

# MATERIAL SAFETY DATA SHEET



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

## GRAZON\* DS HERBICIDE

Effective Date: 26 Sept 06  
Product Code: 12998

### 1. PRODUCT AND COMPANY IDENTIFICATION:

**PRODUCT:** Grazon DS Herbicide

**PURPOSE:** Herbicide for control of woody and herbaceous weeds.

#### 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**

**Potential Health Effects:** Irritant to skin eyes and respiratory system.

#### RISK PHRASES:

R36/38 Irritating to eyes and skin  
R43 May cause sensitisation by skin contact.  
R65: Harmful: may cause lung damage if swallowed.  
R50: Very toxic to aquatic organisms.

#### SAFETY PHRASES:

S2: Keep out of the reach of children.  
S23 Do not breathe vapour or spray.  
S24/25: Avoid contact with skin and eyes.  
S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.  
S20/21 When using do not eat, drink or smoke.

S29 Do not empty into drains.  
S45 In case of accident or if you feel unwell, seek medical advice immediately (show that the label where possible).  
S62: If swallowed, do not induce vomiting: seek medical advice immediately and show the container or label.  
S61: Avoid release to the environment. Refer to special instructions below in sections 6, 7 and 13)

### 3. COMPOSITION/INFORMATION ON INGREDIENTS:

Ingredient	CAS #	Content
Triclopyr butoxyethyl ester	064700-56-7	36.5%
Picloram	001918-02-1	8.8%
Balance Ingredients not contributing to a hazard		60-80%

### 4. FIRST AID:

**Consult the Poisons Information Centre (Australia 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:** Hold eyes open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, and then continue rinsing eyes. If irritation persists call a poison control center or doctor for treatment advice.

**SKIN:** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. If irritation persists call a poison control center or doctor for treatment advice.

**INGESTION:** Immediately call the Poison Information Centre or doctor. Do not induce vomiting unless told to do so by the Poison Information Centre or doctor. Do not give any liquid to the person. Do not give anything by mouth to an unconscious person.

**INHALATION:** Move person to fresh air. If effects occur, consult a physician.

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**NOTE TO PHYSICIAN:** The decision of whether to induce vomiting or not should be made by a physician. If lavage is performed, suggest endotracheal and/or oesophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. 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:** 82°C

**COMBUSTIBLE:** C1

#### FLAMMABLE LIMITS

LFL: Not available  
UFL: Not available

**EXTINGUISHING MEDIA:** Water fog, foam, CO<sub>2</sub>, dry chemical.

**FIRE AND EXPLOSION HAZARDS:** Highly toxic and irritating fumes are released in fire situations including oxides of sulphur, carbon, nitrogen. Hydrogen chloride and cyanide compounds may be formed.

**FIRE-FIGHTING EQUIPMENT:** Use approved positive-pressure, self-contained breathing apparatus and special protective clothing, including heavy neoprene or rubber boots and neoprene gloves.

**HAZCHEM:** 2X

### 6. ACCIDENTAL RELEASE MEASURES:

**ACTION TO TAKE FOR SPILLS/LEAKS:** DO NOT touch or walk through spilled material. Wear a face shield or goggles, overalls buttoned to neck and wrist, chemical resistant gloves and boots. Stop leak when safe to do so. Dike area and prevent entry into waterways, and drains. **Small spills/leaks:** Absorb with material such as sand, soil or sawdust. Collect spilled product and place in sealable container for disposal. Spill residues may be cleaned using water and detergent. Contain and absorb wash water for disposal. Absorb and collect washings and place in the same sealable container for disposal. **Large spills/leaks:** Dike the area of and report them to Dow AgroSciences 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, inhaled, or absorbed through skin. Causes eye, and skin irritation. May cause allergic disorders. Avoid contact with eyes, skin and clothing. Do not breathe spray mist. Wear protective equipment as specified in this MSDS or the label. Handlers 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:

These precautions are suggested for conditions where the potential for exposure exists. Emergency conditions may require additional precautions

#### EXPOSURE GUIDELINES:

Picloram Acid: NOHSC TWA is 10 mg/m<sup>3</sup>  
Triclopyr Acid: Dow AgroSciences Industrial Hygiene Guide is 2 mg/m<sup>3</sup>, Skin

A "skin" notation following the exposure guideline refers to the potential for dermal absorption of the material including mucous membranes and the eyes either by contact with vapors or by direct skin contact. It is intended to alert the reader that inhalation may not be the only route of exposure and that measures to minimize dermal exposures should be considered.

**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 chemical goggles or face shield.

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**SKIN PROTECTION:** When prolonged or frequently repeated contact could occur, use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full-body suit will depend on the task.

**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. The following should be an effective type of air-purifying respirator: organic vapour (Type A) cartridge.

**APPLICATORS AND ALL OTHER HANDLERS:** Refer to the product label for personal protective clothing and equipment.

### 9. PHYSICAL AND CHEMICAL PROPERTIES:

**APPEARANCE:** Brown

**ODOUR:** Ester

**DENSITY:** 1.15 g/mL @ 20°C

**BOILING POINT:** ~200°C

**VAPOR PRESSURE:** Not available for substance

(Triclopyr BE =  $3.60 \times 10^{-6}$  mmHg @ 25 °C ;

Picloram acid =  $6.16 \times 10^{-7}$  mm Hg at 35 °C)

**SOLUBILITY IN WATER:** Emulsifiable

**pH:** 6.65 – 8.5 (5% v/v water emulsion)

### 10. STABILITY AND REACTIVITY:

**STABILITY:** Combustible.

**INCOMPATIBILITY:** (specific materials to avoid) None under normal use conditions. Under abnormal conditions, avoid oxidizing materials and strong acids.

**HAZARDOUS DECOMPOSITION PRODUCTS:** Hydrogen chloride, cyanide compounds and/or nitrogen, carbon and sulphur oxides may be formed if product is involved in fire.

**HAZARDOUS POLYMERIZATION:** Not known to occur.

### 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 moderate eye irritation. Corneal injury is unlikely. Effects are likely to heal readily.

**SKIN:** Prolonged contact may cause skin irritation with local redness. Prolonged skin contact is unlikely to result in absorption of harmful amounts. Prolonged or frequently repeated skin contact may cause allergic skin reactions in some individuals. The dermal LD<sub>50</sub> for rabbits is >2,000 mg/kg.

**INGESTION:** Low toxicity if swallowed. Aspiration into the lungs may occur during ingestion or vomiting, causing lung damage or even death due to chemical pneumonia. The LD<sub>50</sub> for rats is 2,525 mg/kg (female) and 3,383 mg/kg (male).

**INHALATION:** Not expected to be toxic via inhalation. The aerosol LC<sub>50</sub> for rats is >5.0 mg/L for 4 hours.

**SYSTEMIC (OTHER TARGET ORGAN) EFFECTS:** In animals, effects have been reported on the following organs: liver, kidney, blood. Symptoms of excessive exposure may be anesthetic or narcotic effects, dizziness and drowsiness may be observed.

**CANCER INFORMATION:** The active ingredient(s) did not cause cancer in laboratory animals. Manufacturer of solvent claims the solvent does not require classification as a carcinogen.

**TERATOLOGY (BIRTH DEFECTS):** The active ingredient(s) did not cause birth defects in laboratory animals. Has been toxic to the foetus in laboratory animals at doses toxic to the mother.

**REPRODUCTIVE EFFECTS:** For triclopyr, in laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals. Picloram did not interfere with reproduction in laboratory animal studies.

**MUTAGENICITY:** The preponderance of data shows picloram to be non-mutagenic in 'in-vitro' (test tube) tests and in animal test systems. For triclopyr, in-vitro and animal genetic toxicity studies were negative.

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### 12. ECOLOGICAL INFORMATION:

#### ENVIRONMENTAL DATA:

**MOVEMENT & PARTITIONING:** Bioconcentration potential is moderate (BCF is between 100 and 3000 or Log Pow between 3 and 5).

**DEGRADATION & PERSISTENCE:** Based on stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions.

**ECOTOXICOLOGY:** Based largely or completely on information for the active ingredient(s).

Material is:

Highly toxic to aquatic organisms on an acute basis (The LC<sub>50</sub> or EC<sub>50</sub> is between 0.1 and 1 mg/L in the most sensitive species tested).

Highly toxic to plants.

Harmful to birds and mammals (Triclopyr BE bird LD<sub>50</sub> = 735 mg/kg)

### 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 regulations. 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 classified as dangerous goods for transport by road or rail.

**MARINE and AIR:** Classified as Dangerous Goods for transport by sea and air according to the criteria of the UN Model Regulations for Transport of Dangerous goods 13<sup>th</sup> Edition.

**UN No:** 3082

**Class:** 9

**Packing group:** III

**SHIPPING NAME:** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S (PICLORAM AND TRICLOPYR)

### 15. REGULATORY INFORMATION:

**APVMA APPROVAL NUMBER:** 31558

**POISON SCHEDULE:** S6

### 16. OTHER INFORMATION:

#### Glossary

**ACGIH:** American Conference of Governmental Industrial Hygienists.

**AIHA WEEL:** American Industrial Hygiene Association's Workplace Environmental Exposure Level.

**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).

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

**EC<sub>50</sub>:** 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.

**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<sub>oc</sub>** - the organic carbon partition coefficient (mL soil water /g organic carbon).

**LC<sub>50</sub>** - Lethal Concentration 50%. A concentration of chemical in air or water that will kill 50% of the test organisms.

**LD<sub>50</sub>** - Lethal Dose-50%. The dose of a chemical that will kill 50% of the test animals receiving it.

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**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<sub>ow</sub>** - 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 work day.

### References

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

ASNZS 1716 - 1994 Respiratory protective devices.

Australian Dangerous Goods Code

NOHSC Hazardous Substances Information System.

**FOR FURTHER PRODUCT INFORMATION CALL DOW AGROSCIENCES CUSTOMER SERVICE 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

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WORKPLACE INCLUDING IN CONJUNCTION WITH OTHER PRODUCTS. IF CLARIFICATION OR FURTHER 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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