

Safety Data Sheet

according to WHS Regulations

Printing date 18.01.2022

Revision: 18.01.2022

1 Identification

Product Name: TITAN DIFLUFENICAN 25 + BROMOXYNIL 250 SELECTIVE HERBICIDE

Other Means of Identification: Mixture

APVMA Approval Number: 69416

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

Details of Manufacturer or Importer:

Titan Ag Pty Ltd
Princes Street Marina
Suite 15/16 Princes Street
Newport NSW 2106

Phone Number: 02 9999 6655

Emergency telephone number: 02 9999 6655

2 Hazard(s) Identification

Hazardous Nature:

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

Classified as Dangerous Goods according to the Australian Code for the Transport of Dangerous Goods by Road and Rail (7th edition), IATA and IMDG/IMSBC.

Not subject to the ADG Code when transported in Australia by Road or Rail in packagings that do not incorporate a receptacle exceeding 500 kg(L); or IBCs (refer to SP AU01). However if transported by Air or Sea, this provision does not apply.



Skull and crossbones

Acute Toxicity (Inhalation) 3 H331 Toxic if inhaled.



Health hazard

Toxic To Reproduction 1B H360 May damage fertility or the unborn child.

Aspiration Hazard 1 H304 May be fatal if swallowed and enters airways.



Environment

Aquatic Acute 1 H400 Very toxic to aquatic life.

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



Acute Toxicity (Oral) 4 H302 Harmful if swallowed.

Skin Corrosion/Irritation 2 H315 Causes skin irritation.

Eye Irrit. 2A H319 Causes serious eye irritation.

Skin Sensitisation 1 H317 May cause an allergic skin reaction.

STOT SE 3 H335 May cause respiratory irritation.

Flammable Liquids 4 H227 Combustible liquid.

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Signal Word Danger**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.
 H304 May be fatal if swallowed and enters airways.
 H410 Very toxic to aquatic life with long lasting effects.

Precautionary Statements

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 dust/fume/gas/mist/vapours/spray.
 P264 Wash 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/eye protection/face protection/hearing protection.
 P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
 P321 Specific treatment (see on this label).
 P331 Do NOT induce vomiting.
 P302+P352 IF ON SKIN: Wash with plenty of water.
 P304+P340 IF INHALED: Remove person to fresh air and keep 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/attention.
 P330 Rinse mouth.
 P362+P364 Take off contaminated clothing and wash it before reuse.
 P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
 P337+P313 If eye irritation persists: Get medical advice/attention.
 P370+P378 In case of fire: Use CO₂, powder or water spray to extinguish.
 P391 Collect spillage.
 P403+P233 Store in a well-ventilated place. Keep container tightly closed.
 P405 Store locked up.
 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:**

CAS: 64742-94-5	Solvent naphtha (petroleum), heavy arom. ⚠️ Aspiration Hazard 1, H304	30-40%
CAS: 1689-99-2	Bromoxynil (as the octanoate) ⚠️ Acute Toxicity (Inhalation) 3, H331; ⚠️ Toxic To Reproduction 2, H361; ⚠️ Aquatic Acute 1, H400; Aquatic Chronic 1, H410; ⚠️ Acute Toxicity (Oral) 4, H302; Skin Sensitisation 1, H317	30-35%

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CAS: 872-50-4	N-methyl-2-pyrrolidone	10-20%
	☠ Toxic To Reproduction 1B, H360; ☠ Skin Corrosion/Irritation 2, H315; Eye Irrit. 2A, H319; STOT SE 3, H335	
CAS: 83164-33-4	Diflufenican	2-3%
	Aquatic Chronic 3, H412	

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 develop.

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, rinse with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing for at least 15 minutes. Seek medical attention if symptoms persist.

Ingestion:

If swallowed, do not induce vomiting. Immediately rinse mouth with water. Never give anything by mouth to an unconscious person. If vomiting occurs spontaneously, keep head below hips to prevent aspiration. Seek immediate medical attention.

Symptoms Caused by Exposure:

Inhalation: Toxic if inhaled. May cause respiratory irritation, hyperventilation, tachycardia and muscle twitching.

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

Eye Contact: Causes serious eye irritation.

Ingestion: Harmful if swallowed. May cause gastrointestinal irritation, nausea, diarrhoea, vomiting and convulsions.

5 Fire Fighting Measures

Suitable Extinguishing Media:

Water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Do not use high volume water jet.

Specific Hazards Arising from the Chemical:

Hazardous combustion products include hydrogen bromide, hydrogen cyanide, hydrogen fluoride and oxides of nitrogen and carbon.

Product is combustible. Vapours may form explosive mixture with air.

Containers close to fire should be removed only if safe to do so. Use water spray to cool fire exposed containers.

Prevent run-off from fire fighting entering drains or water courses.

HAZCHEM Code: •3Z

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 self-contained breathing apparatus and full protective clothing. 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.

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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. Ensure adequate ventilation.

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 only in the original container in a cool, dry and well ventilated area. Keep container tightly closed when not in use. Protect from direct sunlight, 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:**CAS: 872-50-4 N-methyl-2-pyrrolidone**

WES	STEL: 309 mg/m ³ , 75 ppm TWA: 103 mg/m ³ , 25 ppm Sk
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Engineering Controls:

Maintain air concentration below occupational exposure standards, providing adequate ventilation. Use explosion-proof ventilating equipment.

Respiratory Protection:

Use an approved organic vapour respirator (type A1 or A2) 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 or nitrile 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, including cotton overall buttoned to the neck and wrist and washable hat (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:

Safety glasses with top and side shields or goggles. See Australian/New Zealand Standards AS/NZS 1336 and 1337 for more information.

9 Physical and Chemical Properties

Appearance:

Form:	Liquid
Colour:	Clear, light yellow to dark brown
Odour:	Aromatic

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Odour Threshold:	Not determined.
pH-Value at 23 °C:	4.2 (10% solution)
Melting point/freezing point:	Not applicable
Initial Boiling Point/Boiling Range:	No information available
Flash Point:	66 °C
Flammability:	Combustible liquid
Auto-ignition Temperature:	>200 °C (solvent)
Decomposition Temperature:	No information available
Explosion Limits:	
Lower:	0.6 Vol %
Upper:	7 Vol %
Vapour Pressure:	No information available
Density:	Not determined.
Relative Density:	1.09
Vapour Density:	No information available
Evaporation Rate:	No information available
Solubility in Water:	Emulsifiable
Partition Coefficient (n-octanol/water):	No information available

10 Stability and Reactivity

Possibility of Hazardous Reactions: No dangerous reactions known under conditions of normal use.

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

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

Incompatible Materials: Strong oxidizing agents, strong acids and bases.

Hazardous Decomposition Products:

Hydrogen bromide, hydrogen cyanide, hydrogen fluoride and oxides of nitrogen and carbon.

11 Toxicological Information

Toxicity:

LD50/LC50 Values:		
CAS: 64742-94-5 Solvent naphtha (petroleum), heavy arom.		
Oral	LD50	5,000 mg/kg (rat)
	LD50	2,000 mg/kg (rabbit)
CAS: 1689-99-2 Bromoxynil (as the octanoate)		
Oral	LD50	63 mg/kg (guinea pig)
		190 mg/kg (rat)
		260 mg/kg (rabbit)
	LD50	250 mg/kg (rat)
		>2,000 mg/kg (rabbit)
Dermal	LD50	>2,000 mg/kg (rat)
Inhalation	LC50/4 h	0.72 mg/l (rat)
CAS: 872-50-4 N-methyl-2-pyrrolidone		
Oral	LD50	3,914 mg/kg (rat)
	LD50	8,000 mg/kg (rabbit)
CAS: 83164-33-4 Diflufenican		
Oral	LD50	>1,000 mg/kg (mice)

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		>2,000 mg/kg (rat)
		>5,000 mg/kg (rabbit)
	LD50	>2,000 mg/kg (rat)
Inhalation	LC50/4 h	>2.34 mg/l (rat)

Acute Health Effects**Inhalation:**

Toxic if inhaled. May cause respiratory irritation, hyperventilation, tachycardia and muscle twitching.

Skin: Causes skin irritation. May cause an allergic skin reaction.**Eye:** Causes serious eye irritation.**Ingestion:**

Harmful if swallowed. May cause gastrointestinal irritation, nausea, diarrhoea, vomiting and convulsions.

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.**Carcinogenicity:** This product does NOT contain any IARC listed chemicals.**Reproductive Toxicity:** May damage fertility or the unborn child.**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: May be fatal if swallowed and enters airways.**Chronic Health Effects:**

Repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Overexposure may result in light headedness, staggering gait, giddiness, and possible nausea. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal.

Existing Conditions Aggravated by Exposure: No data 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 NOAEL 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 NOAEL of 23.3 mg/kg/day.

(Ref: Australian Pesticides and Veterinary Medicines Authority, 'Acceptable Daily Intakes for Agricultural and Veterinary Chemicals', 2021).

12 Ecological Information

Ecotoxicity:**CAS: 1689-99-2 Bromoxynil (as the octanoate)**

Oral	LD50	2,350 mg/kg (mallard duck)
		170 mg/kg (quail)

Aquatic toxicity:

Very toxic to aquatic life with long lasting effects.

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CAS: 64742-94-5 Solvent naphtha (petroleum), heavy arom.	
EC50/48 h	12 mg/l (daphnia)
EC50/72 h	2.5 mg/l (skeletonema costatum)
LC50/96 h	45 mg/l (fathead minnow)
CAS: 1689-99-2 Bromoxynil (as the octanoate)	
LC50	0.46 mg/l (goldfish)
	0.05 mg/l (rainbow trout)
CAS: 872-50-4 N-methyl-2-pyrrolidone	
EC50/24 h	>1,000 mg/l (daphnia)
EC50/72 h	>500 mg/l (green algae)
LC50/96 h	1,072 mg/l (fathead minnow)
	>5,000 mg/l (rainbow trout)
CAS: 83164-33-4 Diflufenican	
LC50/96 h	105 mg/l (carp)
	56-100 mg/l (rainbow trout)
LC50/48 h	>10 mg/l (daphnia)

Persistence and Degradability: Not readily biodegradable (bromoxynil and diflufenican)**Bioaccumulative Potential:**

Bioconcentration factor (BCF): 230 (bromoxynil)
 Bioconcentration factor (BCF): 1.60 (diflufenican)

Mobility in Soil:

DT50 - 1 d (bromoxynil)
 DT50 - 85.6 - 282 d (diflufenican)

Other adverse effects: No further relevant 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, IMDG, IATA	UN3082
Proper Shipping Name	
ADG, IMDG, IATA	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Bromoxynil, Diflufenican)
Dangerous Goods Class	
ADG Class:	9
Packing Group:	
ADG, IMDG, IATA	III
Marine pollutant:	
EMS Number:	F-A,S-F
Hazchem Code:	•3Z

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Special Provisions:	274, 331, 335, 375, AU01
Transport/Additional information:	Not subject to the ADG Code when transported by road or rail in packagings that do not incorporate a receptacle exceeding 500 kg(L) or IBCs. (refer to SP AU01)
Limited Quantities:	5L
Packagings & IBCs - Packing Instruction:	P001, IBC03, LP01
Packagings & IBCs - Special Packing Provisions:	PP1
Portable Tanks & Bulk Containers - Instructions:	T4
Portable Tanks & Bulk Containers - Special Provisions:	TP1, TP29

15 Regulatory Information

Australian Inventory of Industrial Chemicals:

All components are on the inventory, or in compliance with the inventory.

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

Poisons Schedule: 6

Australian Pesticides and Veterinary Medicines Authority:

This product is registered with the Australian Pesticides and Veterinary Medicines Authority. APVMA number 69416.

16 Other Information

Date of Preparation or Last Revision: 18.01.2022

Prepared by: MSDS.COM.AU Pty Ltd

www.msds.com.au

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)
 Flammable Liquids 4: Flammable liquids – Category 4
 Acute Toxicity (Oral) 4: Acute toxicity – Category 4
 Acute Toxicity (Inhalation) 3: Acute toxicity – Category 3
 Skin Corrosion/Irritation 2: Skin corrosion/irritation – Category 2
 Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A
 Skin Sensitisation 1: Skin sensitisation, Hazard Category 1
 Toxic To Reproduction 1B: Reproductive toxicity – Category 1B
 Toxic To Reproduction 2: Reproductive toxicity – Category 2
 STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
 Aspiration Hazard 1: Aspiration hazard – Category 1
 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 - July 2020”

The information contained in this safety data sheet is provided in good faith and is believed to be accurate at the date of issuance. Titan Ag Pty Ltd makes no representation of the accuracy or comprehensiveness of the

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