SECTION 1: IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Trade name	Dropp® UltraMax™ Cotton Defoliant
Product code (UVP)	05748185

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

Use	Growth regulator, Herbicide

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.crop.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

Carcinogenicity: Category 2
H351 Suspected of causing cancer.

Specific target organ toxicity - repeated exposure: Category 2
H373 May cause damage to organs through prolonged or repeated exposure.

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:

Thidiazuron
Diuron

Signal word: Warning

Hazard statements

H351	Suspected of causing cancer.
H373	May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe mist.
P281	Use personal protective equipment as required.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P405	Store locked up.
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

Thidiazuron:Diuron 240:120g/l
Chemical nature Suspension concentrate (=flowable concentrate)(SC)

Chemical Name	CAS-No.	Concentration [%]
Thidiazuron	51707-55-2	21.43
Diuron	330-54-1	10.71
1,2-Propanediol	57-55-6	< 10.00
Fatty alcohol ethoxylate	68131-39-5	<= 1.00
1,2-Benzisothiazol-3(2H)-one	2634-33-5	>= 0.005 - <= 0.05
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. When inhaled remove to fresh air and seek medical aid.
Skin contact	Take off contaminated clothing and shoes immediately. Wash off thoroughly with plenty of soap and water, if available with polyethyleneglycol 400, subsequently rinse with water. If symptoms persist, call a physician.
Eye contact	In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Ingestion	Rinse mouth. Do NOT induce vomiting. Keep patient warm and at rest. Obtain medical attention.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms The following symptoms may occur: Apathy, Cyanosis

4.3 Indication of any immediate medical attention and special treatment needed

Treatment Local treatment: Treat symptomatically. Systemic treatment: In case of ingestion gastric lavage should be considered in cases of significant ingestions only within the first 2 hours. However, the application of activated charcoal and sodium sulphate is always advisable. Monitor: methaemoglobinaemia and serum potassium. In case of methaemoglobinemia, oxygen and specific antidotes (methylene blue/ toluidine blue) should be given. 300 mg Toluidine blue intravenous or 1-2 mg/kg Methylene blue intravenous. Contraindications: alcohol.

SECTION 5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Suitable Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

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

5.3 Advice for firefighters

Special protective equipment for firefighters Wear self-contained breathing apparatus and protective suit.

Further information Remove product from areas of fire, or otherwise cool containers with water in order to avoid pressure being built up due to heat. Evacuate personnel to safe areas. Whenever possible, contain fire-fighting water by diking area with sand or earth. Contain the spread of the fire-fighting media.

Hazchem Code •3Z

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Precautions Avoid contact with spilled product or contaminated surfaces. When dealing with a spillage do not eat, drink or smoke. Use personal protective equipment. Keep people away from and upwind of spill/leak.

6.2 Environmental precautions Retain and dispose of contaminated wash 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.

6.3 Methods and materials for containment and cleaning up

Methods for cleaning up Collect and transfer the product into a properly labelled and tightly closed container. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). 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. Ensure adequate ventilation.

Hygiene measures Contact with eyes and skin must be avoided. Wash thoroughly with soap and water after handling. Remove and wash contaminated gloves, including the inside, before re-use. Remove soiled clothing immediately and clean thoroughly before using again. Contaminated work clothing should not be allowed out of the workplace.

7.2 Conditions for safe storage, including any incompatibilities

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. Protect from freezing.

Advice on common storage Keep away from food, drink and animal feedingstuffs.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Components	CAS-No.	Control parameters	Update	Basis
Thidiazuron	51707-55-2	1.1 mg/m3 (TWA)		OES BCS*
Diuron	330-54-1	10 mg/m3 (TWA)	12 2011	AU NOEL
Diuron	330-54-1	0.6 mg/m3 (TWA)		OES BCS*
1,2-Propanediol (Total vapour and particulates.)	57-55-6	474 mg/m3/150 ppm (TWA)	12 2011	AU NOEL
1,2-Propanediol (Particulate.)	57-55-6	10 mg/m3 (TWA)	12 2011	AU NOEL

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

8.2 Exposure controls

Respiratory protection Wear respirator with a particle filter mask (protection factor 4) conforming to European norm EN149FFP1 or equivalent.

	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	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. If there is a risk of significant exposure, consider a higher protective type 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.
General protective measures	In normal use and handling conditions please refer to the label and/or leaflet. In all other cases the above mentioned recommendations would apply.

Engineering Controls

Advice on safe handling Avoid contact with skin, eyes and clothing. Ensure adequate ventilation.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Form	suspension
Colour	beige
Odour	aromatic
pH	6.0 - 8.0 at 100 % (23 °C)
Density	ca. 1.12 g/cm³ at 20 °C
Partition coefficient: n-octanol/water	Thidiazuron: log Pow: 1.5
	Diuron: log Pow: 2.84
Viscosity, dynamic	80 - 200 mPa×s at 20 °C Velocity gradient 20 /s
	30 - 80 mPa×s at 20 °C Velocity gradient 100 /s
	80 - 250 mPa×s at 20 °C Velocity gradient 68.4 /s
9.2 Other information	Further safety related physical-chemical data are not known.

SECTION 10. STABILITY AND REACTIVITY

10.1 Reactivity

Thermal decomposition	Stable under normal conditions.
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	Extremes of temperature and direct sunlight.
10.5 Incompatible materials	Oxidizing agents, Acids, Bases
10.6 Hazardous decomposition products	Thermal decomposition can lead to release of: Carbon monoxide Hydrogen chloride (HCl) Sulphur oxides Nitrogen oxides (NOx)

SECTION 11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute oral toxicity	LD50 (Rat) > 4,000 mg/kg The value mentioned relates to the active ingredient thidiazuron. LD50 (Rat) > 2,000 mg/kg The value mentioned relates to the active ingredient diuron.
Acute inhalation toxicity	LC50 (Rat) > 2.3 mg/l Exposure time: 4 h Highest attainable concentration. The value mentioned relates to the active ingredient thidiazuron. LC50 (Rat) > 7 mg/l Exposure time: 4 h Highest attainable concentration. The value mentioned relates to the active ingredient diuron.
Acute dermal toxicity	LD50 (Rat) > 1,000 mg/kg The value mentioned relates to the active ingredient thidiazuron. LD50 (Rat) > 2,000 mg/kg The value mentioned relates to the active ingredient diuron.
Skin irritation	No skin irritation (Rabbit) The value mentioned relates to the active ingredient thidiazuron. No skin irritation (Rabbit) The value mentioned relates to the active ingredient diuron.
Eye irritation	Slight irritation (Rabbit) The value mentioned relates to the active ingredient thidiazuron. No eye irritation (Rabbit) The value mentioned relates to the active ingredient diuron.
Sensitisation	Non-sensitizing (Guinea pig)

The value mentioned relates to the active ingredient thidiazuron.
Non-sensitizing (Guinea pig)
The value mentioned relates to the active ingredient diuron.

Assessment mutagenicity

Thidiazuron was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.
Diuron was not mutagenic or genotoxic based on the overall weight of evidence in a battery of in vitro and in vivo tests.

Assessment carcinogenicity

Thidiazuron was not carcinogenic in lifetime feeding studies in rats and mice.
Diuron caused at high dose levels an increased incidence of tumours in the following organ(s): urinary bladder, mammary gland. The mechanism that triggers tumours in rodents is not relevant for the low exposures encountered under normal use conditions.

Assessment toxicity to reproduction

Thidiazuron did not cause reproductive toxicity in a two-generation study in rats.
Diuron did not cause reproductive toxicity in a two-generation study in rats.

Assessment developmental toxicity

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

Assessment STOT Specific target organ toxicity – repeated exposure

Thidiazuron did not cause specific target organ toxicity in experimental animal studies.
Diuron caused haemolytic anaemia in animal studies.

Aspiration hazard

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

Information on likely routes of exposure

May be harmful if inhaled. May cause irritation of the mucous membranes.
May cause skin irritation.
Causes eye irritation.
Harmful if swallowed.

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)) > 19 mg/l Exposure time: 96 h The value mentioned relates to the active ingredient thidiazuron. LC50 (Lepomis macrochirus (Bluegill sunfish)) 32 mg/l Exposure time: 96 h The value mentioned relates to the active ingredient thidiazuron. LC50 (Oncorhynchus mykiss (rainbow trout)) 14.7 mg/l Exposure time: 96 h The value mentioned relates to the active ingredient diuron.
Toxicity to aquatic invertebrates	LC50 (Daphnia (water flea)) > 10 mg/l Exposure time: 48 h The value mentioned relates to the active ingredient thidiazuron. EC50 (Daphnia magna (Water flea)) 1.4 mg/l Exposure time: 48 h The value mentioned relates to the active ingredient diuron.
Toxicity to aquatic plants	EC50 (Raphidocelis subcapitata (freshwater green alga)) 0.022 mg/l Exposure time: 120 h The value mentioned relates to the active ingredient diuron.
Toxicity to other organisms	LD50 (Coturnix japonica (Japanese quail)) > 3,160 mg/kg The value mentioned relates to the active ingredient thidiazuron. LC50 (Colinus virginianus (Bobwhite quail)) 1,730 mg/kg Exposure time: 8 d The value mentioned relates to the active ingredient diuron.

12.2 Persistence and degradability

Biodegradability	Thidiazuron: Not rapidly biodegradable Diuron: Not rapidly biodegradable
Koc	Thidiazuron: Koc: 769 Diuron: Koc: 468 - 1666

12.3 Bioaccumulative potential

Bioaccumulation	Thidiazuron: Does not bioaccumulate. Diuron: Bioconcentration factor (BCF) 15 - 340 Does not bioaccumulate.

12.4 Mobility in soil

Mobility in soil	Thidiazuron: Slightly mobile in soils

Diuron: Slightly mobile in soils

12.5 Other adverse effects

Additional ecological information No other effects to be mentioned.

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.
Do not reuse container for any other purpose.

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. (DIURON SOLUTION)
Hazchem Code	•3Z

According to AU01, Environmentally Hazardous Substances in packagings, IBC or any other receptacle not exceeding 500 kg or 500 L are not subject to the ADG Code.

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. (DIURON 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. (DIURON SOLUTION)

SECTION 15. REGULATORY INFORMATION

Registered according to the Agricultural and Veterinary Chemicals Code Act 1994

Australian Pesticides and Veterinary Medicines Authority approval number: 59777

SUSMP classification (Poison Schedule)

Exempt (Standard for the Uniform Scheduling of Medicines and Poisons)

SECTION 16. OTHER INFORMATION

Trademark information Dropp® 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

N.O.S.	Not otherwise specified
NOEC/NOEL	No observed effect concentration/level
OECD	Organization for Economic Co-operation and Development
OES BCS	OES BCS: Internal Bayer CropScience "Occupational Exposure Standard"
PEAK	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.
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SK-SEN	Skin sensitiser
SKIN_DES	SKIN_DES: Skin notation: Absorption through the skin may be a significant source of exposure.
STEL	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.
TWA	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.
TWA	Time weighted average
UN	United Nations
WHO	World health organisation

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

END OF SDS