SECTION 1: IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier
Trade name Crackdown® Residual Insecticide
Product code (UVP) 06068855

1.2 Relevant identified uses of the substance or mixture and uses advised against
Use Insecticide

1.3 Details of the supplier of the safety data sheet
Supplier Bayer Cropscience Pty Ltd
ABN 87 000 226 022
Level 1, 8 Redfern Road
3123 Hawthorn East
Victoria
Australia
Telephone (03) 9248 6888
Telefax (03) 9248 6800
Responsible Department 1800 804 479 Technical Information Service
Website www.environmentalscience.bayer.com.au

1.4 Emergency telephone no.
Emergency telephone no. 1800 033 111 IXOM Operations Pty Ltd

SECTION 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture
Classification in accordance with Australian GHS Regulation
Skin sensitisation: Category 1
H317 May cause an allergic skin reaction.

Acute aquatic toxicity: Category 1
H400 Very toxic to aquatic life.

Chronic aquatic toxicity: Category 1
H410 Very toxic to aquatic life with long lasting effects.

2.2 Label elements
Hazard label for supply/use required.

Hazardous components which must be listed on the label:
Deltamethrin
Tetramethrin
Piperonyl butoxide

Signal word: Warning

Hazard statements
H317 May cause an allergic skin reaction.
H400 Very toxic to aquatic life.
H410  Very toxic to aquatic life with long lasting effects.

Precautionary statements

P261  Avoid breathing mist.
P272  Contaminated work clothing should not be allowed out of the workplace.
P280  Wear protective gloves.
P302 + P352  IF ON SKIN: Wash with plenty of water/soap.
P333 + P313  If skin irritation or rash occurs: Get medical advice/attention.
P363  Wash contaminated clothing before reuse.
P501  Dispose of contents/container in accordance with local regulation.

2.3 Other hazards
No other hazards known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature
Deltamethrin 10g/l, d-Tetramethrin 20:80 10g/l, Piperonyl butoxide 80g/l
Chemical nature  Suspo-emulsion (SE)

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS-No.</th>
<th>Concentration [%]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deltamethrin</td>
<td>52918-63-5</td>
<td>0.99</td>
</tr>
<tr>
<td>Tetramethrin</td>
<td>7696-12-0</td>
<td>0.99</td>
</tr>
<tr>
<td>Piperonyl butoxide</td>
<td>51-03-6</td>
<td>7.92</td>
</tr>
<tr>
<td>1,2-Propanediol</td>
<td>57-55-6</td>
<td>5.97</td>
</tr>
<tr>
<td>Mixture of: 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-4-isothiazolin-3-one</td>
<td>55965-84-9</td>
<td>0.02</td>
</tr>
</tbody>
</table>

Other ingredients (non-hazardous) to 100%

SECTION 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 Safety Data Sheet to the doctor.

4.1 Description of first aid measures

Inhalation  Move the victim to fresh air and keep at rest.
Skin contact  Take off contaminated clothing and shoes immediately. Wash off thoroughly with plenty of soap and water, if available with polyethylene glycol 400, subsequently rinse with water. If signs of poisoning occur, call a physician immediately.
Eye contact  Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Eye treatment by an ophthalmologist.
Ingestion  Rinse mouth. Do NOT induce vomiting. Keep at rest. Obtain medical attention. Call a physician or poison control center immediately.

4.2 Most important symptoms and effects, both acute and delayed
Symptoms

Burning sensation, Airway hyperreaction, Pulmonary oedema, Tachycardia, Hypotension, Palpitation, Nausea, Vomiting, Diarrhoea, Abdominal pain, Salivation, Dizziness, Blurred vision, Headache, anorexia, Somnolence, Coma, Seizures, Convulsions, Tremors, Ataxia, Muscular fasciculation

4.3 Indication of any immediate medical attention and special treatment needed

Treatment
Treat symptomatically. Gastric lavage is not normally required. However, if a significant amount (more than a mouthful) has been ingested, administer activated charcoal and sodium sulphate. ECG - monitoring (Electrocardiogram). Contraindication: atropine.

SECTION 5. FIRE FIGHTING MEASURES

5.1 Extinguishing media
Suitable Water spray, Carbon dioxide (CO2), Foam, Dry chemical
Unsuitable High volume water jet

5.2 Special hazards arising from the substance or mixture
In the event of fire the following may be released: Carbon monoxide (CO), Carbon dioxide (CO2), Nitrogen oxides (NOx), Hydrogen chloride (HCl), Hydrogen cyanide (hydrocyanic acid)

5.3 Advice for firefighters
Special protective equipment for firefighters Wear self-contained breathing apparatus and protective suit.
Further information Cool closed containers exposed to fire with water spray. Whenever possible, contain fire-fighting water by diking area with sand or earth. Do not allow run-off from fire fighting to enter drains or water courses.

Hazchem Code •3Z

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Precautions An emergency shower must be readily accessible to the work area. Use personal protective equipment. Avoid contact with spilled product or contaminated surfaces. Keep unauthorized people away.

6.2 Environmental precautions
Do not allow to get into surface water, drains and ground water. Contain contaminated water and fire fighting water. If the product contaminates rivers and lakes or drains inform respective authorities.

6.3 Methods and materials for containment and cleaning up
Methods for cleaning up Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Collect and transfer the product into a properly labelled and tightly closed container. Clean contaminated floors and objects thoroughly, observing environmental regulations.
6.4 Reference to other sections
Information regarding safe handling, see section 7.
Information regarding personal protective equipment, see section 8.
Information regarding waste disposal, see section 13.

SECTION 7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Advice on safe handling
Avoid contact with skin, eyes and clothing. Use only in area provided with appropriate exhaust ventilation.

Hygiene measures
Avoid contact with skin, eyes and clothing.

7.2 Conditions for safe storage, including any incompatibilities
Requirements for storage areas and containers
Keep out of the reach of children. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from direct sunlight. Protect from frost.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Control parameters</th>
<th>Update</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deltamethrin</td>
<td>52918-63-5</td>
<td>0.02 mg/m3 (TWA)</td>
<td>OES BCS*</td>
<td></td>
</tr>
<tr>
<td>Piperonyl butoxide</td>
<td>51-03-6</td>
<td>500 ppm (TWA)</td>
<td>OES BCS*</td>
<td></td>
</tr>
<tr>
<td>1,2-Propanediol (Total vapour and particulates.)</td>
<td>57-55-6</td>
<td>474 mg/m3/150 ppm (TWA)</td>
<td>12 2011</td>
<td>AU NOEL</td>
</tr>
<tr>
<td>1,2-Propanediol (Particulate.)</td>
<td>57-55-6</td>
<td>10 mg/m3 (TWA)</td>
<td>12 2011</td>
<td>AU NOEL</td>
</tr>
</tbody>
</table>

*OES BCS: Internal Bayer CropScience "Occupational Exposure Standard"

8.2 Exposure controls

Respiratory protection
Respiratory protection should only be used to control residual risk of short duration activities, when all reasonably practicable steps have been taken to reduce exposure at source e.g. containment and/or local extract ventilation. Always follow respirator manufacturer’s instructions regarding wearing and maintenance.

Hand protection
Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time.
Wear CE Marked (or equivalent) nitrile rubber gloves (minimum thickness of 0.4 mm). Wash when contaminated and dispose of when contaminated inside, when perforated or when contamination on the outside cannot be removed. Wash hands frequently and always before eating, drinking, smoking or using the toilet.
Eye protection
Wear goggles (conforming to EN166, Field of Use = 5 or equivalent).

Skin and body protection
Wear standard coveralls and Category 3 Type 5 suit. Wear two layers of clothing wherever possible. Polyester/cotton or cotton overalls should be worn under chemical protection suit and should be professionally laundered frequently. If there is a risk of significant exposure, consider a higher protective type suit.

General protective measures
In normal use and handling conditions please refer to the label and/or leaflet. In all other cases the following recommendations would apply.

Engineering Controls
Advice on safe handling
Avoid contact with skin, eyes and clothing. Use only in area provided with appropriate exhaust ventilation.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Form: suspension
Colour: white
pH: 3.0 - 7.0 at 100 % (23 °C)
Density: ca. 1.01 g/cm³ at 20 °C
Partition coefficient: n-octanol/water
Deltamethrin: log Pow: 6.4 at 25 °C
Tetramethrin: log Pow: 4.35
Piperonyl butoxide: log Pow: 4.75
Viscosity, dynamic: 470 - 770 mPa×s at 20 °C Velcity gradient 12.7 /s

SECTION 10. STABILITY AND REACTIVITY

10.1 Reactivity
Not applicable

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No hazardous reactions when stored and handled according to prescribed instructions.
10.4 Conditions to avoid
No data available

10.5 Incompatible materials
Oxidizing agents, Strong acids, Bases, Iron

10.6 Hazardous decomposition products
Thermal decomposition can lead to release of:
- Oxides of carbon
- Nitrogen oxides (NOx)
- Hydrogen chloride (HCl)
- Hydrogen cyanide (hydrocyanic acid)

### SECTION 11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

**Acute oral toxicity**
- LD50 (Rat) > 10,000 mg/kg
  Test conducted with a similar formulation.
- LD50 (Rat) 4,570 mg/kg
  The value mentioned relates to the active ingredient piperonyl butoxide.
- LD50 (Rat) > 5,000 mg/kg
  The value mentioned relates to the active ingredient D-tetramethrin.
- LD50 (Rat) 87 mg/kg
  The value mentioned relates to the active ingredient deltamethrin.

**Acute inhalation toxicity**
- LC50 (Rat) 0.6 mg/l
  Exposure time: 6 h
  The value mentioned relates to the active ingredient deltamethrin.
- LC50 (Rat) 5.9 mg/l
  Exposure time: 4 h
  The value mentioned relates to the active ingredient piperonyl butoxide.
- LC50 (Rat) > 1.18 mg/l
  Exposure time: 4 h
  The value mentioned relates to the active ingredient D-tetramethrin.

**Acute dermal toxicity**
- LD50 (Rat) > 10,000 mg/kg
  Test conducted with a similar formulation.
- LD50 (Rat) > 2,000 mg/kg
  The value mentioned relates to the active ingredient deltamethrin.
- LD50 (Rat) > 5,000 mg/kg
  The value mentioned relates to the active ingredient D-tetramethrin.
- LD50 (Rabbit) > 2,000 mg/kg
  The value mentioned relates to the active ingredient piperonyl butoxide.

**Skin irritation**
- No skin irritation (Rabbit)
  The value mentioned relates to the active ingredient deltamethrin.
- No skin irritation (Rabbit)
  The value mentioned relates to the active ingredient D-tetramethrin.

**Eye irritation**
- No eye irritation (Rabbit)
  The value mentioned relates to the active ingredient deltamethrin.

**Sensitisation**
- Non-sensitizing, (Guinea pig)
  The value mentioned relates to the active ingredient deltamethrin.

**Assessment mutagenicity**
Deltamethrin was not mutagenic or genotoxic in a battery of in vitro and in vivo tests. Tetramethrin was not mutagenic or genotoxic in a battery of in vitro and in vivo tests. Piperonyl butoxide was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.

**Assessment carcinogenicity**

Deltamethrin was not carcinogenic in lifetime feeding studies in rats and mice. Tetramethrin caused at high dose levels an increased incidence of tumours in mice in the following organ(s): Testes. The mechanism that triggers tumours in rodents and the type of tumours observed are not relevant to humans. Piperonyl butoxide was not carcinogenic in lifetime feeding studies in rats and mice.

**Assessment toxicity to reproduction**

Deltamethrin did not cause reproductive toxicity in a two-generation study in rats. Tetramethrin did not cause reproductive toxicity in a two-generation study in rats. Piperonyl butoxide did not cause reproductive toxicity in a two-generation study in rats.

**Assessment developmental toxicity**

Deltamethrin caused developmental toxicity only at dose levels toxic to the dams. The developmental effects seen with Deltamethrin are related to maternal toxicity. Tetramethrin did not cause developmental toxicity in rats and rabbits. Piperonyl butoxide did not cause developmental toxicity in rats and rabbits.

**Assessment STOT Specific target organ toxicity – repeated exposure**

Deltamethrin caused neurobehavioral effects and/or neuropathological changes in animal studies. The toxic effects of Deltamethrin are related to transient hyperactivity typical for pyrethroid neurotoxicity. Tetramethrin did not cause specific target organ toxicity in experimental animal studies. Piperonyl butoxide did not cause specific target organ toxicity in experimental animal studies.

**Aspiration hazard**

Based on available data, the classification criteria are not met.

**Information on likely routes of exposure**

Avoid breathing spray mist., May cause irritation of the mucous membranes. Irritant, Can cause irritation to the skin resulting in effects such as burning and/or tingling sensation. May cause eye irritation. May be harmful if swallowed., May cause nausea, vomiting, abdominal pain.

**Early onset symptoms related to exposure**

Refer to Section 4

**Delayed health effects from exposure**

Refer to Section 11

**Exposure levels and health effects**

Refer to Section 4

**Interactive effects**

Not known

**When specific chemical data is not available**

Not applicable

**Mixture of chemicals**

Refer to Section 2.1
Further information
No further toxicological information is available.

SECTION 12. ECOLOGICAL INFORMATION

12.1 Toxicity
Toxicity to fish
- LC50 (Oncorhynchus mykiss (rainbow trout)) 0.00091 mg/l
  Exposure time: 96 h
  The value mentioned relates to the active ingredient deltamethrin.
- LC50 (Oncorhynchus mykiss (rainbow trout)) 0.01 mg/l
  The value mentioned relates to the active ingredient D-tetramethrin.
- LC50 (Cyprinodon variegatus (sheepshead minnow)) 3.94 mg/l
  Exposure time: 96 h
  The value mentioned relates to the active ingredient piperonyl butoxide.

Toxicity to aquatic invertebrates
- EC50 (Daphnia magna (Water flea)) 0.00056 mg/l
  Exposure time: 48 h
  The value mentioned relates to the active ingredient deltamethrin.
- EC50 (Daphnia magna (Water flea)) 0.51 mg/l
  Exposure time: 48 h
  The value mentioned relates to the active ingredient piperonyl butoxide.

Toxicity to aquatic plants
- EC50 (Algae) > 9.1 mg/l
  Exposure time: 96 h
  The value mentioned relates to the active ingredient deltamethrin.
- IC50 (Raphidocelis subcapitata (freshwater green alga)) 2.09 mg/l
  Exposure time: 72 h
  The value mentioned relates to the active ingredient piperonyl butoxide.

12.2 Persistence and degradability
Biodegradability
- Deltamethrin: Not rapidly biodegradable
- Tetramethrin: Not rapidly biodegradable
- Piperonyl butoxide: Not rapidly biodegradable

Koc
- Deltamethrin: Koc: 10240000
- Tetramethrin: Koc: 8900
- Piperonyl butoxide: Koc: 399 - 830

12.3 Bioaccumulative potential
Bioaccumulation
- Deltamethrin: Bioconcentration factor (BCF) 1,400
- Tetramethrin: Does not bioaccumulate.
- Piperonyl butoxide: Potential bioaccumulation

12.4 Mobility in soil
Mobility in soil

- Deltamethrin: Immobile in soil
- Tetramethrin: Immobile in soil
- Piperonyl butoxide: Moderately mobile in soils

12.5 Other adverse effects

SECTION 13. DISPOSAL CONSIDERATIONS

Metal drums and plastic containers:
Triple 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.

SECTION 14. TRANSPORT INFORMATION

ADG

- UN number: 3082
- Transport hazard class(es): 9
- Subsidiary Risk: None
- Packaging group: III
- Description of the goods: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (DELTAMETHRIN SOLUTION)
- Hazchem Code: •3Z

IMDG

- UN number: 3082
- Transport hazard class(es): 9
- Subsidiary Risk: None
- Packaging group: III
- Marine pollutant: YES
- Description of the goods: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (DELTAMETHRIN SOLUTION)

IATA

- UN number: 3082
- Transport hazard class(es): 9
- Subsidiary Risk: None
- Packaging group: III
- Environm. Hazardous Mark: YES
- Description of the goods: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (DELTAMETHRIN SOLUTION)
SECTION 15. REGULATORY INFORMATION

Registered according to the Agricultural and Veterinary Chemicals Code Act 1994

Australian Pesticides and Veterinary Medicines Authority approval number: 45907

SUSMP classification (Poison Schedule)

Schedule 5 (Standard for the Uniform Scheduling of Medicines and Poisons)

SECTION 16. OTHER INFORMATION

Trademark information

Crackdown® is a registered trademark of the Bayer Group.

This SDS 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 SDS 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.

Abbreviations and acronyms

ADN European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE Acute toxicity estimate
AU OEL Australia. OELs. (Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment)
CAS-Nr. Chemical Abstracts Service number
CEILING Ceiling Limit Value
Conc. Concentration
EC-No. European community number
ECx Effective concentration to x %
EINECS European inventory of existing commercial substances
ELINCS European list of notified chemical substances
EN European Standard
EU European Union
IATA International Air Transport Association
IBC International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code)
ICx Inhibition concentration to x %
IMDG International Maritime Dangerous Goods
LCx Lethal concentration to x %
LDx Lethal dose to x %
LOEC/LOEL Lowest observed effect concentration/level
MARPOL MARPOL: International Convention for the prevention of marine pollution from ships
## Crackdown® Residual Insecticide

### Safety Data Sheet

**Version 1 / AUS**

**Revision Date:** 26.10.2016

**Print Date:** 26.10.2016

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>N.O.S.</td>
<td>Not otherwise specified</td>
</tr>
<tr>
<td>NOEC/NOEL</td>
<td>No observed effect concentration/level</td>
</tr>
<tr>
<td>OECD</td>
<td>Organization for Economic Co-operation and Development</td>
</tr>
<tr>
<td>OES BCS</td>
<td>OES BCS: Internal Bayer CropScience “Occupational Exposure Standard”</td>
</tr>
<tr>
<td>PEAK</td>
<td>PEAK: Exposure Standard - Peak means a maximum or peak airborne concentration of a particular substance determined over the shortest analytically practicable period of time which does not exceed 15 minutes.</td>
</tr>
<tr>
<td>RID</td>
<td>Regulations concerning the International Carriage of Dangerous Goods by Rail</td>
</tr>
<tr>
<td>SK-SEN</td>
<td>Skin sensitiser</td>
</tr>
<tr>
<td>SKIN_DES</td>
<td>SKIN_DES: Skin notation: Absorption through the skin may be a significant source of exposure.</td>
</tr>
<tr>
<td>STEL</td>
<td>STEL: Exposure standard - short term exposure limit (STEL): A 15 minute TWA exposure which should not be exceeded at any time during a working day even if the eight-hour TWA average is within the TWA exposure standard. Exposures at the STEL should not be longer than 15 minutes and should not be repeated more than four times per day. There should be at least 60 minutes between successive exposures at the STEL.</td>
</tr>
<tr>
<td>TWA</td>
<td>TWA: Exposure standard - time-weighted average (TWA): The average airborne concentration of a particular substance when calculated over a normal eight-hour working day, for a five-day working week.</td>
</tr>
<tr>
<td>UN</td>
<td>United Nations</td>
</tr>
<tr>
<td>WHO</td>
<td>World health organisation</td>
</tr>
</tbody>
</table>

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Changes since the last version are highlighted in the margin. This version replaces all previous versions.

END OF SDS