TITAN DIFLUFENICAN 500 HERBICIDE

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name: Titan Diflufenican 500 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

NON HAZARDOUS SUBSTANCE. NON DANGEROUS GOODS.
Not classified as hazardous according to the criteria of Safe Work Australia.

Hazards: -
Risk Phrases: -
Safety Phrases: -

3. COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Ingredient (common name)</th>
<th>CAS Number</th>
<th>Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diflufenican</td>
<td>83164-33-4</td>
<td>500 g/L</td>
</tr>
<tr>
<td>Ingredients deemed not to be hazardous</td>
<td>Proprietary</td>
<td>Balance</td>
</tr>
</tbody>
</table>

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 use vomiting. Wash mouth with water and give some water to drink. Never give anything by mouth to an unconscious person. Seek medical attention if symptoms persist.

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.
5. FIRE FIGHTING MEASURES

**Suitable Extinguishing Media**
Carbon dioxide, dry chemical, foam and water fog.

**Hazardous Combustion Products**
Oxides of carbon and nitrogen and hydrogen fluoride.

**Firefighting Equipment**
Wear Safe Work Australia approved self-contained breathing apparatus and full protective clothing.

**Unusual Fire or Explosion Hazards**
The product is likely to decompose only after heating to dryness, followed by strong heating.

**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 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.

8. EXPOSURE CONTROLS/Personal Protection

**Exposure Standards (Safe Work Australia)**
No exposure standards set.

**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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Viscous off-white/dark brown liquid suspension</td>
</tr>
<tr>
<td>Odour</td>
<td>Mild odour</td>
</tr>
<tr>
<td>Solubility in Water</td>
<td>Miscible</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>~100°C</td>
</tr>
<tr>
<td>Freezing Point</td>
<td>No information available</td>
</tr>
<tr>
<td>Vapour Pressure</td>
<td>4.25 x 10⁻³ kPa @ 25°C</td>
</tr>
<tr>
<td>Vapour Density (Air = 1)</td>
<td>No information available</td>
</tr>
<tr>
<td>Specific Gravity (H₂O=1)</td>
<td>1.17g/mL @ 20°C</td>
</tr>
<tr>
<td>pH</td>
<td>No information available</td>
</tr>
<tr>
<td>Flash Point (closed cup)</td>
<td>&gt;100°C</td>
</tr>
<tr>
<td>Flammable Limit – Lower</td>
<td>No information available</td>
</tr>
<tr>
<td>Flammable Limit – Upper</td>
<td>No information available</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

<table>
<thead>
<tr>
<th>Property</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical Stability</td>
<td>Stable under normal conditions of use.</td>
</tr>
<tr>
<td>Incompatible Materials</td>
<td>Strong acids, strong bases and strong oxidizing agents.</td>
</tr>
<tr>
<td>Hazardous Decomposition Products</td>
<td>Oxides of carbon and nitrogen and hydrogen fluoride.</td>
</tr>
<tr>
<td>Hazardous Polymerization</td>
<td>Will not occur.</td>
</tr>
<tr>
<td>Conditions to Avoid</td>
<td>Extreme heat.</td>
</tr>
</tbody>
</table>

11. TOXICOLOGICAL INFORMATION

<table>
<thead>
<tr>
<th>Toxicity</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reproductive Effects</td>
<td>No evidence of reproductive effects.</td>
</tr>
<tr>
<td>Teratogenic Effects</td>
<td>No evidence of teratogenic effects.</td>
</tr>
<tr>
<td>Mutagenic Effects</td>
<td>No evidence of mutagenic effects.</td>
</tr>
<tr>
<td>Carcinogenic Effects</td>
<td>No evidence of carcinogenic effects.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Routes of Exposure</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inhalation, ingestion, eye and skin</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Acute Health Effects</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inhalation:</td>
<td>No respiratory effects nose and mouth.</td>
</tr>
<tr>
<td>Ingestion:</td>
<td>Harmful if swallowed.</td>
</tr>
<tr>
<td>Eye:</td>
<td>Will irritate eyes.</td>
</tr>
<tr>
<td>Skin:</td>
<td>Will irritate the skin. Harmful in contact with skin as this product can be absorbed through the skin.</td>
</tr>
</tbody>
</table>
12. ECOLOGICAL INFORMATION

Ecotoxicity

Diflufenican (technical):
Diflufenican is harmful to aquatic organisms.

Aquatic organisms:
\[ \text{LC}_{90} \text{ 96hr (Rainbow trout)} = 109 \text{ mg/L} \]
\[ \text{LC}_{90} \text{ 96hr (Carp)} = 105 \text{ mg/L} \]
\[ \text{EC}_{50} \text{ 96hr (Algae)} > 10 \text{ mg/L} \]

**Birds:** Oral LD50 (Bobwhite quail) > 2150 mg/kg

**Birds:** Oral LD50 (Mallard duck) > 4000 mg/kg

Mobility

Diflufenican is not readily biodegradable. DT50 varies from 85.6 – 282 days depending on soil type and water content. Does not bio-accumulate.

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

Sea Transport:

UN Number 3082

Proper Shipping Name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains diflufenican)

Dangerous Goods Class 9

Hazchem Code 3Z
Packing Group III
Special Precautions Not applicable

15. REGULATORY INFORMATION

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

16. OTHER INFORMATION

Last Revision of MSDS Rev 1.0 (31/08/2010)
Prepared by MSDS.COM.AU Pty Ltd
Abbreviations Used www.msds.com.au
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.

31/08/2010