

MATERIAL SAFETY DATA SHEET

Perigen® Defence Residual Insecticide

Date of Issue: September 18th, 2006

1. IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND SUPPLIER

Product name: Perigen® Defence Residual Insecticide
Other names: None
Product code: 6235689 (1 L), 6238041 (20 L)
Chemical group: Pyrethroid
Recommended use: A liquid insecticide concentrate for use in general purpose pest control and fabric and bed-net impregnation
Formulation: Emulsifiable concentrate (EC)
Supplier: Bayer Environmental Science – A Business Group of Bayer CropScience Pty Ltd
ABN 87 000 226 022
Address: 391 - 393 Tooronga Road, East Hawthorn
Victoria 3123, Australia
Telephone: (03) 9248 6888
Facsimile: (03) 9248 6800
Website: www.bayercropscience.com.au
Contact: Technical Manager (03) 9248 6888
Emergency Telephone Number: 1800 033 111 – Orica SH&E Shared Services

2. HAZARDS IDENTIFICATION

HAZARDOUS SUBSTANCE - DANGEROUS GOOD

Harmful: May cause lung damage if swallowed. Harmful if swallowed. Not flammable.

Hazard designation: Hazardous (National Occupational Health and Safety Commission - NOHSC)
Risk phrases: R65 – Harmful: May cause lung damage if swallowed
R22 – Harmful if swallowed
Safety phrases: See Sections 4, 5, 6, 7, 8, 9, 13
ADG classification: Not a "Dangerous good" for transport by road or rail according to the Australian Code for the Transport of Dangerous Goods by Road and Rail. For transport by sea, Perigen Defence Residual Insecticide is a MARINE POLLUTANT. See Section 14.
SUSDP classification: Schedule 6 (Standard for the Uniform Scheduling of Drugs and Poisons)

3. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredients:	CAS Number:	Concentration (g/L):
Permethrin 25:75	[52645-53-1]	500
Hydrocarbon solvent	[64742-94-5]	335
Other ingredients	(non hazardous)	225

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4. FIRST AID MEASURES

If poisoning occurs, immediately contact a doctor or Poisons Information Centre (telephone 13 11 26), and follow the advice given. Show this Material Safety Data Sheet to a doctor.

- Inhalation:** Remove person to fresh air. Keep at rest. Seek medical advice if exposure has been more than trivial. Administer artificial respiration if breathing has stopped.
- Skin contact:** Remove all contaminated clothing and shoes. Wash off skin immediately with soap and plenty of water. Apply vitamin E cream, toilet milks or local anaesthetic creams to reduce irritation if it occurs. Seek medical advice if irritation persists. Launder contaminated clothing before re-use.
- Eye contact:** Immediately rinse eyes thoroughly, including under eyelids, with running water for at least 15 minutes. Seek immediate medical advice.
- Ingestion:** Wash out mouth with water. Do not induce vomiting. Keep patient at rest and seek medical advice.
- First Aid Facilities:** Provide an eyewash station in the workplace.
- Symptoms:** Burning sensations on the skin, irritation of the mucous membranes, coughing and sneezing may be experienced. Following severe intoxication, respiratory effects can include chest tightness, airway hyperreaction, and pulmonary oedema. Possible circulatory effects include tachycardia, hypotension, and palpitations. Gastrointestinal symptoms may include nausea, vomiting, diarrhoea, abdominal pain, and salivation. Potential Central Nervous System effects are dizziness, blurred vision, headache, listlessness, anorexia, somnolence/coma, seizures/convulsions, tremor, ataxia, and muscle fasciculations.
- Medical attention:** There is no specific antidote. Treat symptoms. This product contains a hydrocarbon solvent. Small amounts of liquid aspirated into the respiratory system during ingestion or from vomiting may cause bronchopneumonia or pulmonary oedema.

Treatment

Basic aid, decontamination, symptomatic treatment and if necessary administration of antidote.

Note for physicians

Treat large intakes with gastric lavage, and charcoal administration. Use endotracheal intubation, and artificial respiration (if necessary). Monitor respiratory and cardiac functions. Observe electrocardiograph, and check for pulmonary oedema in event of inhalation. Anticonvulsant therapy with diazepam i.v. No antidote known. Treat symptoms. Recovery should be spontaneous. Elimination by: dialysis, haemo-perfusion. Contraindication – adrenergic compounds, atropine. DO NOT confuse with anticholinesterase compounds. Skin contacted by permethrin must be carefully cleaned with cleansing milk. Symptoms can be partially alleviated by the application of a vitamin E or moisturising cream or anaesthetic ointment. For eyes, instil local anaesthetic drops e.g. 1% amethocaine hydrochloride eye drops. Give analgesics as necessary.

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5. FIRE FIGHTING MEASURES

Extinguishing media:	Foam, dry chemical or water spray. Do not use a water jet from a fire hose.
Hazards from combustion products:	In the event of fire, hydrogen chloride, carbon monoxide and carbon dioxide may be released.
Precautions for fire fighters:	Fire fighters should wear full protective gear, including self-contained breathing apparatus (AS/NZS 1716), as toxic and irritating decomposition products may be produced in a fire. If it can be done safely, remove intact containers from the fire. Otherwise, use water spray to cool them. Bund area to prevent contamination of water sources. Dispose of fire control extinguishing agent and spillage later in a safe manner. Do not release contaminated water into the environment.

6. ACCIDENTAL RELEASE MEASURES

Dealing with spills and disposals may result in the potential for increased personal exposure. Protective clothing and equipment as described in the PERSONAL PROTECTION section should be worn. Avoid contact with spilled material or contaminated surfaces. Keep people and animals away. Prevent spill from entering drains, sewers or any body of water. Contain and absorb with sand, earth or inert absorbent. Scoop or shovel into sealable containers for disposal in accordance with applicable local, state and federal regulations.

7. HANDLING AND STORAGE

Handling:	Keep out of reach of children. Avoid contact with skin and eyes and do not inhale spray mist. Use only in a well-ventilated area. Do not apply in the presence of naked flames, hot surfaces or unprotected electrical equipment. Use proper grounding procedures.
Storage:	Store product in the closed, original container in a cool, well-ventilated area away from direct sunlight.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure standards:	No exposure standard has been assigned by the National Occupational Health and Safety Commission (Worksafe Australia). The manufacturer of the hydrocarbon solvent recommends an occupational exposure limit of 100 ppm total hydrocarbons.										
Engineering controls:	Control process conditions to avoid contact. Use local exhaust ventilation. Keep product away from sources of ignition.										
Personal Protective Equipment:	<table><tr><td>Eyes:</td><td>Avoid contact with the eyes. Wear safety goggles. Wear a face shield if splashing is possible.</td></tr><tr><td>Clothing:</td><td>Wear suitable protective clothing. Protective clothing must be stored separately from private clothing.</td></tr><tr><td>Gloves:</td><td>Avoid contact with the skin. Wear elbow-length PVC or nitrile gloves.</td></tr><tr><td>Respiratory:</td><td>Wear an approved respirator to prevent inhalation, if other control measures are inadequate.</td></tr><tr><td>Other:</td><td>Do not eat, drink or smoke until after washing. Wash thoroughly after handling. After each day's use wash gloves, goggles and contaminated clothing.</td></tr></table>	Eyes:	Avoid contact with the eyes. Wear safety goggles. Wear a face shield if splashing is possible.	Clothing:	Wear suitable protective clothing. Protective clothing must be stored separately from private clothing.	Gloves:	Avoid contact with the skin. Wear elbow-length PVC or nitrile gloves.	Respiratory:	Wear an approved respirator to prevent inhalation, if other control measures are inadequate.	Other:	Do not eat, drink or smoke until after washing. Wash thoroughly after handling. After each day's use wash gloves, goggles and contaminated clothing.
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9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear yellow limpid liquid
Odour:	Aromatic solvent odour
Vapour pressure:	No data
Boiling point:	184°C
Freezing/melting point:	Not available
Solubility:	Emulsifies
Density:	1.06 at 20°C
Flash Point:	72°C
Flammability (explosive) limits:	0.6 - 7.0% (solvent)
Auto-ignition temperature:	> 450°C (solvent)
Percent volatiles:	~38
Octanol/water partition coefficient:	Not available
Formulation:	Emulsifiable concentrate

10. STABILITY AND REACTIVITY

Chemical stability:	Not available
Hazardous polymerisation:	Not available
Conditions to avoid:	Avoid extremes of temperature and direct sunlight.
Incompatible materials:	Incompatible with strong oxidising agents
Hazardous decomposition products:	In the event of fire, hydrogen chloride, carbon monoxide and carbon dioxide may be released.

11. TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS

Inhalation:	Avoid breathing vapour / spray / fumes. Inhalation of spray may produce respiratory irritation and can result in headaches, dizziness, drowsiness, and possibly nausea.
Skin contact:	Mild irritant and drying to the skin. The material should not be allowed to come into contact with the skin.
Eye contact:	Irritating. The material should not be allowed to contact the eyes.
Ingestion:	Harmful if swallowed.
Other:	None

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ANIMAL TOXICITY DATA – PRODUCT: No data available for the product.

ANIMAL TOXICITY DATA – INDIVIDUAL INGREDIENTS:

Acute:

Oral toxicity: LD₅₀ rat: 1479mg/kg (permethrin 25:75 in corn oil)

Dermal toxicity: LD₅₀ rabbit: >2000mg/kg (permethrin)

Inhalation toxicity: Not available

Skin irritation: Mild irritant – rabbit (permethrin)

Eye irritation: Mild irritant – rabbit (permethrin)

Sensitisation: Non-sensitiser

Chronic:

Permethrin is not mutagenic, teratogenic or carcinogenic. Skin sensitisation tests carried out by Bayer CropScience indicate that permethrin active ingredient was not a skin sensitiser. At high doses, the solvent caused reversible damage to the liver and kidney of male rats. These effects are not relevant to humans at occupational levels of exposure.

12. ECOLOGICAL INFORMATION

Fish toxicity: LC₅₀ (96h): 2.5 µg/L rainbow trout (permethrin)
LC₅₀ (48h): 1.8 µg/L bluegill sunfish (permethrin)

Daphnia toxicity: LC₅₀ (48h): 0.6 µg/L (permethrin)

Toxicity to algae: Data not available

Bird toxicity: LD₅₀: >3000 mg/kg chickens (permethrin)
LD₅₀: >9800 mg/kg mallard ducks (permethrin)
LD₅₀: >13500 mg/kg Japanese quail (permethrin)

Bee toxicity: LD₅₀ (24h) (oral): 0.098 µg/bee; (contact): 0.029 µg/bee

Environmental fate, persistence and degradation: Permethrin degrades rapidly in soil and water.

13. DISPOSAL CONSIDERATIONS

Triple rinse or preferably pressure rinse containers before disposal. Add rinsings to spray tank. Do not dispose of undiluted chemicals 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 500 mm 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.

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14. TRANSPORT INFORMATION

UN number:	Not applicable (road/rail)
Proper shipping name:	Not applicable (road/rail)
Class and Subsidiary Risk:	Not applicable (road/rail)
Packing Group:	Not applicable (road/rail)
EPG:	Not applicable (road/rail)
Hazchem code:	Not applicable (road/rail)
Marine pollutant:	Yes – If this product is shipped by sea it is a Class 9 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S (contains permethrin), UN 3082, Packing Group III.

15. REGULATORY INFORMATION

Registered according to the Agricultural and Veterinary Chemicals Act 1988

Australian Pesticides and Veterinary Medicines Authority Approval Number: 57184

16. OTHER INFORMATION

Trademark information:	Perigen® is a Registered Trademark of Bayer
Preparation information:	Replaces January 5 th , 2004 edition. Reason for update: Risk phrases, ADG Classification, First aid measures, Firefighting measures, Accidental release measures, Ecological information, Disposal considerations, Marine pollutant status.

Data sources: Bayer CropScience Pty Ltd product safety data and published data

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 how the product will be handled and used in the workplace including in conjunction with other products.

If clarification or further information is needed to ensure that an appropriate risk assessment can be made, the user should contact this company.

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.

END OF MSDS