

Section 1 - Identification of The Material and Supplier

Sabakem Pty Ltd
Suite 809, Level 8, 2 Queen St
Melbourne VIC 3000 AUSTRALIA

Phone: 03 9629 3979
www.sabakem.com
Emergency: 1800 033 111

Chemical nature: Blend of Diflufenican and Bromoxynil in a suitable solvent system.
Trade Name: **Reckon-B 275EC Herbicide**
APVMA Code: **69269**
Product Use: Agricultural herbicide for use as described on the product label.
Creation Date: **May, 2014**
This version issued: **April, 2025** and is valid for 5 years from this date.
Emergency telephone: **Poisons Information Centre 13 11 26 (24 hours)**

Section 2 - Hazards Identification**Statement of Hazardous Nature**

This product is classified as hazardous according to the Globally Harmonised System of Classification and Labelling of Chemicals (GHS) and Safe Work Australia criteria.

ADG Classification:

Not subject to the provisions of the Australian Code for the Transport of Dangerous Goods by Road and Rail when transported 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, and the product is classed as Dangerous (Class 9 Environmentally Hazardous) by IATA and IMDG respectively. See details below and in Section 14 of this SDS.

Classification of the substance or mixture:

Flammable Liquids Category 4
Reproductive Toxicity Category 1B
Aspiration Hazard Category 1
Acute Oral Toxicity Category 4
Acute Inhalation Toxicity Category 4
Skin Irritation Category 2
Serious Eye Irritation Category 2A
Skin Sensitisation Category 1



The following health hazard categories fall outside the scope of the Workplace Health and Safety Regulations

Acute Aquatic Toxicity Category 1
Chronic Aquatic Toxicity Category 1



GHS Signal word: DANGER

HAZARD STATEMENT(S):

H227: Combustible liquid.
H304: May be fatal if swallowed and enters airways.
H302: Harmful if swallowed.
H315: Causes skin irritation.
H317: May cause an allergic skin reaction.
H319: Causes serious eye irritation.
H332: Harmful if inhaled.
H360 May damage fertility or the unborn child.
H400: Very toxic to aquatic life
H410: Very toxic to aquatic life with long lasting effects.
AUH066: Repeated exposure may cause skin dryness and cracking

PRECAUTIONARY STATEMENT(S):**PREVENTION**

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.
P261: Avoid breathing fumes, mists, vapours or spray.
P264: Wash contacted areas 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.
P273: Avoid release to the environment.
P280: Wear protective gloves, protective clothing and eye or face protection.

RESPONSE

P301+P310: IF SWALLOWED: Immediately call a POISON CENTRE or doctor.
P301 + P312: IF SWALLOWED: Call a POISON CENTRE or doctor if you feel unwell.
P302 + P352: IF ON SKIN: Wash with plenty water.
P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313: If exposed or concerned: Get medical advice.
P312: Call a POISON CENTRE or doctor if you feel unwell
P321: Specific treatment (see on the label).
P330: Rinse mouth.
P331: Do NOT induce vomiting.
P332+P313: If skin irritation occurs: Get medical advice.
P333+P313: If skin irritation or rash occurs: Get medical advice.
P337+P313: If eye irritation persists: Get medical advice.
P362 + P364: Take off contaminated clothing and wash it before reuse.
P370+P378: In case of fire, use carbon dioxide, dry chemical, foam, water fog. Alcohol resistant foam is the preferred firefighting medium but, if it is not available, normal foam can be used.
P391: Collect spillage.

STORAGE

P403 Store in a well-ventilated place.
P405: Store locked up.

DISPOSAL

P501: Dispose of contents and containers as specified on the registered label.

Section 3 - Composition/Information on Ingredients

Ingredients	CAS No	Conc. (%w/v)
Bromoxynil (as the octanoate)	1689-99-2	25

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Diffluenican	83164-33-4	2.5
N-Methyl-2-pyrrolidone	872-50-4	17.5
Aromatic hydrocarbons	64742-94-5	39.7

Other components are not considered hazardous in this formulation and therefore are not required to be disclosed according to the WHS Regulations.

Section 4 - First Aid Measures

General Information:

You should call The Poisons Information Centre if you feel that you may have been poisoned, burned or irritated by this product. The number is 13 1126 from anywhere in Australia (0800 764 766 in New Zealand) and is available at all times. Have this SDS with you when you call.

Inhalation: If inhalation occurs, contact a Poisons Information Centre. Urgent hospital treatment is likely to be needed. Remove source of contamination or move victim to fresh air. If breathing is difficult, oxygen may be beneficial if administered by trained personnel, preferably on a doctor's advice. DO NOT allow victim to move about unnecessarily. Symptoms of pulmonary oedema can be delayed up to 48 hours after exposure.

Skin Contact: Wash gently and thoroughly with warm water (use non-abrasive soap if necessary) for 10-20 minutes or until product is removed. Under running water, remove contaminated clothing, shoes and leather goods (e.g. watchbands and belts) and completely decontaminate them before reuse or discard. If irritation persists, repeat flushing and seek medical attention.

Eye Contact: Immediately flush the contaminated eye(s) with lukewarm, gently flowing water for 20 minutes or until the product is removed, while holding the eyelid(s) open. Take care not to rinse contaminated water into the unaffected eye or onto the face. Obtain medical attention immediately. Take special care if exposed person is wearing contact lenses.

Ingestion: If swallowed, do NOT induce vomiting. Wash mouth with water and contact a Poisons Information Centre or call a doctor.

First Aid Facilities: Eyewash and normal washroom facilities. Safety deluge showers should, if practical, be provided near to where this product is being used.

Major Health Hazards: Harmful if inhaled, may cause harm to unborn children, harmful if swallowed, irritating to eyes and skin, respiratory system, possible skin sensitiser, if aspirated, may cause lung damage. Persons sensitised to Bromoxynil should avoid contact with this product.

Section 5 - Fire Fighting Measures

Fire and Explosion Hazards: The major hazard in fires is usually inhalation of heated and toxic or oxygen deficient (or both), fire gases. There is little risk of an explosion from this product if commercial quantities are involved in a fire. Violent steam generation or eruption may occur upon application of direct water stream on hot liquids. Vapours from this product are heavier than air and may accumulate in sumps, pits and other low-lying spaces, forming potentially explosive mixtures. They may also flash back considerable distances.

Fire decomposition products from this product are likely to be toxic and corrosive if inhaled. Take appropriate protective measures

Flammability Class: Flammable Category 4 (GHS), C1 combustible (AS 1940)

Suitable Extinguishing Media: In case of fire, use carbon dioxide, dry chemical, foam, water fog. Alcohol resistant foam is the preferred firefighting medium but, if it is not available, normal foam can be used. Try to contain spills, minimise spillage entering drains or water courses.

Special Protective Equipment and Precautions for Fire Fighters: When fighting a major fire wear self-contained breathing apparatus and protective equipment.

Hazchem Code:

- 3Z (bulk transport only)

Section 6 - Accidental Release Measures

Environmental precautions: In the event of a major spill, prevent spillage from entering drains or water courses with absorbent material. Because of the environmentally hazardous nature of this product, special care should be taken to restrict release to waterways or drains.

Methods and materials for containment and cleaning up: Stop leak if safe to do so and contain spill. Absorb onto sand, vermiculite or other suitable absorbent material. If spill is too large or if absorbent material is not available, try to create a dike to stop material spreading or going into drains or waterways. Sweep up and shovel or collect recoverable product into labelled containers for recycling or salvage and dispose of promptly. Recycle containers wherever possible after careful cleaning. Refer to product label for specific instructions. After spills, wash area preventing runoff from entering drains. Full details regarding disposal of used containers, spillage and unused material may be found on the label. If there is any conflict between this SDS and the label, instructions on the label prevail. Ensure legality of disposal by consulting regulations prior to disposal.

Personal precautions, protective equipment and emergency procedures: Wear full protective chemically resistant clothing including eye/face protection, gauntlets and self-contained breathing apparatus. Suitable materials for protective clothing include PVC, Nitrile. Use impermeable gloves with care. Eye/face protective equipment should comprise, as a minimum, protective goggles. If there is a significant chance that vapours or mists are likely to build up in the cleanup area, we recommend that you use a respirator. It should be fitted with a type A cartridge, suitable for organic vapours.

Refer to section 8 of this SDS for details of personal protective measures, and make sure that those measures are followed. Thoroughly launder protective clothing before storage or re-use. Advise laundry of nature of contamination when sending contaminated clothing to laundry.

If a significant quantity of material enters drains, advise emergency services.

Section 7 - Handling and Storage

Precautions for Safe Handling: Keep exposure to this product to a minimum, and minimise the quantities kept in work areas. Check Section 8 of this SDS for details of personal protective measures, and make sure that those measures are followed. The measures detailed below under "Storage" should be followed during handling in order to minimise risks to persons using the product in the workplace. Also, avoid contact or contamination of product with incompatible materials listed in Section 10.

Conditions for Safe Storage: This product is a Scheduled Poison. Observe all relevant regulations regarding sale, transport and storage of this schedule of poison. Store in the closed original container in a dry, cool, well-ventilated area out of direct sunlight. Some liquid preparations settle or separate on standing and may require stirring before use. Check packaging - there may be further storage instructions on the label.

Section 8 - Exposure Controls and Personal Protection

Exposure Standards:

SWA Exposure Limits

TWA

STEL

N-Methyl-2-pyrrolidone

103 mg/m³ (25ppm)

309 mg/m³ (75ppm)

Annotations: Sk - Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.

Exposure limits have not been established by SWA for other hazardous ingredients present in this product.

Engineering Controls: Ensure adequate ventilation of the working area.

Respiratory Protection: This product should only be used in a well-ventilated area. If ventilation is inadequate, use an approved vapour respirator under conditions where exposure to the substance is apparent (e.g. generation of high concentrations of mist or vapour and development of respiratory tract irritation), consult AS/NZS 1715 and AS/NZS 1716 for further information.

Eye and Face Protection: Eye protection such as protective glasses or goggles must be worn when this product is being used. See Australian/New Zealand Standard Industrial Eye Protection: AS1336 and AS/NZS 1337 for more information. Failure to protect your eyes may cause them harm. Emergency eye wash facilities are also recommended in an area close to where this product is being used.

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Skin Protection: Skin contact must be prevented by wearing impervious gloves, clothes and, preferably, apron. Make sure that all skin areas are covered. Use PVC or rubber 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 Occupational Protective Clothing: AS/NZS 4501 and Occupational Protective Footwear: AS/NZS2210 for more information.

Section 9 - Physical and Chemical Properties:

Physical Description & colour:	Clear, light yellow to dark brown liquid.
Odour:	Aromatic odour.
Boiling Point:	Not available.
Flash point:	66°C
Upper Flammability Limit:	7%
Lower Flammability Limit:	0.6%
Freezing/Melting Point:	No specific data. Liquid at normal temperatures.
Volatiles:	No data.
Vapour Pressure:	No data.
Vapour Density:	No data.
Specific Gravity:	1.09 at 20°C
Water Solubility:	Emulsifiable.
pH:	4.2 (10% in water at 23°C)
Volatility:	No data.
Odour Threshold:	No data.
Evaporation Rate:	No data.
Coeff Oil/water Distribution:	No data
Autoignition temp:	>200°C

Section 10 - Stability and Reactivity

Possibility of Hazardous Reactions: This product is unlikely to react or decompose under normal storage conditions. However, if you have any doubts, contact the supplier for advice on shelf-life properties.

Conditions to Avoid: Protect this product from light. Store in the closed original container in a dry, cool, well-ventilated area out of direct sunlight. This product will not undergo polymerisation reactions.

Incompatibilities: strong acids, strong bases, strong oxidising agents.

Hazardous Decomposition Products: Combustion forms carbon dioxide, and if incomplete, carbon monoxide and possibly smoke. Water is also formed. May form nitrogen and its compounds, and under some circumstances, oxides of nitrogen. Occasionally hydrogen cyanide gas in reducing atmospheres. May form hydrogen fluoride gas and other compounds of fluorine. Bromine compounds. Carbon monoxide poisoning produces headache, weakness, nausea, dizziness, confusion, dimness of vision, disturbance of judgment, and unconsciousness followed by coma and death.

Section 11 - Toxicological Information

Acute toxicity: Based on available data, the product is toxic via oral and inhalation routes. Product is harmful if swallowed and may be fatal if swallowed and enters airways.

Symptoms may include headache, irritation of nose and throat and increased secretion of mucous in the nose and throat. Other symptoms may also become evident, but they should disappear after exposure has ceased.

Following is the acute toxicity estimate (ATE) calculated for the formulation:

Acute oral toxicity - LD50 (Rat): 1113 mg/kg

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Acute dermal toxicity - LD50 (Rabbit) > 2,000 mg/kg

Acute inhalation toxicity - LC50 (Rat): 0.72-0.81 mg/L; > 5.12mg/L/ 4 hour

Following is the acute toxicity data available for the active Bromoxynil indicating moderate acute oral toxicity:

Acute oral toxicity - LD50 (Rat): 190 mg/kg; LD50 (Rabbit): 260 mg/kg in rabbits; LD50 (Guinea Pigs): 63 mg/kg

Acute dermal toxicity - LD50 (Rabbit) > 2,000 mg/kg

The compound is a slight eye irritant, but it is not a skin irritant in rabbits. However, when in contact with abraded skin, Bromoxynil may produce a mild irritation.

Skin Corrosion/Irritation: Based on available data, the product is a skin irritant. Symptoms may include itchiness and reddening of contacted skin.

Serious Eye Damage/Irritation: Based on available data, the product is a serious eye irritant. Symptoms may include stinging and reddening of eyes and watering which may become copious. Other symptoms may also become evident. If exposure is brief, symptoms should disappear once exposure has ceased. However, lengthy exposure or delayed treatment may cause permanent damage.

Respiratory or Skin Sensitisation: Based on available data, the product is classified as skin sensitiser. May cause an allergic skin reaction.

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

Bromoxynil is a suspected teratogen. The compound produced birth defects in rats at oral doses above 35 mg/kg. Toxic effects included abnormal rib formation and reduced foetal weight. Newborn rabbits had birth defects when Bromoxynil was administered to pregnant mothers at doses above 30 mg/kg. In the rabbit, birth defects included changes in bone formation in the skull and hydrocephaly.

Carcinogenicity: Based on classification principles, the classification criteria are not met. No significant ingredient is classified as carcinogenic by IARC.

Rats fed Bromoxynil at low levels of 5 mg/kg and below did not develop any cancer related effects.

Reproductive Toxicity: Based on available data, the product is classified as a reproductive toxicant. May damage fertility or the unborn child.

Specific Target Organ Toxicity (STOT)—single exposure: Based on classification principles, the classification criteria are not met.

Specific Target Organ Toxicity (STOT)—repeated exposure: Based on classification principles, the classification criteria are not met.

Aspiration Hazard: Based on available data, the product is classified as - Aspiration hazard Category 1.

Because of the low viscosity of this product, it may directly enter the lungs if swallowed, or if subsequently vomited. Once in the lungs, it is very difficult to remove and can cause severe injury or death. However, this product is an oral irritant. Symptoms may include burning sensation and reddening of skin in mouth and throat. Other symptoms may also become evident, but all should disappear once exposure has ceased.

Chronic Health Effects: In one documented case of chronic exposure (about 1 year) of humans to Bromoxynil, workers showed symptoms of weight loss, fever, vomiting, headache, and urinary problems. Studies have shown that Bromoxynil has no effect on rats given dietary doses of 15 and 50 mg/kg/day for 90 days. Doses up to 5 mg/kg/day for 2 years had no impact on blood chemistry or urine.

Additional toxicological information: The ADI for Bromoxynil is set at 0.003mg/kg/day. The corresponding NOEL is set at 0.3mg/kg/day.

Diflufenican:

NOAEL: rat = 500 ppm or 25 mg/kg/day (2 years); mice = 500 ppm or 60-73 mg/kg/day (2 years)

NOEL: dog = 100 mg/kg/day

Mutagenicity: Not mutagenic

Reproduction toxicity: NOEL (rat) = 200 ppm (3 generation)

Teratogenicity: NOEL (rat) > 1,000 mg/kg/day; NOEL (rabbit) > 1,000 mg/kg/day

Fate in humans and animals: No Bromoxynil was present in the milk or faeces of cows 9 days after exposure to low doses of the herbicide. Less than 20% of the compound was excreted in urine as the parent compound.

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Section 12 - Ecological Information

Ecotoxicity: Very toxic to aquatic life with long lasting effects.

Avoid contaminating waterways.

Toxicity data on Diflufenican is available:

Low toxicity to Birds- Acute Oral toxicity: LD50 (Bobwhite quail) > 2,150 mg/kg; LD50 (Mallard duck) > 4,000 mg/kg

Acute Toxicity Fish - LC50 (rainbow trout): 56-100 mg/L, 96 hrs; LC50 (carp) = 105 mg/L, 96 hours; LC50 (daphnia) > 10 mg/L, 48 hrs

Toxicity (other organisms): Not toxic to Bees.

Persistence and Degradability:

Diflufenican

Half-life time (t_{1/2}) in soil: 105-210 days.

Bromoxynil

Half-life in soils: 34.1 days at pH 5, 11.7 days at pH 7, 1.7 days at pH 9.

Breakdown in soil and groundwater: Bromoxynil has a low persistence in soil. In sandy soil, the half-life is about 10 days but is pH dependent. Degradation in clay was slower, with half of the Bromoxynil degraded to its metabolites in about a 2-week period at 25°C. The persistence of the compound is also slightly longer in peat field soils than in the sandy soils. The evidence suggests that, while Bromoxynil is broken down by some soil bacteria, it may inhibit the action of other bacteria that promote the formation of nitrite by a process called nitrification.

Breakdown in water: No data are currently available.

Breakdown in vegetation: The herbicide works by disrupting the plants ability to produce energy for cell-related activities. It is not readily translocated throughout the plant once it has been absorbed.

Bioaccumulative Potential: No information available.

Mobility in Soil: Diflufenican has Low mobility.

Section 13 - Disposal Considerations

Disposal: Special help is available for the disposal of Agricultural Chemicals. The product label will give general advice regarding disposal of small quantities, and how to cleanse containers. However, for help with the collection of unwanted rural chemicals, contact ChemClear 1800 008 182 <http://www.chemclear.com.au/> and for help with the disposal of empty drums, contact DrumMuster <http://www.drummuster.com.au/> where you will find contact details for your area.

Section 14 - Transport Information

Road and Rail Transport

Australian Special Provisions; AU01: Environmentally Hazardous Substances meeting the description of UN 3077 or UN 3082 are not subject to this Code when transported by road or rail in;

(a) packaging's that do not incorporate a receptacle exceeding 500 Kg (L); or

(b) IBCs.

Marine Transport:

Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea; DANGEROUS GOODS.

UN Number: 3082

Proper Shipping Name or ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S (CONTAINS

Technical Name: BROMOXYNIL OCTANOATE AND DIFLUFENICAN)

Transport Hazard Class: 9

Packaging Group III

IMDG EMS Fire: F - A

IMDG EMS Spill: S - F

Environmental hazards: Yes. Marine Pollutant: Bromoxynil

Additional Information: The marine pollutant mark is not required when transported in sizes of ≤ 5 L or ≤ 5 kg.

Air Transport:

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IATA provision SP A197: Environmentally Hazardous Substances meeting the description of UN 3077 or UN 3082 are not subject to this Code when transported air in; packages that have inner packages (plastic bottles, glass bottles, plastic bags) of 5 L for UN3082 and 5 kg for UN3077 or less.

Class 9 Miscellaneous Dangerous Goods shall not be loaded in the same vehicle or packed in the same freight container with Dangerous Goods of Class 1 (Explosives).

Section 15 - Regulatory Information

APVMA Approval no.: 69269

Poison schedule (SUSMP): Schedule 7

AICIS: All the constituents of this material are either listed on the Australian Inventory of Industrial Chemicals (AIIC), not required due the nature of the chemical as they are excluded as an industrial chemical or have been assessed under the Industrial Chemicals Act 1989 as amended.

Section 16 - Other Information

This SDS contains only safety-related information. For other data see product literature.

Issue Date: April 2025

Reason(s) for issue: Poison schedule updated as per the latest classification

Key abbreviations or acronyms:

ADG Code - Australian Code for the Transport of Dangerous Goods by Road and Rail (7th edition)

AICIS – Australian Industrial Chemicals Introduction Scheme (formerly NICNAS)

AIIC - Australian Inventory of Industrial Chemicals

APVMA – Agricultural Pesticides and Veterinary Medicines Australia

CAS number - Chemical Abstracts Service Registry Number

GHS - Globally Harmonised System of Classification and Labelling of Chemicals (7th revised edition) 2017

Hazchem Code - Emergency action code of numbers and letters that provide information to emergency services especially firefighters.

IARC - International Agency for Research on Cancer

Preparation of Safety Data Sheets for Hazardous Chemicals Code of Practice (June 2023)

STEL - Short term exposure limit means the average airborne concentration of a substance calculated over a 15-minute period. The STEL should not be exceeded at any time during a normal eight hour working day.

SUSMP - Standard for the Uniform Scheduling of Medicines & Poisons

SWA - Safe Work Australia, formerly ASCC and NOHSC

TGA – Therapeutic Goods Australia

TWA - Time-weighted average means the average airborne concentration of a particular substance when calculated over an eight-hour working day, for a five-day working week.

UN Number - United Nations Number

WHS – Workplace Health and Safety

THIS SDS SUMMARISES OUR BEST KNOWLEDGE OF THE HEALTH AND SAFETY HAZARD STATEMENT: INFORMATION OF THE PRODUCT AND HOW TO SAFELY HANDLE AND USE THE PRODUCT IN THE WORKPLACE. EACH USER MUST REVIEW THIS SDS IN THE CONTEXT OF HOW THE PRODUCT WILL BE HANDLED AND USED IN THE WORKPLACE.

IF CLARIFICATION OR FURTHER INFORMATION IS NEEDED TO ENSURE THAT AN APPROPRIATE RISK ASSESSMENT CAN BE MADE, THE USER SHOULD CONTACT THIS COMPANY SO WE CAN ATTEMPT TO OBTAIN ADDITIONAL INFORMATION FROM OUR SUPPLIERS. 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.

Please read all labels carefully before using product.

This SDS is prepared in accord with the SWA document "Preparation of Safety Data Sheets for Hazardous Chemicals - Code of Practice" ((June 2023) and GHS Revision 7

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SAFETY DATA SHEET