



4 Farmers ... For Farmers
Printing date 22.08.2016

SAFETY DATA SHEET

According to Safe Work Australia

Revision: 22.08.2016

1 . IDENTIFICATION: PRODUCT IDENTIFIER AND CHEMICAL IDENTITY

Product Name: 4FARMERS BROMOXYNIL DIFLUFENICAN SELECTIVE HERBICIDE

Other Means of Identification: Mixture

Product Code: BROMOXYNIL 250 / DFF 25

Recommended Use of the Chemical and Restriction on Use: Agricultural herbicide

Details of Manufacturer or Importer:

4Farmers Australia Pty Ltd
70 McDowell Street
Welshpool WA 6106

Phone Number: +61 8 9356 3446

Emergency telephone number: National Poison Information Centre: 13 11 26

2 . HAZARDS IDENTIFICATION

Hazardous Nature:

Classified as Hazardous according to the Globally Harmonised System of Classification and Labelling of Chemicals (GHS) and Safe Work Australia criteria.

Not subject to the ADG Code when transported in Australia by Road or Rail in packages 500kg(L) or less; or IBCs (refer to SP AU01). However if transported by Air or Sea, this provision does not apply. Then the product is classed as Dangerous (Class 9 Environmentally Hazardous) by IATA and IMDG/IMSBC respectively. See details below and in Section 14 of this SDS.



skull and crossbones

Acute Tox. (Inhalation) 3 H331 Toxic if inhaled.



health hazard

Repr. 1B H360 May damage fertility or the unborn child.



environment

Aquatic Acute 1 H400 Very toxic to aquatic life.

Aquatic Chronic 1 H410 Very toxic to aquatic life with long lasting effects.



Acute Tox. (Oral) 4 H302 Harmful if swallowed.

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2A H319 Causes serious eye irritation.

Skin Sens. 1 H317 May cause an allergic skin reaction.

STOT SE 3 H335 May cause respiratory irritation.

Flam. Liq. 4 H227 Combustible liquid.

Signal Word Danger

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Hazard Statements

H227 Combustible liquid.
 H302 Harmful if swallowed.
 H331 Toxic if inhaled.
 H315 Causes skin irritation.
 H319 Causes serious eye irritation.
 H317 May cause an allergic skin reaction.
 H360 May damage fertility or the unborn child.
 H335 May cause respiratory irritation.
 H410 Very toxic to aquatic life with long lasting effects.

Precautionary Statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
 P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
 P280 Wear protective gloves/protective clothing/eye protection/face protection.
 P273 Avoid release to the environment.
 P264 Wash hands thoroughly after handling.
 P270 Do not eat, drink or smoke when using this product.
 P271 Use only outdoors or in a well-ventilated area.
 P272 Contaminated work clothing should not be allowed out of the workplace.
 P201 Obtain special instructions before use.
 P202 Do not handle until all safety precautions have been read and understood.
 P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P321 Specific treatment (see on this label).
 P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
 P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 P308+P313 IF exposed or concerned: Get medical advice/attention.
 P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
 P337+P313 If eye irritation persists: Get medical advice/attention.
 P330 Rinse mouth.
 P370+P378 In case of fire: Use for extinction: CO₂, powder or water spray.
 P302+P352 IF ON SKIN: Wash with plenty of water.
 P391 Collect spillage.
 P362+P364 Take off contaminated clothing and wash it before reuse.
 P405 Store locked up.
 P403+P233 Store in a well-ventilated place. Keep container tightly closed.
 P403+P235 Store in a well-ventilated place. Keep cool.
 P501 Dispose of contents/container in accordance with local/regional/national regulations.

3. COMPOSITION AND INFORMATION ON INGREDIENTS

Chemical Characterization: Mixtures**Description:** Mixture of substances listed below with nonhazardous additions.**Hazardous Components:**

103-09-3	2-ethylhexyl acetate ⚠ Skin Irrit. 2, H315; Flam. Liq. 4, H227	39.0%
86702-80-9	Bromoxynil Octanoate Ester ⚠ Acute Tox. (Inhalation) 3, H331; ⚠ Repr. 2, H361; ⚠ Aquatic Acute 1, H400; Aquatic Chronic 1, H410; ⚠ Acute Tox. (Oral) 4, H302; Skin Sens. 1, H317	35.4%

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872-50-4	N-methyl-2-pyrrolidone ⚠ Repr. 1B, H360; ⚠ Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335; Flam. Liq. 4, H227	14%
83164-33-4	Diflufenican Aquatic Chronic 3, H412	2.4%

4 . FIRST AID MEASURES

Inhalation:

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Seek medical attention if breathing problems persist.

Skin Contact:

In case of skin contact, immediately remove contaminated clothing and wash affected areas with water and soap. Seek medical attention if symptoms occur.

Eye Contact:

In case of eye contact, hold eyelids open and rinse with water for at least 15 minutes. Seek medical attention if symptoms persist.

Ingestion:

If swallowed, do not induce vomiting. Immediately rinse mouth with water. Give a glass of water. Never give anything by mouth to an unconscious person. Seek immediate medical attention.

Symptoms Caused by Exposure:

Inhalation: Toxic if inhaled. May cause respiratory irritation.

Skin Contact: Causes skin irritation. May cause an allergic skin reaction.

Eye Contact: Causes serious eye irritation.

Ingestion: Harmful if swallowed.

5 . FIRE FIGHTING MEASURES

Suitable Extinguishing Media: Water fog, alcohol resistant foam, dry agent or carbon dioxide.

Specific Hazards Arising from the Chemical:

Hazardous combustion products include toxic and noxious fumes.

Combustible liquid.

Closed containers may explode when exposed to extreme heat. Containers close to fire should be removed if safe to do so. Use water spray to cool fire exposed containers.

Special Protective Equipment and Precautions for Fire Fighters:

When fighting a major fire wear self-contained breathing apparatus and protective equipment.

6 . ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures:

Wear approved respiratory protection, chemical resistant gloves, protective clothing and safety boots. Evacuate all non-essential personnel from affected area. Do not breathe vapours. Ensure adequate ventilation. Extinguish all sources of ignition. Avoid sparks and open flames. No smoking.

Environmental Precautions:

In the event of a major spill, prevent spillage from entering drains or water courses.

Methods and Materials for Containment and Cleaning Up:

Stop leak if safe to do so and absorb spill with sand, earth, vermiculite or some other absorbent material. Collect the spilled material and place into a suitable container for disposal. Wash area after spills.

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7 . HANDLING AND STORAGE

Precautions for Safe Handling:

Use of safe work practices are recommended to avoid eye or skin contact and inhalation of vapours. Use only outdoors or in a well-ventilated area.

Food, beverages and tobacco products should not be stored or consumed where this material is in use. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storage or re-use. Provide eyewash fountains and safety showers in close proximity to points of potential exposure.

Conditions for Safe Storage:

Store in a cool, dry and well ventilated area. Keep container tightly closed when not in use. Protect from heat, sparks, open flames and other sources of ignition. Keep away from strong oxidising agents, acids and bases.

8 . EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure Standards:

872-50-4 N-methyl-2-pyrrolidone

NES	STEL: 309 mg/m ³ , 75 ppm
	TWA: 103 mg/m ³ , 25 ppm
	Sk

Engineering Controls:

Maintain air concentration below occupational exposure standards, providing adequate ventilation.

Respiratory Protection:

Use an approved vapour respirator under conditions where exposure to the substance is apparent (e.g. generation of high concentrations of mist or vapour, inadequate ventilation, development of respiratory tract irritation) and engineering controls are not feasible. See Australian Standards AS/NZS 1715 and 1716 for more information.

Skin Protection:

Elbow length PVC gloves. See Australian/New Zealand Standard AS/NZS 2161 for more information.

When selecting gloves for use against certain chemicals, the degradation resistance, permeation rate and permeation breakthrough time should be considered.

Occupational protective clothing (depending on conditions in which it has to be used, in particular as regards the period for which it is worn, which shall be determined on the basis of the seriousness of the risk, the frequency of exposure to the risk, the characteristics of the workstation of each worker and the performance of the protective clothing). See Australian/New Zealand Standard AS/NZS 4501 for more information.

Eye and Face Protection:

Eye and face protectors for protection against splashing materials or liquids. See Australian/New Zealand Standard AS/NZS 1337 for more information.

9 . PHYSICAL AND CHEMICAL PROPERTIES

Appearance:

Form:	Liquid
Colour:	Clear brown
Odour:	Sweet chemical odour
Odour Threshold:	No information available
pH-Value:	6.0 - 7.0
Melting point/Melting range:	No information available
Initial Boiling Point/Boiling Range:	199 °C
Flash Point:	> 71 °C
Flammability:	Combustible Liquid Class 1

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Auto-ignition Temperature:	No information available
Decomposition Temperature:	No information available
Explosion Limits:	
Lower:	No information available
Upper:	No information available
Vapour Pressure:	No information available
Relative Density:	1.07
Vapour Density:	No information available
Evaporation Rate:	No information available
Solubility in Water:	Dispersible
Partition Coefficient (n-octanol/water):	No information available

10 . STABILITY AND REACTIVITY

Possibility of Hazardous Reactions: Hazardous polymerisation will not occur.

Chemical Stability: Stable at ambient temperature and under normal conditions of use.

Conditions to Avoid: Heat, sparks, open flames and other sources of ignition.

Incompatible Materials: Strong oxidising agents, acids and bases.

Hazardous Decomposition Products: Toxic and noxious fumes.

11 . TOXICOLOGICAL INFORMATION

Toxicity:

LD₅₀/LC₅₀ Values Relevant for Classification:		
103-09-3 2-ethylhexyl acetate		
Oral	LD ₅₀	3000 mg/kg (rat)
86702-80-9 Bromoxynil Octanoate Ester		
Oral	LD ₅₀	365 mg/kg (rat)
Dermal	LD ₅₀	>2000 mg/kg (rat)
Inhalation	LC ₅₀ /4 h	0.72 - 0.81 mg/L (rat)
872-50-4 N-methyl-2-pyrrolidone		
Oral	LD ₅₀	3914 mg/kg (rat)
Dermal	LD ₅₀	8000 mg/kg (rabbit)
83164-33-4 Diflufenican		
Oral	LD ₅₀	>5000 mg/kg (rat)
Dermal	LD ₅₀	>2000 mg/kg (rat)
Inhalation	LC ₅₀ /4 h	>5.12 mg/L (rat)

Acute Health Effects

Inhalation: Toxic if inhaled. May cause respiratory irritation.

Skin: Causes skin irritation. May cause an allergic skin reaction.

Eye: Causes serious eye irritation.

Ingestion: Harmful if swallowed.

Skin Corrosion / Irritation: Causes skin irritation.

Serious Eye Damage / Irritation: Causes serious eye irritation.

Respiratory or Skin Sensitisation: May cause an allergic skin reaction.

Germ Cell Mutagenicity: Based on classification principles, the classification criteria are not met.

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Carcinogenicity: This product does NOT contain any IARC listed chemicals.

Reproductive Toxicity:

May damage fertility or the unborn child.

N-Methyl-2-pyrrolidone is classified by Safe Work Australia as Toxic to Reproduction Category 2.

Specific Target Organ Toxicity (STOT) - Single Exposure: May cause respiratory irritation.

Specific Target Organ Toxicity (STOT) - Repeated Exposure:

Based on classification principles, the classification criteria are not met.

Aspiration Hazard: Based on classification principles, the classification criteria are not met.

Chronic Health Effects: No information available

Existing Conditions Aggravated by Exposure: No information available

Additional toxicological information:

The Australian Acceptable Daily Intake (ADI) for bromoxynil for a human is 0.003 mg/kg/day, set for the public for daily, lifetime exposure. This is based on the NOEL of 0.3 mg/kg/day, the level determined to show no effects during long term exposure for the most sensitive indicators and the most sensitive species.

The Australian Acceptable Daily Intake (ADI) for diflufenican for a human is 0.2 mg/kg/day, set for the public for daily, lifetime exposure. This is based on the NOEL of 16.3 mg/kg/day, the level determined to show no effects during long term exposure for the most sensitive indicators and the most sensitive species.

(Ref: Comm. Dept. of Health and Ageing Office of Chemical Safety, 'ADI List', March 2016).

12 . ECOLOGICAL INFORMATION

Ecotoxicity:

Bromoxynil:

LC50 170 mg/kg (bobwhite quail)

LC50 2350 mg/kg (mallard duck)

Diflufenican:

LC50 >2150 mg/kg (bobwhite quail)

LC50 >4000 mg/kg (mallard duck)

Aquatic toxicity:

Very Toxic to aquatic life with long lasting effects.

86702-80-9 Bromoxynil Octanoate Ester

EC₅₀ 1 mg/L (algae)

LC₅₀ 0.06 mg/L (sunfish)

>190 mg/L (daphnia)

83164-33-4 Diflufenican

LC₅₀ 109 µg/L (rainbow trout)

>0.046 mg/L (algae)

>240 µg/L (daphnia)

Persistence and Degradability:

Bromoxynil has low persistence in soil. Half life in soil is about 10 days, dependent on pH.

Diflufenican is not readily biodegradable. Half life in soil is 85 - 282 days, dependent on soil type and water content.

N-Methyl-pyrrolidone is readily biodegradable.

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Bioaccumulative Potential:

Bromoxynil has a bioconcentration factor of 230.

Diflufenican has a bioconcentration factor of 1.6.

Mobility in Soil: No information available**Other adverse effects:** No information available**13 . DISPOSAL CONSIDERATIONS****Disposal Methods and Containers:** Dispose according to applicable local and state government regulations.**Special Precautions for Landfill or Incineration:**

Please consult your state Land Waste Management Authority for more information.

14 . TRANSPORT INFORMATION**UN Number****ADG** Not subject to the ADG Code when transported in Australia by Road or Rail in packages 500kg(L) or less; or IBCs (refer to SP AU01).**IMDG, IATA** UN3082**Proper Shipping Name****ADG** Not regulated**IMDG** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Bromoxynil Octanoate Ester), MARINE POLLUTANT**IATA** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Bromoxynil Octanoate Ester)**Dangerous Goods Class****ADG Class:** Not regulated**IMDG Class:** 9 Miscellaneous dangerous substances and articles.**Packing Group:****ADG** Not regulated**IMDG, IATA** III**Marine pollutant:** Yes

Symbol (fish and tree)

EMS Number: F-A,S-F**Hazchem Code:** .3Z**Limited Quantities:** 5L**15 . REGULATORY INFORMATION****Australian Inventory of Chemical Substances:**

103-09-3	2-ethylhexyl acetate
872-50-4	N-methyl-2-pyrrolidone
83164-33-4	Diflufenican

Standard for the Uniform Scheduling of Drugs and Poisons (SUSMP) - Poison Schedule:

Poisons Schedule: 6

16 . OTHER INFORMATION**Date of Preparation or Last Revision:** 22.08.2016

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Prepared by: MSDS.COM.AU Pty Ltd

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Abbreviations and acronyms:

ADG: Australian Dangerous Goods
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
CAS: Chemical Abstracts Service (division of the American Chemical Society)
LC₅₀: Lethal concentration, 50 percent
LD₅₀: Lethal dose, 50 percent
IARC: International Agency for Research on Cancer
STEL: Short Term Exposure Limit
TWA: Time Weighted Average
NES: National Exposure Standard (Safe Work Australia - Workplace Exposure Standards For Airborne Contaminants)
Flam. Liq. 4: Flammable liquids – Category 4
Acute Tox. (Oral) 4: Acute toxicity – Category 4
Acute Tox. (Inhalation) 3: Acute toxicity – Category 3
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A
Skin Sens. 1: Skin sensitisation, Hazard Category 1
Repr. 1B: Reproductive toxicity – Category 1B
Repr. 2: Reproductive toxicity – Category 2
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
Aquatic Acute 1: Hazardous to the aquatic environment, short-term (Acute). Category 1
Aquatic Chronic 1: Hazardous to the aquatic environment, long-term (Chronic). Category 1
Aquatic Chronic 3: Hazardous to the aquatic environment, long-term (Chronic). Category 3

Disclaimer

This SDS is prepared in accord with the Safe Work Australia document “Code of Practice for the Preparation of Safety Data Sheets for Hazardous Chemicals - December 2011”

The information contained in this safety data sheet is provided in good faith and is believed to be accurate at the date of issuance. 4Farmers Australia Pty Ltd makes no representation of the accuracy or comprehensiveness of the information and to the full extent allowed by law excludes all liability for any loss or damage related to the supply or use of the information in this material safety data sheet. MSDS.COM.AU Pty Ltd is not in a position to warrant the accuracy of the data herein. The user is cautioned to make their own determinations as to the suitability of the information provided to the particular circumstances in which the product is used.