



## MATERIAL SAFETY DATA SHEET

### TITAN TRIALLATE 500 EC HERBICIDE

#### 1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

<b>Product Name</b>	Titan Triallate 500 EC Herbicide
<b>Product Code</b>	-
<b>Other Names</b>	-
<b>Product Use</b>	Agricultural Herbicide
<b>Company Name</b>	Titan Ag Pty Ltd
<b>Address</b>	3/14 Narabang Way Belrose NSW 2085
<b>Telephone Number</b>	02 9986 2943
<b>Emergency Telephone</b>	02 9986 2943

#### 2. HAZARDS IDENTIFICATION

##### HAZARDOUS SUBSTANCE. NON DANGEROUS GOODS.

Classified as hazardous according to the criteria of Safe Work Australia.

<b>Hazards</b>	Xn - Harmful N - Dangerous for the Environment
<b>Risk Phrases</b>	R22 - Harmful if swallowed. R43 - May cause sensitisation by skin contact. R48/22 - Harmful: danger of serious damage to health by prolonged exposure if swallowed. R50/53 - Very toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment. R65 - Harmful: May cause lung damage if swallowed.
<b>Safety Phrases</b>	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. S37 - Wear suitable gloves. S60 - This material and its container must be disposed of as hazardous waste. S61 - Avoid release to the environment. Refer to special instructions/Material Safety Data Sheets. S62 - If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

#### 3. COMPOSITION / INFORMATION ON INGREDIENTS

<b>Ingredient (common name)</b>	<b>CAS Number</b>	<b>Proportion</b>
Triallate	2303-17-5	500g/L
Liquid hydrocarbon	64742-94-5	471g/L
Ingredients deemed not to be hazardous	Proprietary	Balance

#### **4. FIRST AID MEASURES**

<b>Inhalation</b>	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Seek medical attention if symptoms persist.
<b>Ingestion</b>	If swallowed, do not induce vomiting. Immediately rinse mouth with water. 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.
<b>Skin</b>	If skin or hair contact occurs, immediately remove contaminated clothing and wash skin and hair thoroughly. Seek medical attention if symptoms persist.
<b>Eyes</b>	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.

#### **5. FIRE FIGHTING MEASURES**

<b>Suitable Extinguishing Media</b>	For major fires call the Fire Brigade. Ensure that an escape path is available from any fire. Carbon dioxide, dry chemical, foam and water fog.
<b>Hazardous Combustion Products</b>	Carbon monoxide, carbon dioxide and other hazardous compounds.
<b>Firefighting Equipment</b>	Wear Safe Work Australia approved self-contained breathing apparatus and full protective clothing.
<b>Unusual Fire or Explosion Hazards</b>	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.
<b>Hazchem Code</b>	Not allocated.

#### **6. ACCIDENTAL RELEASE MEASURES**

<b>Spills</b>	In the event of a major spill, prevent spillage from entering drains or water courses. Wear full protective clothing including eye/face protection. 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.
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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

<b>Handling</b>	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.
<b>Storage</b>	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.

### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

<b>Exposure Standards (Safe Work Australia)</b>	No exposure standards set.
<b>Engineering Controls</b>	This product should only be used in a well ventilated area. If natural ventilation is inadequate, use of a fan is suggested.
<b>Respiratory Protection</b>	Respiratory protection not necessary. Avoid working in and breathing spray mist.
<b>Eye Protection</b>	Protective glasses or goggles and face shield.
<b>Skin Protection</b>	Impervious elbow-length gloves, cotton overalls and washable hat.
<b>Hygienic Practices</b>	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

<b>Appearance</b>	Amber to brown liquid
<b>Odour</b>	Characteristic hydrocarbon solvent odour
<b>Solubility in Water</b>	Emulsifiable
<b>Boiling Point</b>	160°C @ 100kPa
<b>Melting Point</b>	No information available.
<b>Vapour Pressure</b>	Negligible at normal ambient temperatures.
<b>Vapour Density (Air = 1)</b>	No information available.
<b>Specific Gravity (H<sub>2</sub>O=1)</b>	0.6g/mL (bulk density)
<b>Flash Point (closed cup)</b>	> 62°C
<b>Flammable Limit – Lower</b>	No information available.
<b>Flammable Limit – Upper</b>	No information available.
<b>Coefficient Oil/Water Distribution</b>	Triallate 4.6 (log P octanol / water)

### 10. STABILITY AND REACTIVITY

<b>Chemical Stability</b>	Stable under normal conditions of use.
<b>Incompatible Materials</b>	Strong acids, strong bases and strong oxidizing agents.

<b>Hazardous Decomposition Products</b>	Carbon monoxide, carbon dioxide and other hazardous compounds
<b>Hazardous Polymerization Conditions to Avoid</b>	Will not occur. No information available.

**11. TOXICOLOGICAL INFORMATION**

<b>Toxicity</b>	<p><b>Technical triallate:</b>          Oral LD<sub>50</sub> ( rat) = 800 - 2165 mg/kg          Oral LD<sub>50</sub> ( mice) = 930 mg/kg          Dermal LD<sub>50</sub> (rabbit) = 8200 mg/kg          Dermal LD<sub>50</sub> (rat) = 3500 mg/kg          Inhalation LC<sub>50</sub> (cat) = 0.4 mg/L - 4 hour</p> <p><b>Reproductive Effects:</b> Triallate can cause reproductive defects at high doses.</p> <p><b>Teratogenic Effects:</b> No evidence of teratogenic effects.</p> <p><b>Mutagenic Effects:</b> No evidence of mutagenic effects.</p> <p><b>Carcinogenic Effects:</b> No evidence of carcinogenic effects.</p> <p><b>Organ Toxicity:</b> The largest amount of the herbicide accumulates in the liver, lungs, kidneys, and spleen. All traces are gone by the 7th day. Triallate was reported to be completely eliminated from the body of rabbits within 7 to 10 days.</p>
<b>Routes of Exposure</b>	Inhalation, ingestion, eye and skin
<b>Acute Health Effects</b>	<p>Inhalation: May cause irritation to upper respiratory tract.</p> <p>Ingestion: Harmful in case of ingestion but symptoms are not available. This product is an oral irritant. Symptoms may include burning sensation and reddening of skin in mouth and throat.</p> <p>Eye: Can cause eye irritation. Symptoms may include stinging, reddening and watering of eyes. Lengthy exposure or delayed treatment may cause permanent damage.</p> <p>Skin: Can cause skin irritation and symptoms may include itchiness and reddening.</p>
<b>Chronic Health Effects</b>	Prolonged contact with skin may cause sensitization. It manifests as skin rash or inflammation and in some individuals this reaction can be severe.
<b>Existing Conditions Aggravated by Exposure</b>	No information available.
<b>Carcinogenicity</b>	No (Safe Work Australia, NTP, IARC)

## 12. ECOLOGICAL INFORMATION

### Ecotoxicity

#### Birds:

Triallate is slightly toxic to birds.  
 Oral LD<sub>50</sub> ( Bob-white quail) = 2251 mg/kg

#### Aquatic Organisms:

Triallate is highly toxic to fish and other aquatic organisms.  
 LC<sub>50</sub> 96hr (Rainbow trout) = 0.62 mg/L  
 LC<sub>50</sub> 96hr (Channel catfish) = 1.7 mg/L  
 EC<sub>50</sub> 48hr (Daphnia magna) = 0.06 – 0.10 mg/L  
 Triallate is non-toxic to bees.

### Mobility

Triallate is moderately persistent in soil, with an estimated average half-life of 82 days. Adsorption studies indicate that glyphosate has very low mobility. If there is significant moisture and/or a low level of organic matter in the soil, leaching and groundwater contamination may be possible. Studies indicate that triallate does not bio-accumulate in plants. Triallate is absorbed and metabolized by plants.

## 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.

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

### Sea Transport:

<b>UN Number</b>	3082
<b>Proper Shipping Name</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Contains Triallate)
<b>Dangerous Goods Class</b>	9
<b>Hazchem Code</b>	2X
<b>Packing Group</b>	III
<b>Special Precautions</b>	Not applicable



## MATERIAL SAFETY DATA SHEET

### 15. REGULATORY INFORMATION

Triallate is listed in the Australian Inventory of Chemical Substances (AICS).

**SUSDP Classification: S5**

### 16. OTHER INFORMATION

**Last Revision of MSDS** Rev 1.0 (31/08/2010)  
**Prepared by** MSDS.COM.AU Pty Ltd [www.msds.com.au](http://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

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

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Please read instructions / label before using product.