

MATERIAL SAFETY DATA SHEET



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

TORPEDO HERBICIDE

Effective Date: 26 February 2008
Product Code: 103960

1. PRODUCT AND COMPANY IDENTIFICATION:

PRODUCT: Torpedo Herbicide

PURPOSE: 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 a Dangerous Good**

Potential Health Effects: Potentially irritating to eyes
and skin.

RISK PHRASES:

Xi; Irritant
R41: Risk of serious eye damage

SAFETY PHRASES:

S2: Keep out of the reach of children.
S24/25: Avoid contact with skin and eyes.
S35: This material and its container must be
disposed of in a safe way.

3. COMPOSITION/INFORMATION ON INGREDIENTS:

Ingredient	CAS #	Content
Clopyralid	057754-85-5	30.8%w/w
Monoethanolamine Salt		
Florasulam	145701-23-1	4.3%w/w
Propane-1,2-diol	000057-55-6	4.6%w/w
Balance not contributing to hazard		60.3%w/w

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. 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. Wash clothing before reuse. Shoes and other leather items, which cannot be decontaminated, should be disposed of properly.

INGESTION: Call the Poisons Information Centre or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the Poisons Information Centre or doctor. Never give anything by mouth to an unconscious person.

INHALATION: Move person to fresh air. If person is not breathing, call 000 (ambulance), and then give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask etc). Call the Poisons Information Centre or doctor for treatment advice.

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: 100°C (PMCC)

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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 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 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. Dike the area of large spills 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. Causes eye and skin 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:

Propane-1,2-diol: TWA 150ppm. 474 mg/m³ (particulates & vapour); 10 mg/m³ (particulates only) (NOHSC).

ENGINEERING CONTROLS: Good general ventilation should be sufficient for most conditions. Local exhaust ventilation may be necessary for some operations.

RECOMMENDATIONS FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS:

EYE/FACE PROTECTION: Use safety glasses.

SKIN PROTECTION: Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. Remove contaminated clothing immediately, wash skin area with soap and water, and launder clothing before reuse or dispose of properly. Items, which cannot be decontaminated, such as shoes, belts and watchbands, should be removed and disposed of properly.

RESPIRATORY PROTECTION: If respiratory irritation is experienced, use an approved air-purifying respirator.

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

9. PHYSICAL AND CHEMICAL PROPERTIES:

CORROSIVENESS: Not corrosive

SOLUBILITY IN WATER: Miscible

LIQUID DENSITY: 1.17 g/mL

pH: 5.3

APPEARANCE: White to tan

ODOR: Fragrant

VISCOSITY @ 20°C: 350 cps

VAPOUR PRESSURE: 1.2 x 10⁻⁵ mmHg @20°C (clopyralid). 1 x 10⁻⁵ Pa at 25° C (florasulam)

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10. STABILITY AND REACTIVITY:

STABILITY: Stable under normal storage conditions. Avoid extreme temperatures.

INCOMPATIBILITY: (specific materials to avoid) Avoid strong basic, acidic or oxidizing materials.

HAZARDOUS DECOMPOSITION PRODUCTS: Oxides of nitrogen, hydrogen fluoride, and oxides of sulfur may be formed along with carbon monoxide and carbon dioxide if this product is involved in a 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 slight temporary eye irritation. Mist may cause eye irritation. Corneal injury is unlikely.

SKIN: Brief contact is essentially non-irritating to skin. Prolonged contact may cause skin irritation with local redness. Prolonged skin contact is unlikely to result in absorption of harmful amounts. The dermal LD₅₀ for rats and rabbits is expected to be >2000 mg/kg.

INGESTION: Low toxicity if swallowed. Small amounts swallowed incidental to normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury. The oral LD₅₀ for rats is expected to be >5000 mg/kg.

INHALATION: No adverse effects anticipated by this route of exposure when handled properly. Mist may cause irritation of upper respiratory tract (nose and throat). The inhalation LC₅₀ for rats is expected to be >2.6 mg/L for 4 hours.

SYSTEMIC (OTHER TARGET ORGAN) EFFECTS: In animal studies, florasulam and clopyralid MEA have been shown to cause kidney and liver effects. Observations in animals include: lethargy.

CANCER INFORMATION: Florasulam and clopyralid MEA did not cause cancer in laboratory animals.

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

REPRODUCTIVE EFFECTS: In animal studies, florasulam and clopyralid MEA did not interfere with reproduction.

MUTAGENICITY: For florasulam and clopyralid MEA, in-vitro and animal genetic toxicity studies were negative.

12. ECOLOGICAL INFORMATION:

ENVIRONMENTAL DATA:

MOVEMENT & PARTITIONING:

Based largely or completely on information for florasulam and clopyralid MEA.

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

DEGRADATION & PERSISTENCE:

Based largely or completely on information for florasulam.

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.

Based largely or completely on information for clopyralid MEA.

Biodegradation under aerobic laboratory conditions is below detectable limits (BOD₂₀ or BOD₂₈/ThOD is <2.5%).

ECOTOXICOLOGY:

Based largely or completely on information for florasulam.

Material is practically non-toxic to aquatic organisms on an acute basis (LC₅₀ or EC₅₀ is >100 mg/L in most sensitive species tested).

Material is slightly toxic to birds on an acute basis (LD₅₀ is between 501 and 2000 mg/kg).

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

Acute contact and oral LD₅₀ for honey bees is >100 µg/bee.

The LC₅₀ for earthworm (*Esisenia foetida*) is >1320 mg/kg.

Based largely or completely on information for clopyralid MEA.

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Material is practically non-toxic to aquatic organisms on an acute basis (LC₅₀ or EC₅₀ is >100 mg/L in most sensitive species tested).

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

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

Acute contact and oral LD₅₀ for honey bees is >100 µg/bee.

The LC₅₀ for earthworm (*Esisenia foetida*) is >1000 mg/kg.

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

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:

Not a Dangerous Good

15. REGULATORY INFORMATION:

APVMA APPROVAL NUMBER: 59789

POISON SCHEDULE: S5

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).

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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.

Relaces version dated: 18 April 2007
Sections amended: 9 and 15

**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 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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