

MATERIAL SAFETY DATA SHEET



Emergency Phone: 1800-033-882 (24 hrs)
Dow AgroSciences Australia Ltd.
Frenchs Forest NSW 2086

GRASLAN* HERBICIDE and GRASLAN* AERIAL HERBICIDE

Effective Date: 28 May 2007
Product Code: 20371

1. PRODUCT AND COMPANY IDENTIFICATION:

PRODUCT: Graslan* Herbicide and Graslan Aerial Herbicide

PURPOSE: For the control of regrowth trees and woody weeds. The composition of both products is identical

COMPANY IDENTIFICATION:

Dow AgroSciences Australia Ltd.
ABN 24 003 771 659
Level 5, 20 Rodborough Road,
Frenchs Forest NSW 2086

Customer Service Toll Free Number:

1800 700 096

(Mon-Fri, 8am–5pm EST)

Emergency Telephone Number:

1800 033 882

(24 hours) (EMERGENCIES ONLY)

Transport Emergency Only Dial 000

2. HAZARDOUS IDENTIFICATIONS:

EMERGENCY OVERVIEW

Classified as hazardous according to the criteria of NOHSC

Not Classified as Dangerous Goods for Land Transport (see Section 14)

Potential Health Effects: May cause irritation to eyes and skin. May cause allergic disorders.

RISK PHRASES:

R36/38: Irritating to eyes and skin

R43 May cause sensitization by skin contact

R50/53: Very toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment

SAFETY PHRASES:

S2: Keep out of the reach of children

S24/25: Avoid contact with skin and eyes

S28 After contact with skin, wash immediately with plenty of soap and water

S61: Avoid released to the environment. Refer to sections 6,7,13

3. COMPOSITION/INFORMATION ON INGREDIENTS:

Ingredient	CAS #	Content
Tebuthiuron	34014-18-1	~20%
Quartz (crystalline silica)	14808-60-7	15 – 40%
Balance not contributing to hazard		40 – 65%

4. FIRST AID:

Consult the Poisons Information Centre (131126) or a doctor in every case of suspected chemical poisoning. Never give fluids or induce vomiting if a patient is unconscious or convulsing regardless of cause of injury. If breathing difficulties occur seek medical attention immediately.

EYE: Immediately flush eyes with water; remove contact lenses, if present, after the first 5 minutes, then continue flushing eyes for at least 15 minutes. Obtain medical attention without delay, preferably from an ophthalmologist.

SKIN: Wash skin with plenty of water.

INGESTION: If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.

INHALATION: Move person to fresh air; if effects occur, consult a physician.

NOTE TO PHYSICIAN: No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. FIRE FIGHTING MEASURES:

FLASH POINT: Not applicable – Non-flammable solid

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EXTINGUISHING MEDIA: Use water fog, foam, or CO₂ if product is involved in fire.

FIRE AND EXPLOSION HAZARDS: Will emit toxic vapors as it burns.

FIRE-FIGHTING EQUIPMENT: Wear positive-pressure, self-contained breathing apparatus and full protective clothing if product is involved in fire.

HAZCHEM: 2X

6. ACCIDENTAL RELEASE MEASURES:

ACTION TO TAKE FOR SPILLS/LEAKS: Do not touch or walk through spilled material. Wear gloves, overall and boots. Stop further spill occurring and prevent entry into waterways and drains. **Small spills:** In case of spill on floor or paved surfaces sweep up and place in drums for disposal at a licensed local authority landfill. Spill residues may be cleaned using water and detergent. Contain and absorb wash water. Seek advice from the SDS, product label or Dow AgroSciences regarding disposal. **Large spills:** Report large spills to Dow AgroSciences Emergency Services at 1800-033-882.

7. HANDLING AND STORAGE:

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

HANDLING: Keep out of reach of children. Harmful if swallowed. May cause eye irritation. Avoid contact with eyes, skin and clothing. Users should wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.

STORAGE: Store in tightly closed original container in a cool, dry well-ventilated area out of direct sunlight when not in use. Do not store with food, feedstuffs, fertilizers and seeds. See product label for further handling/storage precautions relative to the end use of this product. Reduce stacking height where local conditions can affect packaging strength.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION:

EXPOSURE GUIDELINES: Quartz: 0.1 mg/m³ TWA (NOHSC).

ENGINEERING CONTROLS: Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.

RECOMMENDATIONS FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS:

EYE/FACE PROTECTION: Use face shield, safety glasses or goggles.

SKIN PROTECTION: Cotton overalls buttoned to the neck and wrist, a washable hat and elbow length gloves.

RESPIRATORY PROTECTION: Atmospheric levels should be maintained below the exposure guideline. When respiratory protection is required for certain operations, use an approved air-purifying respirator.

APPLICATORS AND ALL OTHER HANDLERS:

EYE/FACE PROTECTION: Use face shield, safety glasses or goggles.

SKIN PROTECTION: Cotton overalls buttoned to the neck and wrist, a washable hat and elbow length gloves.

RESPIRATORY PROTECTION: Not required

9. PHYSICAL AND CHEMICAL PROPERTIES:

APPEARANCE: Grey pellets

DENSITY: 960-1120 g/kg

VAPOUR PRESSURE: 0.27 mPa @ 25°C

10. STABILITY AND REACTIVITY:

STABILITY: Stable under normal conditions.

INCOMPATIBILITY: (specific materials to avoid) Strong acids and alkalis.

HAZARDOUS DECOMPOSITION PRODUCTS: Oxides of nitrogen and sulfur may be formed if product is involved in fire.

HAZARDOUS POLYMERIZATION: Not known to occur.

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11. TOXICOLOGICAL INFORMATION:

POTENTIAL HEALTH EFFECTS: This section includes possible adverse effects, which could occur if this material is not handled in the recommended manner.

EYE: May cause slight eye irritation. May cause slight corneal injury.

SKIN: May cause skin irritation and allergic disorders. Prolonged skin contact is unlikely to result in absorption of harmful amounts. The LD₅₀ for skin absorption in rabbits is >2000 mg/kg.

INGESTION: Low toxicity if swallowed. Small amounts swallowed incidental or as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury. The oral LD₅₀ for rats is >2000 mg/kg.

INHALATION: At room temperature, exposure to vapour is minimal due to low volatility; a single exposure is not likely to be hazardous.

SYSTEMIC (OTHER TARGET ORGAN) EFFECTS: In animals, effects have been reported in the following organs: blood, kidney and pancreas.

CANCER INFORMATION: Contains quartz which may contain crystalline silica which has caused cancer in humans. Tebuthiuron did not cause cancer in laboratory animals.

TERATOLOGY (BIRTH DEFECTS): Tebuthiuron did not cause birth defects or other effects in the foetus even at doses which caused toxic effects in the mother.

REPRODUCTIVE EFFECTS: Tebuthiuron did not interfere with reproduction in animal studies.

MUTAGENICITY: For tebuthiuron *in-vitro* genetic toxicity studies were negative in some cases and positive in other cases. Animal genetic toxicity studies were negative.

12. ECOLOGICAL INFORMATION:

ENVIRONMENTAL DATA:

MOVEMENT & PARTITIONING: Based on tebuthiuron:

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Mobile in soil (estimated K_{oc} 59 – 80).
Not expected to bioaccumulate (based on estimated Log K_{ow} of 1.78).

DEGRADATION & PERSISTENCE: Based on tebuthiuron: Expected to be relatively persistent in soil. Estimated half-life in soil 12-15 months. Product is less persistent in moist soils than in dry soils. Will adsorb onto soil sediments and other matter in water. Not expected to persist in the atmosphere (estimated half life in air 14.7 hours).

ECOTOXICOLOGY: Based on tebuthiuron: Low toxicity to fish (TL₅₀ Bluegill 112 mg/L). Highly toxic to algae (EC₅₀ <1mg/L).

13. DISPOSAL CONSIDERATIONS:

DISPOSAL METHOD: If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities. This information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. If the material as supplied becomes a waste, follow all applicable regional, national and local laws and regulations.

14. TRANSPORT INFORMATION:

ROAD AND RAIL TRANSPORT: Not Dangerous Goods for transport by road or rail according to criteria of Australian Dangerous Goods Code 6.

MARINE and AIR: Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG) and by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulation.

UN No: 3077

Class: 9

Packing group: III

SHIPPING NAME: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S (TEBUTHIURON) Marine pollutant

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15. REGULATORY INFORMATION:

APVMA APPROVAL NUMBER: Graslan 41257 and
Graslan Aerial 61214

POISON SCHEDULE: 6

16. OTHER INFORMATION:

Glossary

ACGIH: American Conference of Governmental Industrial Hygienists.

ASCC: Australian Safety and Compensation Council.

BCF: Bioconcentration Factor - a measure for the characterization of the accumulation of a chemical in an organism. It is defined as the concentration of a chemical in an organism (plants, microorganisms, animals) divided by the concentration in a reference compartment (e.g. food, surrounding water).

BOD: Biochemical oxygen demand. The amount of oxygen required by aerobic microorganisms to decompose the organic matter in a sample of water, such as that polluted by sewage. It is used as a measure of the degree of water pollution. Also called biological oxygen demand.

Dow AgroSciences Industrial Hygiene Guideline: An internal company standard based on an 8 hour TWA.

EC₅₀: median effective concentration. Statistically derived concentration of a substance in an environmental medium expected to produce a certain effect in 50% of test organisms in a given population under a defined set of conditions.

EEL: Environmental exposure standard set by ERMA

Explosive Limits: The range of concentrations (% by volume in air) of a flammable gas or vapour that can result in an explosion for ignition in a confined space.

K_{oc}: the organic carbon partition coefficient (mL soil water /g organic carbon).

K_{ow}: See P_{ow}

LC₅₀: Lethal Concentration 50%. A concentration of chemical in air or water that will kill 50% of the test organisms.

LD₅₀: Lethal Dose-50%. The doses of a chemical that will kill 50% of the test animals receiving it.

NIOSH: American national Institute of Occupational Safety and Health, a federal agency which conducts research on occupational safety and health questions and recommends new standards.

NOHSC: National Occupational Health and Safety Commission of Australia now the Office of the Australian Safety and Compensation Council.

OSHA: American Occupational Safety and Health Administration.

PEL: Permissible Exposure Level, a maximum allowable exposure level by law.

pH: Measure of how acidic or alkaline a material is using a 1 - 14 scale. pH 1 is strongly acidic and pH 14 strongly alkaline.

Polymerisation: a chemical reaction in which small molecules (monomers) combine to form much larger molecules (polymers). A hazardous polymerisation reaction is one that occurs at a fast rate and releases large amounts of energy.

P_{ow}: The octanol-water partition coefficient is the ratio of the concentration of a chemical in octanol and in water at equilibrium and at a specified temperature. Octanol is an organic solvent that is used as a surrogate for natural organic matter. This parameter is used in many environmental studies to help determine the fate of chemicals in the environment.

STEL: Short-Term Exposure Limit. A term used to indicate the maximum average concentration allowed for a continuous 15 minute exposure period.

TLV: Threshold Limit Value, an exposure limit set by a competent authority

TWA: Time Weighted Average. The average concentration of a chemical in air over the total exposure time - usually an 8-hour workday.

References

AS/NZS 1715-1994 Selection Use and Maintenance of Respiratory Protective Devices.

ASNZS 1716 - 1994 Respiratory protective devices.

Australian Dangerous Goods Code

International Maritime Dangerous Goods Code.

International Air Transport Association (IATA) Dangerous Goods Regulation

NOHSC Hazardous Substances Information System.

VERSION CONTROL

Replaces version dated: 22 September 2006

Sections amended: 1 & 14

**FOR FURTHER PRODUCT INFORMATION CALL DOW
AGROSCIENCES CUSTOMER SERVICE**

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REPRESENTATIVES TOLL FREE 1800 700 096 DURING BUSINESS HOURS.

This MSDS has been compiled using publicly available information, information provided by suppliers of ingredients used in the product and internal studies on the product and/or its ingredients.

THIS MSDS SUMMARISES OUR BEST KNOWLEDGE OF THE HEALTH AND SAFETY HAZARD INFORMATION OF THE PRODUCT AND HOW TO SAFELY HANDLE AND USE THE PRODUCT IN THE WORKPLACE BASED ON PUBLICLY AVAILABLE AND INTERNALLY AVAILABLE INFORMATION. EACH USER SHOULD READ THIS MSDS AND CONSIDER THE INFORMATION IN THE CONTEXT OF HOW THE PRODUCT WILL BE HANDLED AND USED IN THE WORKPLACE INCLUDING IN CONJUNCTION WITH OTHER PRODUCTS. IF CLARIFICATION OR FUTURE INFORMATION IS NEEDED TO ENSURE THAT AN APPROPRIATE RISK ASSESSMENT CAN BE MADE, THE USER SHOULD CONTACT THIS COMPANY. THE RESPONSIBILITY FOR PRODUCTS SOLD IS SUBJECT TO OUR STANDARD TERMS AND CONDITIONS, A COPY OF WHICH IS SENT TO OUR CUSTOMERS AND IS ALSO AVAILABLE ON REQUEST.

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