

SAFETY DATA SHEET



JAGUAR

Version 1 / NZ
102000027891

1/11
Revision Date: 03.11.2017
Print Date: 03.11.2017

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Trade name JAGUAR
Product code (UVP) 81010587

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

Use Herbicide
EPA-Nr. HSR100855

1.3 Details of the supplier of the safety data sheet

Supplier Bayer New Zealand Limited
3 Argus Place, Hillcrest
Auckland 0627
New Zealand
Telephone 0800 428 246
Telefax (09) 441 8645

1.4 Emergency telephone no.

Emergency Number 0800 734 607 (24hr)
Global Incident Response Hotline (24h) +1 (760) 476-3964 (Company 3E for Bayer AG, Crop Science Division)

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classified as hazardous according to the criteria in the Hazardous Substances (Minimum Degrees of Hazard) Regulations 2001

3.1D
H227 Combustible liquid.
6.1D
H302 Harmful if swallowed.
H332 Harmful if inhaled.
6.3A
H315 Causes skin irritation.
6.4A
H320 Causes eye irritation.
6.5B
H317 May cause an allergic skin reaction.
6.8A
H360 May damage fertility or the unborn child.

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- 6.9B
H373 May cause damage to organs through prolonged or repeated exposure if swallowed.
- 9.1A
H410 Very toxic to aquatic life with long lasting effects.
- 9.2A
H421 Very toxic to the soil environment.
- 9.3B
H432 Toxic to terrestrial vertebrates.

2.2 Label elements

Labelling in accordance with Hazardous Substances Identification Regulations 2001

Hazard label for supply/use required.



Signal word: Danger

Hazard statements

- H227 Combustible liquid.
H302 + H332 Harmful if swallowed or if inhaled.
H315 + H320 Causes skin and eye irritation.
H317 May cause an allergic skin reaction.
H360 May damage fertility or the unborn child.
H373 May cause damage to organs through prolonged or repeated exposure if swallowed.
H410 Very toxic to aquatic life with long lasting effects.
H421 Very toxic to the soil environment.
H432 Toxic to terrestrial vertebrates.

Precautionary statements

- P102 Keep out of reach of children.
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P308 + P311 IF exposed or concerned: Call a POISON CENTER/ doctor/ physician.
P321 Specific treatment (see supplemental first aid instructions on this label).
P391 Collect spillage.
P501 Dispose of contents/container in accordance with local regulation.

2.3 Other hazards

No other hazards known.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

Chemical nature

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Emulsifiable concentrate (EC)
Bromoxynil/Diflufenican 250:25 g/l

Hazardous components

Name	CAS-No.	Conc. [%]
Bromoxynil octanoate	1689-99-2	34
Diflufenican	83164-33-4	2.3
N-Methyl-2-pyrrolidone	872-50-4	$\geq 10 - \leq 20$
Solvent Naphtha (petroleum), heavy aromatic	64742-94-5	$\geq 30 - \leq 40$
Benzenesulfonic acid, mono-C11-13-branched alkyl derivs., calcium salts	68953-96-8	$> 1 - < 5$
2-Ethylhexan-1-ol	104-76-7	$> 1 - < 5$
Ethoxylated polyarylphenol	99734-09-5	$> 1 - < 25$

Further information

Bromoxynil octanoate	1689-99-2	M-Factor: 10 (acute), 10 (chronic)
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SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

Inhalation	Move the victim to fresh air and keep at rest. Oxygen or artificial respiration if needed. If symptoms persist, call a physician.
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	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Ingestion	Rinse out mouth and give water in small sips to drink. Do NOT induce vomiting. Keep patient warm and at rest. Call a physician or poison control center immediately.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms	Local:, Sensitisation, Irritation, Systemic:, Lethargy, Thirst, Anxiety, Hyperventilation, Tachycardia, Muscle rigidity, Nausea, Vomiting, Sweating, Salivation, Convulsions
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4.3 Indication of any immediate medical attention and special treatment needed

Risks	Contains hydrocarbon solvents. May pose an aspiration pneumonia hazard.
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Treatment Watch for pulmonary edema, which may develop in serious cases of poisoning even after 24-48 hours. At first sign of pulmonary edema, the patient should be placed in an oxygen tent and treated 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. In case of hyperthermia physical cooling is advisable; in case of muscle rigidity muscle relaxants and mechanical ventilation may support in counteracting hyperthermia. There is no specific antidote.

Contact the National Poisons and Hazardous Chemicals Information center in Dunedin, PO Box 913, Dunedin. Phone 0800 POISON (0800 764 766).

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

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

Unsuitable High volume water jet

5.2 Special hazards arising from the substance or mixture Dangerous gases are evolved in the event of a fire., In the event of fire the following may be released:, Hydrogen bromide (HBr), Hydrogen cyanide (hydrocyanic acid), Hydrogen fluoride, Nitrogen oxides (NOx), Carbon dioxide (CO₂), Carbon monoxide (CO)

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. 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.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

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

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 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. Keep in suitable, closed containers for disposal.

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Additional advice	If the product is accidentally spilled, do not allow to enter soil, waterways or waste water canal.
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 protection against fire and explosion Keep away from heat and sources of ignition. Vapours may form explosive mixture with air. Take measures to prevent the build up of electrostatic charge.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers Keep out of the reach of children. Store in a place accessible by authorized persons only. Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from freezing. Keep away from direct sunlight.

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
Bromoxynil octanoate	1689-99-2	0.21 mg/m ³ (SK-SEN)		OES BCS*
Diflufenican	83164-33-4	5.5 mg/m ³ (TWA)		OES BCS*
Solvent Naphtha (petroleum), heavy aromatic	64742-94-5	1,600 mg/m ³ /400 ppm (TWA)	02 2013	NZ OEL
N-Methyl-2-pyrrolidone	872-50-4	103 mg/m ³ /25 ppm (TWA)	07 2011	NZ OEL
N-Methyl-2-pyrrolidone	872-50-4	309 mg/m ³ /75 ppm (STEL)	07 2011	NZ OEL
N-Methyl-2-pyrrolidone	872-50-4	19 ppm (TWA)		OES BCS*
2-Methylpropan-1-ol	78-83-1	152 mg/m ³ /50 ppm (TWA)	07 2011	NZ OEL

*OES BCS: Internal Bayer AG, Crop Science Division "Occupational Exposure Standard"

8.2 Exposure controls

Personal protective equipment

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

Respiratory protection Wear respirator with an organic vapours and gas filter mask (protection factor 10) conforming to EN140 type A or equivalent.

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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) and faceshield (conforming to EN166, Field of Use = 3 or equivalent).
Skin and body protection	Wear standard coveralls and Category 3 Type 3 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 chemical protection suit is splashed, sprayed or significantly contaminated, decontaminate as far as possible, then carefully remove and dispose of as advised by manufacturer.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Form	Liquid, clear
Colour	light yellow to dark brown
Odour	aromatic
pH	ca. 4.2 at 10 % (23 °C) (deionized water)
Flash point	66 °C
Ignition temperature	> 200 °C The data refer to the solvent.
Upper explosion limit	7.00 %(V) The data refer to the solvent.
Lower explosion limit	0.6 %(V) The data refer to the solvent.
Density	ca. 1.09 g/cm ³ at 20 °C
Water solubility	emulsifiable
9.2 Other information	Further safety related physical-chemical data are not known.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

Not applicable

10.3 Possibility of hazardous reactions No hazardous reactions known.

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- 10.4 Conditions to avoid** Elevated temperatures
Heat, flames and sparks.
- 10.5 Incompatible materials** Strong acids, Strong bases, Oxidizing agents, Store only in the original container.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

- Acute oral toxicity** LD50 (Rat) 1,113 mg/kg
Test conducted with a similar formulation.
- Acute inhalation toxicity** LC50 (Rat) 2.1 mg/l
Exposure time: 4 h
Irritating to respiratory system.
The information is derived from the properties of the individual components.
- Acute dermal toxicity** LD50 (Rat) > 2,000 mg/kg
Test conducted with a similar formulation.
- Skin irritation** Irritating to skin. (Rabbit)
Test conducted with a similar formulation.
- Eye irritation** Irritating to eyes. (Rabbit)
Test conducted with a similar formulation.
- Sensitisation** Sensitising (Guinea pig)
The information is derived from the properties of the individual components.

Assessment STOT Specific target organ toxicity – single exposure

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

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

N-methyl-2-pyrrolidone: May cause respiratory irritation.

Assessment STOT Specific target organ toxicity – repeated exposure

Bromoxynil octanoate caused specific target organ toxicity in experimental animal studies in the following organ(s): Liver. The observed effects do not appear to be relevant for humans.

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

N-methyl-2-pyrrolidone caused specific target organ toxicity in experimental animal studies in the following organ(s): Testes.

Assessment mutagenicity

Bromoxynil octanoate was not mutagenic or genotoxic based on the overall weight of evidence 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.

N-methyl-2-pyrrolidone was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.

Assessment carcinogenicity

Bromoxynil octanoate caused at high dose levels an increased incidence of tumours in the following organ(s): Liver. The mechanism of tumour formation is not considered to be relevant to man.

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Diflufenican was not carcinogenic in lifetime feeding studies in rats and mice.
N-methyl-2-pyrrolidone was not carcinogenic in lifetime feeding studies in rats and mice.

Assessment toxicity to reproduction

Bromoxynil octanoate 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.
N-methyl-2-pyrrolidone caused reproduction toxicity in a two-generation study in rats only at dose levels also toxic to the parent animals. N-methyl-2-pyrrolidone caused a reduced pup survival, a reduced litter size and a reduced pup weight.

Assessment developmental toxicity

Bromoxynil octanoate caused a delayed foetal growth, an increased incidence of non-specific malformations. Bromoxynil octanoate caused developmental toxicity only at dose levels toxic to the dams.

Diflufenican did not cause developmental toxicity in rats and rabbits.

N-methyl-2-pyrrolidone caused developmental toxicity only at dose levels toxic to the dams. N-methyl-2-pyrrolidone caused a reduced pup survival.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish LC50 (Oncorhynchus mykiss (rainbow trout)) > 0.109 mg/l
Exposure time: 96 h
The value mentioned relates to the active ingredient diflufenican.

Toxicity to aquatic invertebrates EC50 (Daphnia magna (Water flea)) 0.046 mg/l
Exposure time: 48 h
The value mentioned relates to the active ingredient bromoxynil octanoate.

EC50 (Daphnia magna (Water flea)) > 0.24 mg/l
Exposure time: 48 h
The value mentioned relates to the active ingredient diflufenican.

Toxicity to aquatic plants EC50 (Desmodesmus subspicatus (green algae)) 1 mg/l
Exposure time: 96 h
The value mentioned relates to the active ingredient bromoxynil octanoate.
EC50 (Algae) > 10 mg/l
Exposure time: 96 h
The value mentioned relates to the active ingredient diflufenican.

12.2 Persistence and degradability

Biodegradability Not applicable for this mixture.

12.3 Bioaccumulative potential

Bioaccumulation Lepomis macrochirus (Bluegill sunfish)

Bioconcentration factor (BCF): 230
The value mentioned relates to the combination of bromoxynil phenol and the active ingredient bromoxynil octanoate.
Lepomis macrochirus (Bluegill sunfish)

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Bioconcentration factor (BCF): 1,596
The value mentioned relates to the active ingredient diflufenican.

12.4 Mobility in soil

Mobility in soil Not applicable for this mixture.

12.5 Results of PBT and vPvB assessment

Not relevant as no chemical safety report is necessary.

12.6 Other adverse effects

Additional ecological information No other effects to be mentioned.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product Dispose of this product only by using according to the label, or at an approved landfill or other approved facility.

Contaminated packaging Triple rinse containers. Recycle if possible. If allowed under local authority, burn if circumstances, especially wind direction permit, otherwise crush and bury in an approved local authority facility. Do not use container for any other purpose.

SECTION 14: TRANSPORT INFORMATION

This transportation information is not intended to convey all specific regulatory information relating to this product. It does not address regulatory variations due to package size or special transportation requirements.

ADR/RID/ADN

14.1 UN number	3082
14.2 Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (BROMOXYNIL OCTANOATE SOLUTION)
14.3 Transport hazard class(es)	9
14.4 Packing group	III
14.5 Environm. Hazardous Mark	YES
Hazchem Code	3Z

IMDG

14.1 UN number	3082
14.2 Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (BROMOXYNIL OCTANOATE SOLUTION)
14.3 Transport hazard class(es)	9
14.4 Packing group	III
14.5 Marine pollutant	YES

IATA

14.1 UN number	3082
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14.2 Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (BROMOXYNIL OCTANOATE SOLUTION)
14.3 Transport hazard class(es)	9
14.4 Packing group	III
14.5 Environm. Hazardous Mark	YES

14.6 Special precautions for user

See sections 6 to 8 of this Safety Data Sheet.

14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code

No transport in bulk according to the IBC Code.

SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

HSNO approval-Nr.	HSR100855
HSNO Controls	See www.epa.govt.nz
ACVM Reg.	P4243
ACVM Condition	See www.foodsafety.govt.nz

SECTION 16: OTHER INFORMATION

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
CAS-Nr.	Chemical Abstracts Service number
Conc.	Concentration
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
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail

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TWA	Time weighted average
UN	United Nations
WHO	World health organisation

The data given here is based on current knowledge and experience. The purpose of this Safety Data Sheet is to describe products in terms of their safety requirements. The above details do not imply any guarantee concerning composition, properties or performance of the product.

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