

Safety Data Sheet



Spearhead® Selective Herbicide

Version 1 / AUS
102000022432

1/11
Revision Date: 02.11.2016
Print Date: 02.11.2016

SECTION 1: IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Trade name Spearhead® Selective Herbicide
Product code (UVP) 06069215

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

Use 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.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

Acute toxicity: Category 4
H302 Harmful if swallowed.

Skin irritation: Category 2
H315 Causes skin irritation.

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

Labelling according to specific Australian legislation

Hazard label for supply/use required.

Hazardous components which must be listed on the label:

MCPA
Clopyralid
Diflufenican

Signal word: Danger



Spearhead® Selective Herbicide

Version 1 / AUS
102000022432

2/11
Revision Date: 02.11.2016
Print Date: 02.11.2016

Hazard statements

- H302 Harmful if swallowed.
- H315 Causes skin irritation.
- H400 Very toxic to aquatic life.
- H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements

- P264 Wash hands thoroughly after handling.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.
- P301 + P312 IF SWALLOWED: Call a POISON CENTER/doctor/physician if you feel unwell.
- P330 Rinse mouth.
- P302 + P352 IF ON SKIN: Wash with plenty of water/ soap.
- P332 + P313 If skin irritation occurs: Get medical advice/ attention.
- P362 Take off contaminated clothing and wash before reuse.
- P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor/ physician.
- 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

MCPA/Clopyralid/Diflufenican 300:20:15 g/l
Chemical nature Suspension concentrate (=flowable concentrate)(SC)

Chemical Name	CAS-No.	Concentration [%]
MCPA	94-74-6	25.64
Clopyralid	1702-17-6	1.71
Diflufenican	83164-33-4	1.28
1,2-Propanediol	57-55-6	>= 1.00 - <= 5.00
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.

4.1 Description of first aid measures

- Inhalation** Move to fresh air. If symptoms persist, call a physician.
- Skin contact** Wash off thoroughly with plenty of soap and water, if available with polyethyleneglycol 400, subsequently rinse with water. If symptoms persist, call a physician.



Spearhead® Selective Herbicide

Version 1 / AUS
102000022432

3/11
Revision Date: 02.11.2016
Print Date: 02.11.2016

Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If eye irritation or redness persists, see an ophthalmologist.
Ingestion	Rinse mouth. Keep at rest. Obtain medical attention.
4.2 Most important symptoms and effects, both acute and delayed	
Symptoms	Local: Prolonged and repeated contact with skin, eyes or mucous membranes may cause irritation., Systemic: Mild acidosis, Tachycardia, Irregular cardiac activity, Low blood pressure, Circulatory collapse, Cough, Shortness of breath, Nausea, Vomiting, Diarrhoea, Abdominal pain, Rhabdomyolysis, Somnolence, Coma, Fever, Convulsions
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. Elimination by dialysis (forced alkaline diuresis). There is no specific antidote.

SECTION 5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Suitable Water, Foam, Dry chemical

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 (NO_x), Hydrogen fluoride, Hydrogen chloride (HCl)

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. Do not allow run-off from fire fighting to enter drains or water courses. Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Whenever possible, contain fire-fighting water by diking area with sand or earth.

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



Spearhead® Selective Herbicide

Version 1 / AUS
102000022432

4/11
Revision Date: 02.11.2016
Print Date: 02.11.2016

6.2 Environmental precautions Do not contaminate surface or ground water by cleaning equipment or disposal of wastes, including equipment wash 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.

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

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. Store in original container. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from direct sunlight. Store in a cool, dry place and in such a manner as to prevent cross contamination with other crop protection products, fertilizers, food, and feed.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Components	CAS-No.	Control parameters	Update	Basis
1,2-Propanediol (Total vapour and particulates.)	57-55-6	474 mg/m ³ /150 ppm (TWA)	12 2011	AU NOEL
1,2-Propanediol (Particulate.)	57-55-6	10 mg/m ³ (TWA)	12 2011	AU NOEL

8.2 Exposure controls

Respiratory protection Use respiratory protection for organic vapours.

Hand protection PVC or nitrile rubber gloves

Eye protection Safety glasses with side-shields

Skin and body protection Impermeable protective clothing.

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.



Spearhead® Selective Herbicide

Version 1 / AUS
102000022432

5/11
Revision Date: 02.11.2016
Print Date: 02.11.2016

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Form	suspension
Colour	brown
Odour	almost odourless
pH	9.0 - 11.0 at 100 % (23 °C)
Density	ca. 1.17 g/cm ³ at 20 °C
Partition coefficient: n-octanol/water	MCPA: log Pow: -0.81 Clopyralid: log Pow: -2.63 Diflufenican: log Pow: 4.2

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 Extremes of temperature and direct sunlight.

10.5 Incompatible materials No data available

10.6 Hazardous decomposition products No decomposition products expected under normal conditions of use.

SECTION 11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute oral toxicity	LD50 2,675 - 3,738 mg/kg The value mentioned relates to the active ingredient clopyralid. LD50 > 2,000 mg/kg The value mentioned relates to the active ingredient diflufenican. LD50 900 - 1,160 mg/kg The value mentioned relates to the active ingredient MCPA.
Acute inhalation toxicity	LC50 (Rat) > 0.38 mg/l Exposure time: 4 h The value mentioned relates to the active ingredient clopyralid. LC50 (Rat) > 2.34 mg/l Exposure time: 4 h The value mentioned relates to the active ingredient diflufenican.



Spearhead® Selective Herbicide

Version 1 / AUS
102000022432

6/11
Revision Date: 02.11.2016
Print Date: 02.11.2016

	LC50 (Rat) > 6.36 mg/l Exposure time: 4 h The value mentioned relates to the active ingredient MCPA.
Acute dermal toxicity	LD50 (Rabbit) > 2,000 mg/kg The value mentioned relates to the active ingredient clopyralid. LD50 (Rat) > 2,000 mg/kg The value mentioned relates to the active ingredient diflufenican. LD50 (Rat) > 4,000 mg/kg The value mentioned relates to the active ingredient MCPA.
Skin irritation	Mild skin irritation. Data refer to main components.
Eye irritation	Severe eye irritation. Data refer to main components.

Assessment mutagenicity

MCPA was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.
Clopyralid was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.
Diflufenican was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.

Assessment carcinogenicity

MCPA was not carcinogenic in lifetime feeding studies in rats and mice.
Clopyralid was not carcinogenic in lifetime feeding studies in rats and mice.
Diflufenican was not carcinogenic in lifetime feeding studies in rats and mice.

Assessment toxicity to reproduction

MCPA did not cause reproductive toxicity in a two-generation study in rats.
Clopyralid did not cause reproductive toxicity in a two-generation study in rats.
Diflufenican did not cause reproductive toxicity in a two-generation study in rats.

Assessment developmental toxicity

MCPA caused developmental toxicity only at dose levels toxic to the dams. MCPA caused a delayed foetal growth.
Clopyralid did not cause developmental toxicity in rats and rabbits.
Diflufenican did not cause developmental toxicity in rats and rabbits.

Assessment STOT Specific target organ toxicity – repeated exposure

MCPA did not cause specific target organ toxicity in experimental animal studies.
Clopyralid did not cause specific target organ toxicity in experimental animal studies.
Diflufenican 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

May be harmful if inhaled.
Irritating to skin.
May cause irreversible eye damage.
Harmful if swallowed.

Early onset symptoms related to exposure

Refer to Section 4



Spearhead® Selective Herbicide

Version 1 / AUS
102000022432

7/11
Revision Date: 02.11.2016
Print Date: 02.11.2016

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)) 232 mg/l
Exposure time: 96 h
The value mentioned relates to the active ingredient MCPA.

LC50 (Oncorhynchus mykiss (rainbow trout)) 56 - 100mg/l
Exposure time: 96 h
The value mentioned relates to the active ingredient diflufenican.

LC50 (Oncorhynchus mykiss (rainbow trout)) 103.5 mg/l
Exposure time: 96 h
The value mentioned relates to the active ingredient clopyralid.

Toxicity to aquatic invertebrates

EC50 (Daphnia (water flea)) 225 mg/l
Exposure time: 48 h
The value mentioned relates to the active ingredient clopyralid.

LC50 (Daphnia (water flea)) > 100 mg/l The value mentioned relates to the active ingredient MCPA.

LC50 (Daphnia (water flea)) 10 mg/l
Exposure time: 48 h
The value mentioned relates to the active ingredient diflufenican.

Toxicity to aquatic plants

EC50 (Raphidocelis subcapitata (freshwater green alga)) 6.9 mg/l
Exposure time: 96 h
The value mentioned relates to the active ingredient clopyralid.

(Algae) 10 mg/l
The value mentioned relates to the active ingredient diflufenican.

Toxicity to other organisms

LD50 (Colinus virginianus (Bobwhite quail)) 377 mg/kg
The value mentioned relates to the active ingredient MCPA.



Spearhead® Selective Herbicide

Version 1 / AUS
102000022432

8/11
Revision Date: 02.11.2016
Print Date: 02.11.2016

LD50 (Colinus virginianus (Bobwhite quail)) > 2,000 mg/kg
The value mentioned relates to the active ingredient clopyralid.

LD50 (Colinus virginianus (Bobwhite quail)) > 2,150 mg/kg
The value mentioned relates to the active ingredient diflufenican.

(Apis mellifera (bees))
The value mentioned relates to the active ingredient clopyralid.
Non-hazardous for bees.

(Apis mellifera (bees))
The value mentioned relates to the active ingredient diflufenican.
Non-hazardous for bees.

LD50 (Apis mellifera (bees)) 0.104mg/bee
The value mentioned relates to the active ingredient MCPA.

12.2 Persistence and degradability

Biodegradability MCPA:
Not rapidly biodegradable
Clopyralid:
Not rapidly biodegradable
Diflufenican:
Not rapidly biodegradable

Koc MCPA: Koc: 10 - 157
Clopyralid: Koc: 0.4 - 12.9
Diflufenican: Koc: 3417

12.3 Bioaccumulative potential

Bioaccumulation MCPA: Bioconcentration factor (BCF) 1
Does not bioaccumulate.
Clopyralid: Bioconcentration factor (BCF) < 1
Does not bioaccumulate.
Diflufenican: Bioconcentration factor (BCF) 1,596
Does not bioaccumulate.

12.4 Mobility in soil

Mobility in soil MCPA: Mobile in soils
Clopyralid: Highly mobile in soils
Diflufenican: Slightly mobile in soils

12.5 Other adverse effects

Additional ecological information No further ecological information is 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.



Spearhead® Selective Herbicide

Version 1 / AUS
102000022432

9/11
Revision Date: 02.11.2016
Print Date: 02.11.2016

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. (DIFLUFENICAN 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. (DIFLUFENICAN 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. (DIFLUFENICAN SOLUTION)

SECTION 15. REGULATORY INFORMATION

Registered according to the Agricultural and Veterinary Chemicals Code Act 1994
Australian Pesticides and Veterinary Medicines Authority approval number: 53833

SUSMP classification (Poison Schedule)

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

SECTION 16. OTHER INFORMATION

Trademark information Spearhead® 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



Spearhead® Selective Herbicide

Version 1 / AUS
102000022432

10/11
Revision Date: 02.11.2016
Print Date: 02.11.2016

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 Conc.	Ceiling Limit Value 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 sensitizer
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

Safety Data Sheet



Spearhead® Selective Herbicide

Version 1 / AUS
102000022432

11/11

Revision Date: 02.11.2016

Print Date: 02.11.2016

TWA working day, for a five-day working week.
 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