

MATERIAL SAFETY DATA SHEET



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

BROADSTRIKE* HERBICIDE

Effective Date: 14 June 2006
Product Code: 35459

1. PRODUCT AND COMPANY IDENTIFICATION:

PRODUCT: Broadstrike* Herbicide

PURPOSE: Broadleaf herbicide

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

NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

Not classified as hazardous according to the criteria of NOHSC

Not Classified as Dangerous Goods for Land Transport

Potential Health Effects: Irritating to eyes.

RISK PHRASES:

R36: Irritating to eyes.

SAFETY PHRASES:

S2: Keep out of the reach of children.
S3/9/49: Keep only in the original container in a cool, well-ventilated place.
S20/21: When using do not eat, drink or smoke.
S24/25: Avoid contact with skin and eyes.

3. COMPOSITION/INFORMATION ON INGREDIENTS:

Ingredient	CAS #	Content
Flumetsulam	098967-40-9	80.0 %w/w
Balance not contributing to hazard		20.0 %w/w

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: Flush eyes thoroughly with water for several minutes. Remove contact lenses after initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably 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 determined (expected to be > 90 °C based on components).

COMBUSTIBLE: Not a combustible liquid.

FLAMMABLE LIMITS

LFL: Not applicable

UFL: Not applicable

EXTINGUISHING MEDIA: Use water fog, foam, CO₂, or dry chemical.

FIRE AND EXPLOSION HAZARDS: Fire and explosion potential not determined but expected to be low.

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FIRE-FIGHTING EQUIPMENT: Wear positive-pressure, self-contained breathing apparatus and full protective clothing.

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. **Small spills:** Sweep 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. Report large spills 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. Causes 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:

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

EXPOSURE GUIDELINES:

Flumetsulam: Dow AgroSciences Industrial Hygiene Guide is 10 mg/M³.

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 safety glasses.

SKIN PROTECTION: No precautions other than clean body-covering clothing should be needed.

RESPIRATORY PROTECTION: Atmospheric levels should be maintained below the exposure guideline.

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

9. PHYSICAL AND CHEMICAL PROPERTIES:

APPEARANCE: Tan to brown granule

ODOUR: Characteristic

pH: 6

BULK DENSITY: 0.48 g/mL @ 22°C

BOILING POINT: Not determined

SOLUBILITY IN WATER: Disperses in water

VAPOR PRESSURE: 37 x 10⁻⁷ mPa @ 25°C (Flumetsulam)

CORROSIVENESS: Not corrosive

10. STABILITY AND REACTIVITY:

STABILITY: Stable at normal temperatures and storage conditions.

INCOMPATIBILITY: (specific materials to avoid) None known.

HAZARDOUS DECOMPOSITION PRODUCTS: If product is involved in fire, oxides of nitrogen, oxides of sulfur, and halogen derivatives may be formed.

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 slight temporary eye irritation. Corneal injury is unlikely.

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SKIN: Prolonged contact is essentially non-irritating to skin. Prolonged skin contact is unlikely to result in absorption of harmful amounts. The LD₅₀ for skin absorption in rabbits is >2000 mg/kg.

INGESTION: Very low toxicity if swallowed. The oral LD₅₀ for rats is >5000 mg/kg. Small amounts swallowed incidental to normal handling operations are not likely to cause injury; swallowing amounts larger than that may cause injury.

INHALATION: Prolonged exposure is not expected to cause adverse effects.

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

CANCER INFORMATION: Did not cause cancer in laboratory animals.

TERATOLOGY (BIRTH DEFECTS): Birth defects are unlikely. Even exposures having an adverse effect on the mother should have no effect on the fetus.

REPRODUCTIVE EFFECTS: In animal studies, did not interfere with reproduction.

MUTAGENICITY: In-vitro and animal mutagenicity studies were negative

12. ECOLOGICAL INFORMATION:

ENVIRONMENTAL DATA:

MOVEMENT & PARTITIONING:

Bioconcentration potential is low (BCF <100 or Log Pow <3).

Log octanol/water partition coefficient (Log Pow) is estimated using a structural fragment method to be -0.288. Potential for mobility in soil is slight (Koc between 2000 and 5000).

Soil organic carbon/water partition coefficient (Koc) is estimated to be 3100.

Henry's Law Constant (H) is estimated to be 4.76E-15 atm-m³/mole.

DEGRADATION & PERSISTENCE:

Theoretical Oxygen Demand (ThOD) is calculated to be 2.02 p/p.

ECOTOXICOLOGY:

Material is practically non-toxic to aquatic organisms on an acute basis (LC₅₀>100 mg/L in most sensitive species).

Material is practically non-toxic to birds on an acute basis (LD₅₀ is >2000 mg/kg).

Material is practically non-toxic to birds on a dietary basis (LC₅₀ is >5000 ppm).

Acute oral LD₅₀ in honeybee (*Apis mellifera*) is >100 µg/bee.

Maximum acceptable toxicant concentration (MATC) is >197 mg/L in fathead minnow.

Growth inhibition EC₅₀ for diatom (*Navicula sp*) is 51.1 mg/L. Growth inhibition EC₅₀ for blue-green alga (*Anabaena flow-aquae*) is 0.167 mg/L.

Growth inhibition EC₅₀ in duckweed (*Lemna sp*) is 5.1 µg/L.

Growth inhibition EC₅₀ for green alga (*Selenastrum capricornutum*) is 4.93 µg/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 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.

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14. TRANSPORT INFORMATION:

ROAD AND RAIL TRANSPORT: Not classified as dangerous goods for transport by road and rail by the criteria of the Australian Dangerous Goods Code (ADG 6),

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 (FLUMETSULAM)

15. REGULATORY INFORMATION:

APVMA APPROVAL NUMBER: 40714

POISON SCHEDULE: Not Scheduled

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.

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.

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).

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 dose of a chemical that will kill 50% of the test animals receiving it.

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.

TVL: 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 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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