :	Strong acids, strong alkalis, organic solvents.
Hazardous decomposition products:	This product is likely to decompose only after heating to dryness, followed by further strong heating. In a fire, formation of carbon monoxide and carbon dioxide can be expected. Water is also formed. May form nitrogen and its compounds and, under some circumstances, oxides of nitrogen. Occasionally hydrogen cyanide gas in reducing atmospheres. May form oxides of phosphorus and other phosphorus



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compounds. Carbon monoxide poisoning produces headache, weakness, nausea, dizziness, confusion, dimness of vision, disturbance of judgement, and unconsciousness followed by coma and death.

Hazardous reactions: Stable under recommended storage conditions. No decomposition if used as directed. Does not polymerise.

10) TOXICOLOGICAL INFORMATION

There are no data to hand indicating any particular target organs.

Inhalation: Available data shows that this product is very toxic, but symptoms are not available. In addition product may be mildly irritating, but is unlikely to cause anything more than mild transient discomfort.
LONG TERM EXPOSURE – No data for health effects associated with long term inhalation.

Skin contact: Available data shows that this product is harmful, but symptoms are not available. In addition product may be mildly irritating, but is unlikely to cause anything more than mild transient discomfort.
LONG TERM EXPOSURE – No data for health effects associated with long term skin exposure.

Eye contact: This product may be irritating to the eyes, but is unlikely to cause anything more than mild transient discomfort.
LONG TERM EXPOSURE – No data for health effects associated with long term eye exposure.

Ingestion: Significant oral exposure is considered to be unlikely. Available data shows that this product is harmful, but symptoms are not available. However, this product may be irritating to mucous membranes, but is unlikely to cause anything more than mild transient discomfort.
LONG TERM EXPOSURE – No data for health effects associated with long term ingestion.

Chronic toxicity: Chronic effects have been observed at doses ranging from 10mg/kg/day for swine to 1000mg/kg/day for rats. Inhibition of red blood cell cholinesterase, and enzyme response occurred at lower doses in the rats. Enzyme inhibition has been documented in red blood cells, in blood plasma, and in brain cells at varying doses and with different species.

Germ cell mutagenicity: Inconclusive data

Carcinogenicity: Diazinon is not considered carcinogenic. Tests on rats over a 2-year period at moderate doses (about 45mg/kg) did not cause tumour development in the test animals. No significant ingredient is classified as carcinogenic by SWA or NTP. Diazinon is classified 2a by IARC – probably carcinogenic to humans.



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Organ toxicity : Diazinon itself is not a potent cholinesterase inhibitor. However, in animals it is converted to diazoxon, a compound that is a strong enzyme inhibitor.

Acute toxicity: Toxic effects of diazinon are due to the inhibition of acetylcholinesterase, an enzyme needed for proper nervous system function. The range of doses that results in toxic effects varies widely with formulation and with the individual species being exposed. The toxicity of encapsulated formulations is relatively low because Diazinon is not released readily while in the digestive tract. Some formulations of the compound can be degraded to more toxic forms. This transformation may occur in air, particularly in the presence of moisture, and by ultraviolet radiation. Most modern Diazinon formulations are stable and do not degrade easily. Symptoms of poisoning are described in Section 4.

Oral toxicity (product as supplied): LD₅₀ >5,000 mg/kg in rats

Dermal toxicity (product as supplied): LD₅₀ >2,000 mg/kg in rats

Inhalation toxicity (product as supplied): LC₅₀ (4-hr) >22.4 mg/L in rats

Sensitisation: No data

Fate in humans and animals: Metabolism and excretion rates for Diazinon are rapid. The half-life of diazinon in animals is 12 hours. The product is passed out of the body through urine and in the faeces. The metabolites account for about 70% of the total amount excreted. Cattle exposed to Diazinon may store the compound in their fat over the short term. One study showed that the compound cleared the cows within 2 weeks after spraying stopped. Application of Diazinon to the skin of cows resulted in trace amounts in milk 24 hours after the application.

11) ECOLOGICAL INFORMATION

Very toxic to fish and aquatic invertebrate, may cause long-term adverse effects to the aquatic environment. This product is biodegradable. It will not accumulate in soil or water or cause long term problems..DO NOT contaminate streams, rivers or waterway with this product or the used containers.

Ecotoxicity: Diazinon:

Fish toxicity:

Diazinon is highly toxic to fish.

LC₅₀ *Oncorhynchus mykiss* (rainbow trout) : 2.6 – 3.2mg/L

Warm water fish such as fathead minnows and goldfish are more resistant to Diazinon with LC₅₀ values ranging up to 15mg/L. There is some evidence that salt-water fish are more susceptible than fresh-water fish.

Birds :

LD₅₀ : 2.75 – 40.8mg/kg

Birds are quite susceptible to Diazinon poisoning. Birds are significantly more susceptible to Diazinon than other wildlife.

Bees : Diazinon is highly toxic to bees.



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**Environmental fate,
persistence and
degradability,
mobility**

Bioconcentration ratios range from 200 in minnows to 17.5 for guppies. These studies show that Diazinon does not bioconcentrate significantly in fish.

Diazinon has a low persistence in soil. The half-life is 2 to 4 weeks. Bacterial enzymes can speed the breakdown of Diazinon and have been used in treating emergency situations such as spills. Diazinon seldom migrates below the top 12mm of soil, but in some instances it may contaminate groundwater.

The breakdown rate in water is dependent on the acidity of the water. At highly acidic levels, one half of the compound disappeared within 12 hours while in a neutral solution the pesticide took 6 months to degrade to one half of the original concentration.

In plants, a low temperature and a high oil content tend to increase the persistence of Diazinon. Generally the half-life is rapid in leafy vegetables, forage crops and grass. The range is 2 to 14 days. In treated rice plants only half the residue was present after 9 days. Diazinon is absorbed by plant roots when applied to the soil and translocated to other parts of the plant.

**Identified harmful
effects on
environment:**

Highly toxic to fish and aquatic invertebrate. It is also toxic to wildlife

Other precautions:

Do not contaminate dams, waterways or sewers with this product.

12) DISPOSAL CONSIDERATIONS

This product should not be allowed to enter drains, water courses or the soil. Do not contaminate ponds, waterways or ditches with chemical or used containers. Triple or preferable pressure rinse containers before disposal. Add rinsings to the mixing tank. Do not dispose of undiluted chemical on-site. If recycling, replace cap and return clean containers to recycler or designated collection point. If not recycling, break, crush or puncture and bury empty containers in a local authority landfill. If no landfill is available bury the containers below 500mm in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots. Empty containers and product should not be burnt.

13) TRANSPORT INFORMATION

Not subject to the Australian Dangerous Goods (ADG) Code in Australia, in packages 500kg(L) or less; or IBCs, but classed as Dangerous by IATA and IMDG/IMSBC criteria when carried by air or sea transport (see details below).

UN No.: 3082
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Diazinon)
Class: 9



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Special provisions : 179, 274, 331, 335, AU01
Packing group: III
Packing instruction : P001, IBC03, LP01

14) REGULATORY INFORMATION

Registered under the Agricultural and Veterinary Chemicals Act 1988 (Commonwealth) Australian Pesticides and Veterinary Medicines Authority approval number: 32915

15) OTHER INFORMATION

Date of revision : 1 December 2016
Reason for revision : Upgrading to GHS format.

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 should read this MSDS and consider the information in the context of the how the product will be handled and used in the workplace including in conjunction with other products.

END OF MSDS