



SECTION 1: IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product name	Bulldock® 25 EC Insecticide
Other names	none
Product code (UVP)	04175182
Chemical Group	pyrethroid
Recommended use	Insecticide
Chemical Formulation	Emulsifiable concentrate (EC)
Company	Bayer CropScience Pty Ltd –ABN 87 000 226 022 391-393 Tooronga Road, East Hawthorn Victoria 3123, Australia
Telephone	(03) 9248 6888
Technical Information Service	1800 804 479
Facsimile	(03) 9248 6800
Website	www.bayercropscience.com.au
Emergency telephone no.	1800 033 111 Orica SH&E Shared Services

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

HAZARDOUS SUBSTANCE

DANGEROUS GOODS

Hazardous classification	Hazardous (National Occupational Health and Safety Commission - NOHSC)
R-phrase(s)	R20/22 - Harmful by inhalation and if swallowed. R38 - Irritating to skin. R41 - Risk of serious damage to eyes.
S-phrase(s)	See sections 4, 5, 6, 7, 8, 10, 12, 13.
ADG Classification	"Dangerous goods" for transport by road or rail according to the Australian Code for the Transport of Dangerous Goods by Road and Rail. - See Section 14.
SUSMP classification (Poison Schedule)	Schedule 6 (Standard for the Uniform Scheduling of Medicines and Poisons)

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature
 Beta-cyfluthrin 25g/l

Chemical Name	CAS-No.	Concentration [%]
Cyfluthrin	68359-37-5	2.80
Xylene	1330-20-7	87.07
Dodecyl benzene sulphonate, calcium salt	26264-06-2	5.17
Butan-1-ol	71-36-3	< 1.00
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.

Inhalation

Move to fresh air. Keep patient warm and at rest. Oxygen or artificial respiration if needed. Call a physician or poison control center immediately.

Skin contact

Take off contaminated clothing and shoes immediately. Immediately wash with plenty of soap and water for at least 15 minutes. Warm water may increase the subjective severity of the irritation/paresthesia. This is not a sign of systemic poisoning. In case of skin irritation, application of oils or lotions containing vitamin E may be considered. If symptoms persist, call a physician. Clean contaminated clothing and shoes before re-use or discard if they cannot be thoroughly cleaned.

Eye contact

Remove contact lens and rinse eyes immediately with plenty of water, also under the eyelids, for at least 15 minutes. Apply soothing eye drops, if needed anaesthetic eye drops. Get medical attention if irritation develops and persists.

Ingestion

Rinse mouth. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Keep patient warm and at rest. Call a physician or poison control center immediately.

Notes to physician

Symptoms

Local:, Skin and eye paraesthesia which may be severe, Usually transient with resolution within 24 hours, Skin, eye and mucous membrane irritation, Cough, Systemic:, Headache, Nausea, Discomfort in the chest, Pulmonary oedema, Bronchial hypersecretion, Tachycardia, Low blood pressure, Palpitation, Abdominal pain, Diarrhoea, Dizziness, Blurred vision, Apathy, Anorexia, Somnolence, Coma, Spasm, Convulsions, Tremors, Ataxia, Muscular fasciculation, Aspiration may cause pulmonary oedema and pneumonitis.

Risks

Pyrethroid poisoning should not be confused with carbamate or organophosphate poisoning.

Treatment

Treat symptomatically.
Activated charcoal and cathartics like sorbitol or magnesium sulphate should be given.
Monitor: respiratory and cardiac functions.
In case of aspiration intubation and bronchial lavage should be considered.
In case of convulsions, a benzodiazepine (e.g. diazepam) should be given according to standard regimens.
Contraindication: derivatives of adrenaline.

SECTION 5. FIRE FIGHTING MEASURES

Suitable extinguishing media

Foam
Dry chemical
Carbon dioxide (CO₂)
Sand
Water spray



Hazards from combustion products

In the event of fire the following may be released:

Hydrogen chloride (HCl)
Hydrogen cyanide (hydrocyanic acid)
Hydrogen fluoride
Carbon monoxide (CO)
Nitrogen oxides (NOx)

Precautions for fire-fighting

Wear self-contained breathing apparatus and protective suit.
Evacuate personnel to safe areas.
Remove product from areas of fire, or otherwise cool containers with water in order to avoid pressure being built up due to heat.
After fire is extinguished, do not turn on any ignition source until the area is determined to be free from explosion or fire hazard.
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 •3Y

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Avoid contact with spilled product or contaminated surfaces.
When dealing with a spillage do not eat, drink or smoke.
Remove all sources of ignition.
Use personal protective equipment.
Keep unauthorized people away.

Environmental precautions

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

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.

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

Handling

Hygiene measures

Avoid contact with skin, eyes and clothing.
Wash hands before breaks and immediately after handling the product.
Before removing gloves clean them with soap and water.
Remove soiled clothing immediately and clean thoroughly before using again.
After each day's use, wash gloves, face shield or goggles and contaminated clothing.
Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics.

Advice on protection against fire and explosion

Keep away from heat and sources of ignition.



Vapours are heavier than air and may spread along floors.

Storage

Requirements for storage areas and containers

Keep out of the reach of children.

Store in original container.

Keep containers tightly closed in a dry, cool and well-ventilated place.

Keep away from direct sunlight.

Advice on common storage

Keep away from food, drink and animal feedingstuffs.

Flammability

3 Flammable Liquids

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Control parameters	Update	Basis
Xylene	1330-20-7	100 ppm (TWA)		OES BCS
Xylene	1330-20-7	655 mg/m ³ / 150 ppm (STEL)	08 2005	AU OEL
Xylene	1330-20-7	350 mg/m ³ / 80 ppm (TWA)	08 2005	AU OEL
Butan-1-ol	71-36-3	20 ppm (TWA)		OES BCS
Butan-1-ol	71-36-3	152 mg/m ³ / 50 ppm (PEAK)	08 2005	AU OEL

Butan-1-ol 71-36-3 Skin designation: Can be absorbed through the skin.

For further details on the Occupational Exposure Standards, see Section 16.

Biological limit values

none

Personal protective equipment - End user

Respiratory protection

AS/NZS 1715/1716 approved respirator
 Use respiratory protection for organic vapours.

Hand protection

Elbow-length PVC or nitrile gloves

Eye protection

Face-shield or goggles

Skin and body protection

Cotton overall buttoned to the neck and wrist
 Washable hat

Engineering Controls

Advice on safe handling

Avoid contact with skin, eyes and clothing.

Use only in area provided with appropriate exhaust ventilation.

Provide for appropriate exhaust ventilation and dust collection at machinery.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES



Appearance

Form liquid, clear
Colour yellow
Odour aromatic

Safety data

pH 5.5 - 6.5 at 1 % (23 °C)

Flash point > 28 °C

Ignition temperature 500 °C
The data refer to the solvent.

Upper explosion limit 6.6 %(V)
The value mentioned relates to the solvent xylene.

Lower explosion limit 1.1 %(V)
The value mentioned relates to the solvent xylene.

Vapour pressure no data available

Relative vapour density no data available

Density ca. 0.89 g/cm³ at 20 °C

Water solubility emulsifiable

Partition coefficient: n-octanol/water no data available

SECTION 10. STABILITY AND REACTIVITY

Chemical Stability	Stable under normal conditions.
Conditions to avoid	Heat, flames and sparks.
Materials to avoid	Strong oxidizing agents Strong acids Strong bases
Hazardous Decomposition Products	Thermal decomposition can lead to release of: Hydrogen chloride (HCl) Hydrogen cyanide (hydrocyanic acid) Hydrogen fluoride Carbon monoxide Nitrogen oxides (NOx)
Hazardous reactions	No hazardous reactions known.

SECTION 11. TOXICOLOGICAL INFORMATION

Potential Health Effects



Inhalation	Harmful if inhaled. Inhalation of high vapour concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting. Inhalation of high vapour concentrations can cause CNS-depression and narcosis.
Skin	Irritating to skin. Prolonged skin contact may cause skin irritation and/or dermatitis. Skin contact especially to the face may result in a tingling sensation and reddening of the skin. May cause a transient, localized paresthesia, characterized by tingling, burning or numbness sensation in some individuals.
Eye	May cause severe eye irritation.
Ingestion	Harmful if swallowed. May lead to rapid onset of nausea, vomiting, diarrhea, abdominal pain, involuntary shaking, excess salivation, pinpoint pupils, blurred vision, profuse sweating, temporary paralysis, respiratory depression, and convulsions. Aspiration of the swallowed or vomited product can cause severe pulmonary complications.
Acute oral toxicity	LD50 (rat) 630 - 757 mg/kg
Acute inhalation toxicity	LC50 (rat) 3.23 mg/l Exposure time: 4 h Determined in the form of a respirable aerosol.
Acute dermal toxicity	LD50 (rat) > 5,000 mg/kg
Skin irritation	Severe skin irritation. (rabbit)
Eye irritation	Severe eye irritation. (rabbit)
Sensitisation	Non-sensitizing. (guinea pig) The value mentioned relates to the active ingredient beta-cyfluthrin.
Chronic toxicity	The toxic effects of Cyfluthrin are related to transient hyperactivity typical for pyrethroid neurotoxicity. Xylene did not cause specific target organ toxicity in experimental animal studies.

Assessment Mutagenicity

Cyfluthrin was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.
Xylene was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.

Assessment Carcinogenicity

Cyfluthrin was not carcinogenic in lifetime feeding studies in rats and mice.
Xylene was not carcinogenic in lifetime feeding studies in rats and mice.

Assessment toxicity to reproduction

Cyfluthrin caused reproduction toxicity in a two-generation study in rats only at dose levels also toxic to the parent animals. The reproduction toxicity seen with Cyfluthrin is related to parental toxicity.
Xylene did not cause reproductive toxicity in a two-generation study in rats.



Assessment developmental toxicity

Cyfluthrin caused developmental toxicity only at dose levels toxic to the dams. The developmental effects seen with Cyfluthrin are related to maternal toxicity.

Xylene caused developmental toxicity only at dose levels toxic to the dams. The developmental effects seen with Xylene are related to maternal toxicity.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity effects

Toxicity to fish	LC50 (Lepomis macrochirus (Bluegill sunfish)) 0.00028 mg/l Exposure time: 96 h The value mentioned relates to the active ingredient beta-cyfluthrin.
Toxicity to fish	LC50 (Rainbow trout (Oncorhynchus mykiss)) 0.000089 mg/l Exposure time: 96 h The value mentioned relates to the active ingredient beta-cyfluthrin.
Toxicity to fish	LC50 (Rainbow trout (Oncorhynchus mykiss)) 13.5 mg/l Exposure time: 96 h The value mentioned relates to the solvent xylene.
Toxicity to aquatic invertebrates	EC50 (Water flea (Daphnia magna)) 0.0003 mg/l Exposure time: 48 h The value mentioned relates to the active ingredient beta-cyfluthrin.
Toxicity to aquatic invertebrates	EC50 (Water flea (Daphnia magna)) 3.82 mg/l Exposure time: 48 h The value mentioned relates to the solvent xylene.
Toxicity to aquatic plants	EC50 (Scenedesmus subspicatus) > 0.01 mg/l The value mentioned relates to the active ingredient beta-cyfluthrin.
Toxicity to aquatic plants	EC50 < 10 mg/l The value mentioned relates to the solvent xylene.
Toxicity to other organisms	LC50 (Coturnix japonica (Japanese quail)) > 2,000 mg/kg The value mentioned relates to the active ingredient beta-cyfluthrin.
Toxicity to other organisms	LD50 (Apis mellifera (bees)) <0.1 µg/bee The value mentioned relates to the active ingredient beta-cyfluthrin.
Toxicity to other organisms	LD50 (Eisenia fetida (earthworms)) > 1,000 mg/kg The value mentioned relates to the active ingredient beta-cyfluthrin.
Biodegradability	Readily biodegradable. The value mentioned relates to the active ingredient beta-cyfluthrin.
Biodegradability	Readily biodegradable. The value mentioned relates to the solvent xylene.
Stability in soil	no data available



Bioaccumulation	Bioconcentration factor (BCF): 506 The value mentioned relates to the active ingredient beta-cyfluthrin.
Bioaccumulation	Bioconcentration factor (BCF): 30 The value mentioned relates to the solvent xylene.
Additional Environmental Information	no data available

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	1993
Class	3
Subsidiary Risk	None
Packaging group	III
Description of the goods	FLAMMABLE LIQUID, N.O.S. (BETA-CYFLUTHRIN, XYLENE SOLUTION)
Hazchem Code	•3Y

IMDG

UN number	1993
Class	3
Subsidiary Risk	None
Packaging group	III
EmS	F-E , S-E
Marine pollutant	YES
Description of the goods	FLAMMABLE LIQUID, N.O.S. (BETA-CYFLUTHRIN, XYLENE SOLUTION)

IATA

UN number	1993
Class	3
Subsidiary Risk	None
Packaging group	III
Environm. Hazardous Mark	NO
Description of the goods	FLAMMABLE LIQUID, N.O.S. (BETA-CYFLUTHRIN, XYLENE SOLUTION)

SECTION 15. REGULATORY INFORMATION

Registered according to the Agricultural and Veterinary Chemicals Code Act 1994
Australian Pesticides and Veterinary Medicines Authority approval number: 40422
See also Section 2.



SECTION 16. OTHER INFORMATION

Trademark information Bulldock® 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.

Further details on the Occupational Exposure Standards mentioned in Section 8:

CEILING: Ceiling Limit Value

OES BCS: Internal Bayer CropScience "Occupational Exposure Standard"

Australia. OELs. (Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment)

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.

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.

SKIN_DES: Skin notation: Absorption through the skin may be a significant source of exposure.

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.

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

END OF SDS