

SAFETY DATA SHEET



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

PRODUCT: Starane* Advanced Herbicide

Effective Date: 21 April 2008
Product Code: 108760

1. PRODUCT AND COMPANY IDENTIFICATION:

PRODUCT: Starane Advanced Herbicide

PURPOSE: Crop and pasture 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

Classified as hazardous according to the criteria of NOHSC

Not Classified as Dangerous Goods for Land Transport in receptacles not exceeding 500L or IBCs (see Section 14)

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

RISK PHRASES:

R36/38: Irritating to eyes and skin.

R43: May cause sensitisation by skin contact.

R50: Very toxic to aquatic organisms.

SAFETY PHRASES:

S2: Keep out of the reach of children.

S20/21: When using do not eat, drink or smoke.

S36/37/39: Wear suitable protective clothing, gloves and eye/face protection.

S62: If swallowed, do not induce vomiting: seek medical advice immediately and show the container or label.

S29/56: Do not empty into drains; dispose of this material and its container at hazardous or special waste collection point.

3. COMPOSITION/INFORMATION ON INGREDIENTS:

Ingredient	CAS #	Content
Fluroxypyr-meptyl	81406-37-3	45.5%
Balance not individually contributing to the hazard classification		54.5%

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: 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. Call the Poisons Information Centre or doctor for treatment advice.

SKIN: Take off contaminated clothing. Wash skin with soap and plenty of water for 15-20 minutes. Call the Poisons Information Centre or doctor for treatment advice. Items which cannot be decontaminated, including leather articles such as shoes, belts, and watchbands should be disposed of properly.

INGESTION: Immediately call the Poisons Information Centre or doctor for treatment advice. Do not induce vomiting unless told to do so by the Poisons 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 person is not breathing, call 000 or an ambulance and then give artificial respiration; if by mouth to mouth use rescuer protection

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(pocket mask etc). If breathing is difficult, oxygen should be administered by qualified personnel.

NOTE TO DOCTOR: Maintain adequate ventilation and oxygenation of the patient. If lavage is performed, suggest endotracheal and/or oesophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. The decision of whether to induce vomiting or not should be made by a physician. Skin contact may aggravate preexisting dermatitis. 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: >100°C (Closed Cup)

COMBUSTIBLE: C1

FLAMMABLE LIMITS

LFL: Not determined

UFL: Not determined

EXTINGUISHING MEDIA: Foam, CO₂, or Dry chemical

FIRE AND EXPLOSION HAZARDS: Foam fire extinguishing system is preferred because uncontrolled water can spread possible contamination. Toxic irritating gases, which may include oxides of carbon, oxides of nitrogen, hydrogen chloride and hydrogen fluoride, may be formed under fire conditions.

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

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 footwear. Stop leak when safe to do so. Dam the 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. Dam the area of **large spills/leaks** and report them to Dow AgroSciences Emergency Services at 1800-033-882.

7. HANDLING AND STORAGE:

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: Keep out of reach of children. Users should wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.

HANDLING: Do not swallow. Avoid contact with eyes, skin, and clothing. Avoid breathing vapours and spray mist. Handle concentrate in ventilated area. Wash thoroughly with soap and water after handling and before eating, chewing gum, using tobacco, using the toilet or smoking. 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 a potential for exposure exists. Emergency conditions may require additional precautions.

EXPOSURE GUIDELINES:

Fluroxypyr-meptyl: 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 chemical goggles.

SKIN PROTECTION: Use gloves chemically resistant to this material, e.g. laminated film.

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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: Clear pale yellow liquid

ODOUR: Aromatic

DENSITY: 1.054 g/mL

BOILING POINT: Not determined

SOLUBILITY IN WATER: Not determined

VAPOR PRESSURE: 135×10^{-3} mPa @ 20°C for fluroxypr-meptyl

pH: 6 (5% v/v emulsion)

10. STABILITY AND REACTIVITY:

STABILITY: Stable under normal storage conditions.

INCOMPATIBILITY: (specific materials to avoid) None known.

HAZARDOUS DECOMPOSITION PRODUCTS: In fire noxious/irritating gases may be formed including oxides of carbon, oxides of nitrogen, hydrogen chloride and hydrogen fluoride.

HAZARDOUS POLYMERIZATION: Not know to occur.

11. TOXICOLOGICAL INFORMATION:

POTENTIAL HEALTH EFFECTS:

EYE: May cause moderate irritation with corneal injury.

SKIN: Brief contact may cause slight skin irritation with local redness. May cause drying or flaking of the skin. Prolonged contact may cause skin irritation with local redness. Prolonged exposure to not expected to cause toxic effects. Dermal LD₅₀ > 5000 mg/kg.

INGESTION: Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts. Oral LD₅₀ > 5000 mg/kg

INHALATION: Prolonged exposure is not expected to cause adverse effects. The aerosol 4 hour LC₅₀ was > 5.5 mg/L in rats.

SYSTEMIC (OTHER TARGET ORGAN) EFFECTS: For fluroxypr, based on available data, repeated exposures are not anticipated to cause significant adverse effects.

CANCER INFORMATION: Fluroxypr did not cause cancer in laboratory animals.

TERATOLOGY (BIRTH DEFECTS): Fluroxypr 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: Fluroxypr, in animal studies, did not interfere with reproduction.

MUTAGENICITY: For the active ingredient, in-vitro and animal genetic toxicity studies were negative.

12. ECOLOGICAL INFORMATION:

ENVIRONMENTAL DATA:

MOVEMENT & PARTITIONING: Based largely or completely on information for fluroxypr.

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

Potential for mobility in soil is slight (Koc is between 2000 and 5000).

Based largely or completely on information for the solvent. Bioconcentration potential is high (BCF is >3000 or Log Pow between 5 and 7).

Based largely or completely on information for NMP.

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

Potential for mobility in soil is very high (Koc between 0 and 50).

DEGRADATION & PERSISTENCE: Based largely or completely on information for fluroxypr.

Chemical degradation (hydrolysis) is expected in the environment within minutes to hours.

Degradation is expected in the soil environment within days to weeks.

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ECOTOXICOLOGY: Based largely or completely on information for fluroxypyr.

Material is highly toxic to aquatic invertebrates on an acute basis (LC_{50} or EC_{50} is between 0.1 and 1 mg/L).

Material is practically non-toxic to birds on an acute basis (LD_{50} is >2000 mg/kg).

Material is practically non-toxic to birds on a dietary basis (LC_{50} is >5000 ppm).

SHIPPING NAME: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S (FLUROXYPYR MEPTYL) Marine pollutant

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:

DANGEROUS GOODS CLASSIFICATION

ROAD AND RAIL TRANSPORT: Not classified as dangerous goods according to the criteria of the Australian Dangerous Goods Code (ADG 7) when transported in packagings, other receptacles not exceeding 500L or IBCs.

SEA AND AIR TRANSPORT: Classified as dangerous goods for transport by sea and air in accordance with the International Maritime Dangerous Goods Code (IMDG) and the International Air Transport Association (IATA) Dangerous Goods Regulation.

UN No: 3082

Class: 9

Packing group: III

15. REGULATORY INFORMATION:

APVMA APPROVAL NUMBER: 62287

POISON SCHEDULE: The active constituent is listed in Appendix B of the SUSDP (Substances Considered Not To Require Control By Scheduling)

16. OTHER INFORMATION:

Glossary

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

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).

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.

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.

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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.

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.

VERSION CONTROL

Replaces version dated: 14 March 2008

Sections amended: 5

Product Number: GF-1784

**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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