



MATERIAL SAFETY DATA SHEET

TITAN QUIZALOFOP P-ETHYL 99.5 HERBICIDE

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name	Titan Quizalofop P-Ethyl 99.5 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 Safe Work Australia.

Hazards	Xn - Harmful N - Dangerous to the Environment
Risk Phrases	R22 - Harmful if swallowed. R36/38 - Irritating to eyes and skin. R51/53 - Toxic to aquatic organisms. May cause long-term adverse effects to the aquatic environment. R65 - Harmful: May cause lung damage if swallowed.
Safety Phrases	S2 - Keep out of reach of children. S23 - Do not breathe gas/fumes/vapour/spray (appropriate wording to be specified by the manufacturer). S24 - Avoid contact with skin. S41 - In case of fire and/or explosion do not breathe fumes. 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	Percentage
Quizalofop p-ethyl	100646-51-3	10.3%
Solvent naphta (petroleum) heavy aromatic	64742-94-5	60-90%
N-methyl-2-pyrrolidone	872-50-4	1-10%

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
-------------------	--

Ingestion	attention if symptoms persist. If swallowed, do not use vomiting. Wash mouth with water and give some water to drink. Where vomiting occurs naturally have victim place head below hip level in order to reduce risk of aspiration. Never give anything by mouth to an unconscious person. Seek immediate medical attention.
Skin	If skin or hair contact occurs, immediately remove contaminated clothing and wash skin and hair thoroughly with soap and plenty of water. Seek medical attention if symptoms persist.
Eyes	If in eyes, hold eyelids apart and flush the eye continuously with large amounts of water for at least 15 minutes. Seek medical attention if symptoms persist.
Note to Doctor	This product contains a hydrocarbon solvent. Care should be taken to prevent pulmonary aspiration. Small amounts of liquid aspirated into the respiratory system during ingestion or from vomiting may cause bronchopneumonia or pulmonary oedema.

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media	For major fires call the Fire Brigade. Ensure that an escape path is available from any fire. Water spray, foam, carbon dioxide and dry agent. Do not use high volume water jet.
Hazardous Combustion Products	Fire decomposition products from this product may be toxic if inhaled.
Firefighting Equipment	Wear Safe Work Australia approved self-contained breathing apparatus and full protective clothing.
Unusual Fire or Explosion Hazards	This product is classified as a C1 combustible product. 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. If possible and without risk, remove intact containers from exposure to fire. Otherwise, spray unopened containers with water to keep cool.
Hazchem Code	Not applicable.

6. ACCIDENTAL RELEASE MEASURES

Spills	In the event of a major spill, prevent spillage from entering drains or water courses. Extinguish or remove possible sources of ignition. Wear full protective clothing including eye/face protection and impervious elbow-length gloves. 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. Collect into labelled containers for recycling or salvage and dispose of promptly.
---------------	--

After spills wash area preventing runoff from entering drains.

7. HANDLING AND STORAGE

Handling	Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Provide adequate ventilation.
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, animal food or foodstuffs. Keep away from all ignition sources.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Standards (Safe Work Australia)	N-methyl-2-pyrrolidone: TWA: 25 ppm / 103 mg/m ³ STEL: 75 ppm / 309 mg/m ³
Engineering Controls	This product should only be used in a well ventilated area. If natural ventilation is inadequate, use of a fan is suggested.
Respiratory Protection	Respiratory protection not necessary. Avoid working in and breathing spray mist. If in doubt use a Safe Work Australia 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. See Australian Standards AS 1336 and AS/NZS 1337 for more information.
Skin Protection	Impervious elbow-length gloves, cotton overalls and washable hat. See Australian Standards AS 2161 and 2919 and AS/NZS 2210 for more information.
Hygienic Practices	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.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Dark amber liquid
Odour	Hydrocarbon odour
Solubility in Water	No information available.
Boiling Point	No information available.
Freezing Point	No information available.
Vapour Pressure	No information available.
Vapour Density (Air = 1)	1.02 g/c m ³
Specific Gravity (H₂O=1)	No information available.
Flash Point (closed cup)	98.9°C

Flammable Limit – Lower	No information available.
Flammable Limit – Upper	No information available.
Auto-ignition Temperature	No information available.

10. STABILITY AND REACTIVITY

Chemical Stability	Stable under normal conditions of use.
Incompatible Materials	No information available.
Hazardous Decomposition Products	Toxic fumes.
Hazardous Polymerization Conditions to Avoid	Will not occur. Sources of ignition and extreme heat.

11. TOXICOLOGICAL INFORMATION

Toxicity	<p>Quizalofop p-ethyl: Oral LD₅₀ (rat) = 1210-1670 mg/kg Oral LD₅₀ (mouse) = 1753-2350 mg/kg Dermal LD₅₀ (rat) > 2000 mg/kg Dermal LD₅₀ (rabbit) > 2000 mg/kg Reproductive Effects: No evidence of reproductive effects. Teratogenic Effects: No evidence of teratogenic effects. Mutagenic Effects: No evidence of mutagenic effects. Carcinogenic Effects: No evidence of carcinogenic effects.</p> <p>N-methyl-2-pyrrolidone: Oral LD₅₀ (rat) = 3914 mg/kg Oral LD₅₀ (mouse) = 7725 mg/kg Dermal LD₅₀ (rabbit) = 8000 mg/kg Intraperitoneal LD₅₀ (rat) = 2472 mg/kg Skin, eye and respiratory irritant. May cause harm to the unborn child.</p>
Routes of Exposure	Inhalation, ingestion, eye and skin
Acute Health Effects	<p>Inhalation: Harmful by inhalation. In addition may irritate mucous membranes of nose and mouth.</p> <p>Ingestion: Harmful if swallowed. This product contains a hydrocarbon solvent. Care should be taken to prevent pulmonary aspiration. Small amounts of liquid aspirated into the respiratory system during ingestion or from vomiting may cause bronchopneumonia or pulmonary oedema. This product is an oral irritant. Symptoms may include burning sensation and reddening of skin in mouth and throat.</p> <p>Eye: This product is a severe eye irritant. Symptoms may include stinging and reddening of eyes and watering which may become copious. Other symptoms such as swelling of eyelids and blurred vision may also become evident. Lengthy exposure or delayed treatment is</p>



MATERIAL SAFETY DATA SHEET

	likely to cause permanent damage.
Chronic Health Effects	Will irritate the skin. Symptoms may include itchiness and reddening of contacted skin
Existing Conditions Aggravated by Exposure	Repeated exposure to the solvent in this product may cause skin dryness or cracking.
Carcinogenicity	No information available.
	No (Safe Work Australia, NTP, IARC).

12. ECOLOGICAL INFORMATION

Ecotoxicity	Quizalofop p-ethyl: Quizalofop p-ethyl is highly toxic to fish. Aquatic organisms: LC ₅₀ 96hr (Rainbow trout) = 10.7 mg/L LC ₅₀ 96hr (Bluegill sunfish) = 0.46-2.8 mg/L Birds: Oral LD ₅₀ (Mallard duck) > 2000 mg/kg Quizalofop p-ethyl is practically non-toxic to bees.
Mobility	Quizalofop-p-ethyl is moderately persistent in soils, with a reported half-life of 60 days. It may be more rapidly broken down in soil with high microbial activity. It is moderately to strongly adsorbed to soils, and studies indicate very low soil mobility. It should not leach significantly into water. N-methyl-2-pyrrolidone is readily biodegradable.

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



MATERIAL SAFETY DATA SHEET

Sea Transport:
UN Number 3082
Proper Shipping Name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,
N.O.S. (contains quizalofop p-ethyl)
Dangerous Goods Class 9
Hazchem Code 3Z
Packing Group III
Special Precautions Not applicable

15. REGULATORY INFORMATION

Quizalofop p-ethyl, solvent naphta (petroleum) heavy aromatic and N-methyl-2-pyrrolidone are listed in the Australian Inventory of Chemical Substances (AICS).

SUSDP Classification: S6

16. OTHER INFORMATION

Last Revision of MSDS Rev 1.0 (31/08/2010)
Prepared by MSDS.COM.AU Pty Ltd www.msds.com.au
Abbreviations Used IARC: International Agency for Research on Cancer
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

The information contained in this material 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 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.

Please read instructions / label before using product.