



MATERIAL SAFETY DATA SHEET

TITAN CLETHODIM 240 HERBICIDE

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name Titan Clethodim 240 Herbicide
Product Code -
Other Names -
Product Use Agricultural Herbicide
Company Name Titan Ag Pty Ltd
Address 3/14 Narabang Way
Belrose NSW 2085
Telephone Number 02 9986 2943
Emergency Telephone 02 9986 2943

2. HAZARDS IDENTIFICATION

HAZARDOUS SUBSTANCE. NON DANGEROUS GOODS.

Classified as hazardous according to the criteria of ASCC.

Hazards Xn - Harmful
Risk Phrases R65 - Harmful: May cause lung damage if swallowed.
Safety Phrases S2 - Keep out of reach of children.
S23 - Do not breathe fumes/vapour/spray
S25 - Avoid contact with eyes.
S62 - If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient (common name)	CAS Number	Proportion
clethodim	99129-21-2	24%
liquid hydrocarbon	64742-94-5	63%
emulsifier	-	to 100%

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 symptoms persist.

Ingestion If swallowed, do not induce vomiting. Wash mouth with water. Give water to drink.
Never give anything by mouth to an unconscious person.
If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into lungs. Can cause chemical pneumonitis and pulmonary oedema. Symptoms of pulmonary oedema can be delayed up to 48 hours after exposure. Seek immediate medical attention.

Skin Remove contaminated clothing and wash affected areas with soap and water. Seek medical attention if symptoms persist. Launder

Eyes	clothing before reuse. In case of eye contact, check for and remove any contact lenses. Immediately irrigate eyes with plenty of running water for at least 15 minutes, keeping eyelids open. Seek immediate medical attention.
Medical Advice	Apply basic aid and decontamination procedures. Treat symptomatically. The main hazard is aspiration of the solvent into the lungs causing chemical pneumonitis.

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media	For major fires call the Fire Brigade. Ensure that an escape path is available from any fire. Large fires - Water spray or foam. Smaller fires – dry chemical powder and carbon dioxide.
Hazardous Combustion Products	Carbon dioxide, water vapour, oxides of nitrogen and toxic compounds of chlorine. Incomplete combustion can produce carbon monoxide.
Firefighting Equipment	Wear ASCC approved self-contained breathing apparatus and full protective clothing.
Unusual Fire or Explosion Hazards	Combustible product – C1. There is a moderate risk of an explosion if commercial quantities of this product are involved in a fire. Violent steam generation or eruption may occur if direct water stream is applied 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.
Hazchem Code	Not allocated

6. ACCIDENTAL RELEASE MEASURES

Spills	In the event of a major spill, prevent spillage from entering drains or water courses. Wear full protective clothing. Contain spill and absorb with earth, clay, sand, or other absorbent material and collect into labelled containers for disposal. If necessary, wash the spill area with an alkali detergent and water. Launder protective clothing before re-use.
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7. HANDLING AND STORAGE

Handling	Avoid contact with eyes and skin. Do not inhale spray mist. Use of safe work practices is recommended. Observe good personal hygiene.
Storage	Store in the closed, original container in a dry, well ventilated area, as cool as possible. Do not store for prolonged periods in direct sunlight. Keep container tightly sealed and do not store with seed, fertilisers or foodstuffs. Do not use or store near flame, sparks or hot surfaces. Do not weld, heat or drill container. Emptied containers still contains hazardous or explosive vapour or liquid.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Standards (ASCC)	Hydrocarbon (total): TWA: 17ppm / 100 mg/m ³ STEL: - ppm / - mg/m ³
Engineering Controls	Local exhaust ventilation is recommended when vapours and mists can be released in excess of established airborne exposure limits.
Respiratory Protection	Use an ASCC approved full face supplied air respirator if high airborne concentrations of the material are present. See Australian Standards AS/NZS 1715 and 1716 for more information.
Eye Protection	Protective glasses or goggles and face shield.
Skin Protection	Elbow-length gloves and protective clothing.
Hygienic Practices	Food, beverages and tobacco products should not be stored or consumed where this material is in use. Provide eyewash fountains and safety showers in close proximity to points of potential exposure.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Amber liquid
Odour	Mild aromatic odour
Solubility in Water	Emulsifiable
Boiling Point	No information available
Freezing Point	No information available
Vapour Pressure	No information available
Specific Gravity	0.95g/mL at 20°C
pH	3.6 as 5% emulsion
Odour Threshold	No information available
Evaporation Rate	No information available
Autoignition Temperature	No information available
Flash Point	62-65.6°C (Setaflash Closed Cup)
Upper Flammability Limit	No information available
Lower Flammability Limit	No information available

10. STABILITY AND REACTIVITY

Chemical Stability	Stable under normal storage conditions. Unstable at extreme pHs, temperature and upon exposure to UV light.
Incompatible Materials	Strong oxidising agents such as chlorates, nitrates and peroxides.
Hazardous Decomposition Products	Carbon dioxide, water vapour, oxides of nitrogen and toxic compounds of chlorine. Incomplete combustion can produce carbon monoxide.
Hazardous Polymerization Conditions to Avoid	Will not occur. Avoid direct sunlight, sources of heat, naked flames and sparks.

11. TOXICOLOGICAL INFORMATION

Toxicity	<p>Clethodim: Oral LD₅₀ (rat - male) = 1630mg/kg Oral LD₅₀ (rat - female) = 1360mg/kg Dermal LD₅₀ (rabbit) > 5000mg/kg Inhalation LC₅₀ (rat) > 3.9mg/L – 4 hour</p>
Routes of Exposure	Inhalation, ingestion, eye and skin
Health effects from likely routes of exposure	<p>Inhalation: Breathing vapour can cause headaches, dizziness and nausea. Breathing in high concentrations can cause central nervous system depression, loss of coordination, impaired judgement and unconsciousness.</p> <p>Ingestion: Harmful if swallowed. Can cause nausea, vomiting, abdominal pain, diarrhea, blurred vision, profuse sweating and muscle twitching. Aspiration into the lung from vomiting may cause chemical pneumonitis or pulmonary oedema.</p> <p>Eye: This product is a moderate eye irritant and could cause prolonged impairment of vision. Symptoms may include pain, tears, swelling, redness and blurred vision.</p> <p>Skin: May cause mild skin irritation.</p>
Effects of Overexposure	No information available.
Existing Conditions	No information available.
Aggravated by Exposure	
Carcinogenicity	No (ASCC, NTP, IARC)

12. ECOLOGICAL INFORMATION

Ecotoxicity	<p>Clethodim: Aquatic organisms: LC₅₀ (rainbow trout) = 67mg/L – 96 hour LC₅₀ (bluegill sunfish) = 120 mg/L – 96 hour LC₅₀ (<i>Daphnia magna</i>) = 120 mg/L – 48 hour EC₅₀ (fresh water algae) = 57.8 mg/L – 5 days Bees: LD₅₀ > 100µg/bee It is not toxic to bees. Birds: LD₅₀ (mallard duck) > 6000 mg/kg LD₅₀ (bobwhite quail) >2000 mg/kg</p>
Mobility	<p>Clethodim may be highly persistent in the aquatic environment. Reported half-lives for clethodim in the aquatic environment are 128 days in the aqueous phase and 214 days in the sediment (294).</p>



MATERIAL SAFETY DATA SHEET

13. DISPOSAL CONSIDERATIONS

Disposal methods and containers	Instructions concerning the disposal of this product and its containers are given on the product label. 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

Not classified as a dangerous good according to the Australian Code for the Transport of Dangerous goods by road or rail.

UN Number	Not applicable
Proper Shipping Name	Not applicable
Dangerous Goods Class	Not applicable
Hazchem Code	Not applicable
Packing Group	Not applicable
Special Precautions	Not applicable

15. REGULATORY INFORMATION

Clethodim and liquid hydrocarbon are listed in the Australian Inventory of Chemical Substances (AICS).

SUSDP Classification: 5

16. OTHER INFORMATION

Last Revision of MSDS	Rev 1.0 (04/03/2008)
Prepared by	MSDS.COM.AU Pty Ltd www.msds.com.au
Abbreviations Used	IARC: International Agency for Research on Cancer ASCC: Australian Safety and Compensation Council NTP: National Toxicology Program (U.S.) OSHA: Occupational Safety and Health Administration (U.S.) STEL: Short term exposure limit TWA: Time weighted average

Emergency Contacts

Titan Ag Pty Ltd	02 9986 2943
Titan Ag Pty Ltd – Emergency Number	02 9986 2943
Police and Fire Brigade	000
Poisons Information Centre	13 11 26



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Please read instructions / label before using product.