



MATERIAL SAFETY DATA SHEET

TITAN GLYPHOSATE 360

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name	Titan Glyphosate 360
Product Code	-
Other Names	-
Product Use	A non-selective foliar herbicide for control of a wide range of annual and perennial grasses and broadleaved weeds.
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	Xi - Irritant N - Dangerous for the Environment
Risk Phrases	R41 - Risk of serious eye damage. R51 - Toxic to aquatic organisms. R53 - May cause long-term adverse effects in the aquatic environment.
Safety Phrases	S2 - Keep out of reach of children. S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S39 - Wear eye/face protection. S61 - Avoid release to the environment. Refer to special instructions/Material Safety Data Sheets.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient (common name)	CAS Number	Proportion
Glyphosate (present as the isopropylamine salt)	1071-83-6	360g/L
Other ingredients deemed not to be hazardous	-	Low
Water	7732-18-5	Balance

4. FIRST AID MEASURES

Inhalation	If inhaled remove victim to fresh air. Remove contaminated clothing and loosen remaining clothing. Allow patient to assume most comfortable position and keep warm. Seek medical attention if symptoms persist.
Ingestion	Immediately rinse mouth with water. If swallowed, do not induce

	vomiting. Immediately give plenty of water. 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. 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

	For major fires call the Fire Brigade. Ensure that an escape path is available from any fire.
Suitable Extinguishing Media	Foam, water fog, carbon dioxide or dry chemical.
Hazardous Combustion Products	Oxides of nitrogen or phosphorus.
Firefighting Equipment	Wear ASCC approved self-contained breathing apparatus and full protective clothing.
Unusual Fire or Explosion Hazards	Not a fire or explosion hazard. This product or spray solutions of this product react with galvanised steel or unlined steel (except stainless steel) containers and tanks, to produce hydrogen gas which may form a highly flammable or explosive gas mixture.
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. Stop leak if safe to do so, and contain spill. Absorb onto clay, sand, vermiculite or other suitable absorbent material. Sweep up and shovel or collect recoverable product into labelled open top containers for recycling and dispose of promptly. Final clean-up with degreasing agent or detergent is advised. Launder protective clothing before storage or re-use.
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7. HANDLING AND STORAGE

Handling	Exercise normal care in handling. Avoid unnecessary skin and eye contact.
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 (ASCC)	No exposure standards set.
Engineering Controls	No special ventilation requirements are normally necessary for this product. However make sure that the work environment remains clean and that vapours and mists are minimised.
Respiratory Protection	Respiratory protection not necessary. Avoid working in and breathing spray mist.
Eye Protection	Protective glasses or goggles and face shield.
Skin Protection	Impervious elbow-length gloves, cotton overalls and washable hat.
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	Yellow viscous liquid
Odour	Mild amine odour
Solubility in water	Soluble
Boiling Point	~ 100°C
Freezing Point	Not applicable
Vapour Pressure	Not applicable
Vapour Density (Air = 1)	Not applicable
Specific Gravity	1.162
Flash Point (closed cup)	None
Flammable Limit – Lower	Not applicable
Flammable Limit – Upper	Not applicable

10. STABILITY AND REACTIVITY

Chemical Stability	Stable under normal storage conditions.
Incompatible Materials	Corrosive to mild steel, galvanised steel and zinc. Non corrosive to stainless steel, polyethylene and plastics. Do not mix, store or apply the product or spray solutions of the product in galvanised steel or unlined steel (except stainless steel) containers or spray tanks. Avoid contact of the concentrate with strong alkalis and alkaline materials. Such contact may release isopropylamine vapour with a strong fish like odour, which is an irritant to eyes.
Hazardous Decomposition Products	No information available.
Hazardous Polymerization Conditions to Avoid	Will not occur. No information available.



MATERIAL SAFETY DATA SHEET

11. TOXICOLOGICAL INFORMATION

Toxicity	Glyphosate (1071-83-6) Acute oral LD ₅₀ (rat) > 5600 mg/kg Acute dermal LD ₅₀ (rabbit) >5000mg/kg Acute inhalation LC ₅₀ (rat) = 5-12 mg/L/4 hour (technical acid and salts) Reproductive Effects: No reproductive toxicity. Teratogenic Effects: No evidence of teratogenic effects. Mutagenic Effects: No evidence of mutagenic effects. Carcinogenic Effects: No evidence of carcinogenic effects.
Routes of Exposure	Inhalation, ingestion, eye and skin
Health effects from likely routes of exposure	Inhalation: May cause irritation to upper respiratory tract. Ingestion: May be harmful in case of ingestion. Possible symptoms of exposure include: nausea, vomiting and gastrointestinal discomfort and diarrhoea. Ingestion of a large quantity of the undiluted product may result in hypotension and pulmonary oedema. Eye: Can cause irritation. Skin: Can cause irritation.
Effects of Overexposure	Prolonged contact with eyes may cause eye damage.
Existing Conditions Aggravated by Exposure	No information available.
Carcinogenicity	No (ASCC, NTP, IARC)

12. ECOLOGICAL INFORMATION

Ecotoxicity	Birds: Glyphosate is slightly toxic to birds. Oral LD ₅₀ (Bob-white quail) =4500 mg/kg Oral LD ₅₀ (Mallard duck) =4500 mg/kg Aquatic Organisms: Technical glyphosate acid is slightly toxic to aquatic invertebrates. LC ₅₀ 96hr (Rainbow trout) = 86 mg/L LC ₅₀ 96hr (Bluegill sunfish) = 120 mg/L LC ₅₀ 48hr (Daphnia) = 780 mg/L Glyphosate is non-toxic to honeybees.
Mobility	Glyphosate is moderately persistent in soil, with an estimated average half-life of 47 days. Adsorption studies indicate that glyphosate has very low mobility.

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



MATERIAL SAFETY DATA SHEET

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

Glyphosate (present as the isopropylamine salt) is listed in the Australian Inventory of Chemical Substances (AICS).

SUSDP Classification: S5

16. OTHER INFORMATION

Last Revision of MSDS	Rev 1.0 (13/08/2008)
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.