Safety Data Sheet
according to WHS Regulations

Printing date 03.12.2021 Revision: 03.12.2021

1 Identification

Product Name: TITAN DIFLUFENICAN + MCPA SELECTIVE HERBICIDE

Other Means of Identification: Mixture
APVMA Approval Number: 65650

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(L) or less; or IBCs (refer to SP AU01). However if transported by Air or Sea, this provision does not apply.


Health hazard

Toxic To Reproduction 1A	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 Toxicity (Oral) 4	H302 Harmful if swallowed.
Acute Toxicity (Inhalation) 4	H332 Harmful if inhaled.
Skin Corrosion/Irritation 2	H315 Causes skin irritation.
Eye Irrit. 2A	H319 Causes serious eye irritation.
STOT SE 3	H335 May cause respiratory irritation.

Flammable Liquids 4	H227 Combustible liquid.

Signal Word Danger

Hazard Statements
H227 Combustible liquid.
H302 Harmful if swallowed.
H332 Harmful if inhaled.
H315 Causes skin irritation.

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H319 Causes serious eye irritation.
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

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.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
P301+P312	IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
P330	Rinse mouth.
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.
P321	Specific treatment (see on this label).
P362+P364	Take off contaminated clothing and wash it before reuse.
P332+P313	If skin irritation 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: 29450-45-1	MCPA (as iso octyl ester) Aquatic Acute 1, H400; Aquatic Chronic 1, H410; Acute Toxicity (Oral) 4, H302; Acute Toxicity (Dermal) 4, H312; Acute Toxicity (Inhalation) 4, H332	30-40%
CAS: 90438-79-2	Acetic acid, C6-8-branched alkyl esters Aquatic Chronic 2, H411	30-35%
CAS: 872-50-4	N-methyl-2-pyrrolidone Toxic To Reproduction 1B, H360; Skin Corrosion/Irritation 2, H315; Eye Irrit. 2A, H319; STOT SE 3, H335	15-20%
CAS: 83164-33-4	Diflufenican Aquatic Chronic 3, H412	2.5-3%

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.

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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 cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Seek medical attention.

Ingestion:
If swallowed, do not induce vomiting. If vomiting occurs spontaneously, keep head below hips to prevent aspiration. Do not give anything by mouth to an unconscious person. Seek immediate medical attention.

Information for Doctor:
Establish a patent airway with suction where necessary.
Watch for signs of respiratory insufficiency and assist ventilation as necessary.
Administer oxygen by non-rebreather mask at 10 to 15 L/min.
Monitor and treat, where necessary, for pulmonary oedema .
Acute toxic reactions to chlorophenoxy compounds are rare. The by-product of production, dioxin, may be implicated in subacute features such as hepatic enlargement, chloracne, neuromuscular symptoms and deranged porphyrin metabolism.
Monitor metabolic acidosis, hyperthermia, hyperkalaemia, myoglobinuria and hepatic/renal dysfunction. for 2,4-dichlorophenoxyacetic acid (2,4-D) and its derivatives
Gastric lavage if there are no signs of impending convulsions.

Symptoms Caused by Exposure:
Inhalation: Harmful if inhaled. May cause respiratory irritation, coughing, pain, choking and breathing difficulties.
Skin contact: Causes skin irritation.
Eye contat: Causes serious eye irritation.
Ingestion: Harmful if swallowed. May cause gastrointestinal discomfort, nausea, vomiting and diarrhoea.

5 Fire Fighting Measures

Suitable Extinguishing Media: Water fog, alcohol foam, dry chemical powder and carbon dioxide.

Specific Hazards Arising from the Chemical:
Hazardous combustion products include oxides of carbon and nitrogen, hydrogen chloride, phosgene, and other pyrolysis products.
Product is combustible.
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 Safe Work Australia approved respiratory protection 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.

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.

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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.
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 and acids.

8 Exposure Controls and Personal Protection

Exposure Standards:	
CAS: 872-50-4 N-methyl-2-pyrrolidone	
WES	STEL: 309 mg/m³, 75 ppm TWA: 103 mg/m³, 25 ppm Sk

Engineering Controls:
Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapour below occupational exposure standards.

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, cotton overall buttoned to the neck and wrist, safety boots and a washable hat. See Australian Standards AS/NZS 2161, 2210.1 and 2210.2 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:	Dark brown
Odour:	Strong ester odour
Odour Threshold:	No information available
pH-Value:	Not determined.
Melting point/freezing point:	No information available
Initial Boiling Point/Boiling Range:	176-200 °C (hydrocarbon solvent)
Flash Point:	>66 °C
Flammability:	Product is combustible.
Auto-ignition Temperature:	321 °C (hydrocarbon solvent)
Decomposition Temperature:	No information available
Explosion Limits:	
Lower:	0.8 Vol % (hydrocarbon solvent)
Upper:	6.7 Vol % (hydrocarbon solvent)
Vapour Pressure:	No information available
Relative Density at 20 °C:	0.995

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Vapour Density: No information available
Evaporation Rate: No information available
Solubility in Water: Emulsifies with water.

10 Stability and Reactivity

Possibility of Hazardous Reactions: Hazardous polymerisation will not occur.

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

Conditions to Avoid: Heat, sparks, open flames, hot surfaces and direct sunlight.

Incompatible Materials:
Esters react with acids to liberate heat along with alcohols and acids.
Strong oxidising acids may cause a vigorous reaction with esters that is sufficiently exothermic to ignite the reaction products.
Flammable hydrogen is generated by mixing esters with alkali metals and hydrides.

Hazardous Decomposition Products: Oxides of carbon and nitrogen, hydrogen chloride and phosgene.

11 Toxicological Information

Toxicity:

LD50/LC50 Values:		
CAS: 29450-45-1 MCPA (as iso octyl ester)		
Oral	LD50	550-800 mg/kg (mouse)
		700-1,160 mg/kg (rat)
	LD50	>1,000 mg/kg (rat)
		>4,000 mg/kg (rabbit)
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)
		>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:
Harmful if inhaled. May cause respiratory irritation, coughing, pain, choking and breathing difficulties.
Skin: Causes skin irritation.
Eye: Causes serious eye irritation.
Ingestion: Harmful if swallowed. May cause gastrointestinal discomfort, nausea, vomiting and diarrhoea.

Skin Corrosion / Irritation: Causes skin irritation.

Serious Eye Damage / Irritation: Causes serious eye irritation.

Respiratory or Skin Sensitisation: Based on classification principles, the classification criteria are not met.

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.

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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:
Prolonged or repeated skin contact may cause skin sensitisation.
Chronic overexposure may cause liver and kidney damage and weight loss.

Existing Conditions Aggravated by Exposure: No information available

Additional toxicological information:
The Australian Acceptable Daily Intake (ADI) for MCPA for a human is 0.1 mg/kg/day, set for the public for daily, lifetime exposure. This is based on the NOAEL of 1.1 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 16.3 mg/kg/day.
(Ref: Australian Pesticides and Veterinary Medicines Authority, 'Acceptable Daily Intakes for Agricultural and Veterinary Chemicals', 2021).

12 Ecological Information

Ecotoxicity: Diflufenican is slightly toxic to birds and non toxic to bees.

Aquatic toxicity:
Very toxic to aquatic life with long lasting effects.

CAS: 29450-45-1 MCPA (as iso octyl ester)	
EC50/48 h	0.29 mg/l (daphnia)
EC50/72 h	0.11 mg/l (skeletonema costatum)
LC50/96 h	117-232 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:
MCPA has low persistence. Half-life is 14 days to 1 month.
Half-life for diflufenican is 105-210 days.

Bioaccumulative Potential: No data available on finished product.

Mobility in Soil: Diflufenican has low mobility.

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.

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14 Transport Information

UN Number
ADG, IMDG, IATA UN3082

Proper Shipping Name
ADG, IMDG, IATA ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Diflufenican, MCPA (as iso octyl ester))

Dangerous Goods Class
ADG Class: 9
Subsidiary Risk:

Packing Group:
ADG, IMDG, IATA III

Marine pollutant:

EMS Number: F-A,S-F

Hazchem Code: •3Z

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 ingredients are listed.

Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Poison Schedule:
Poisons Schedule: 5
Australian Pesticides and Veterinary Medicines Authority:
This product is registered with the Australian Pesticides and Veterinary Medicines Authority. APVMA number 65650.

16 Other Information

Date of Preparation or Last Revision: 03.12.2021

Prepared by:

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

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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
Skin Corrosion/Irritation 2: Skin corrosion/irritation – Category 2
Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A
Toxic To Reproduction 1A: Reproductive toxicity – Category 1A
Toxic To Reproduction 1B: Reproductive toxicity – Category 1B
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 2: Hazardous to the aquatic environment, long-term (Chronic). Category 2
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”

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