

MATERIAL SAFETY DATA SHEET



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

X-PAND HERBICIDE

Effective Date: 4 July 2006
Product Code: Draft only

1. PRODUCT AND COMPANY IDENTIFICATION:

PRODUCT: X-Pand* 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 (Xi)
Not classified as Dangerous Goods for land
transport**

Potential Health Effects:
Irritating to eyes and skin.

RISK PHRASES:
R36/38: Irritating to eyes and skin.

SAFETY PHRASES:
S2: Keep out of 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.
S26: In case of contact with eyes, rinse
immediately with plenty of water and seek
medical advice.

3. COMPOSITION/INFORMATION ON INGREDIENTS:

Ingredient	CAS #	Content
Isoxaben	082558-50-7	61 %w/w
Florasulam	145701-23-1	4% w/w
Balance not contributing to hazard		35 %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: 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: No emergency medical treatment necessary.

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

COMBUSTIBLE: Not Combustible

FLAMMABLE LIMITS

LFL: 1.01 kg/m³
UFL: Not applicable

AUTO-IGNITION TEMPERATURE: 415°C to 420°C

EXTINGUISHING MEDIA: Use water, CO₂ or dry
chemicals.

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FIRE AND EXPLOSION HAZARDS: Will emit toxic vapours as it burns, including oxides of carbon and nitrogen.

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

HAZCHEM: 2X

6. ACCIDENTAL RELEASE MEASURES:

ACTION TO TAKE FOR SPILLS/LEAKS: Do not touch or walk through spilled material. Wear gloves, overalls 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, inhaled, or absorbed through skin. Causes eye and skin irritation. Avoid contact with eyes, skin and clothing. Users should wash hands before eating, drinking, chewing gum, using tobacco, smoking or using the toilet.

STORAGE: Store in tightly closed original container in a cool, dry well-ventilated area out of direct sunlight. Do not store with food, feedstuffs, fertilisers 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

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EXPOSURE GUIDELINES:

None established for the product. X-Pand Herbicide contains clay. NOHSC TWA for kaolin 10mg/m³. Clays may contain trace quantities of silica. Silica: NOHSC TWA for respirable dust from fumed silica 2 mg/m³ and quartz or tridymite 0.1mg/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 when prolonged or frequently repeated contact could occur.

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

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

9. PHYSICAL AND CHEMICAL PROPERTIES:

APPEARANCE: Tan granule

ODOUR: Mild

pH: 6 (1% aqueous suspension)

BULK DENSITY: 0.55 g/mL

VAPOUR PRESSURE: 55 x 10⁻⁴ mPa @ 25°C (isoxaben)

VAPOUR DENSITY: Not applicable

SOLUBILITY IN WATER: Disperses in water

10. STABILITY AND REACTIVITY:

STABILITY: Do not store near heat or flame. Do not store in direct sunlight. Do not store at temperatures above 50°C.

INCOMPATIBILITY: (specific materials to avoid) None known.

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HAZARDOUS DECOMPOSITION PRODUCTS: Will emit toxic vapours as it burns including oxides of carbon and nitrogen.

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, which may be slow to heal. May cause slight temporary corneal injury.

SKIN: Prolonged or repeated exposure may cause slight skin irritation. Prolonged skin contact is unlikely to result in absorption of harmful amounts. The LD₅₀ for skin absorption in rabbits is >5000 mg/kg.

INGESTION: Very low toxicity if swallowed. The oral LD₅₀ for rats is >5000 mg/kg. Harmful effects not anticipated from swallowing small amounts.

INHALATION: No adverse effects are anticipated from single exposure to dust.

SYSTEMIC (OTHER TARGET ORGAN) EFFECTS: Contains component(s), which, in animals, have been shown to cause liver and kidney effects. May contain trace amounts of silica. Repeated excessive exposure to crystalline silica may cause silicosis, a progressive and disabling disease of the lungs. Some evidence suggests that kidney effects may also result from excessive exposure.

CANCER INFORMATION: An increase in non-malignant liver tumors was observed with isoxaben in one of two species tested. May contain trace amounts of silica which is suspected to be a carcinogen.

TERATOLOGY (BIRTH DEFECTS): Isoxaben caused birth defects in laboratory animals only at doses toxic to the mother.

REPRODUCTIVE EFFECTS: Isoxaben has been shown to interfere with reproduction in animal studies but only at doses toxic to the parental generation.

MUTAGENICITY: In-vitro and animal genetic toxicity studies were negative.

12. ECOLOGICAL INFORMATION:

ENVIRONMENTAL DATA:

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MOVEMENT & PARTITIONING:

Based largely or completely on information for isoxaben and florasulam.

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

DEGRADATION & PERSISTENCE: Based largely or completely on information for isoxaben and florasulam. Isoxaben: Undergoes microbial degradation in the soil. Half-life in soils is dependent on soil type and conditions and is approximately 150-180 days. There is no evidence of any significant leaching, therefore it is unlikely to contaminate ground water.

Florasulam: Half-life in soils is dependent on soil type and conditions and is approximately 2-18 days. There is no evidence of any significant leaching, therefore it is unlikely to contaminate ground water. Average half-life in water is 9-29 days.

ECOTOXICOLOGY: Based on data for the formulation. Material is not harmful to fish on an acute basis (LC50>100mg/L). Material is not harmful to aquatic invertebrates on an acute basis (EC50>100mg/L). Material is very toxic to aquatic plants (IC50 <1.0 mg/l). Isoxaben: Material is practically non-toxic to birds on an acute basis (LD50>2000mg/kg). Florasulam: Material is slightly toxic to birds on an acute basis (500mg/kg <LD50 <2000mg/kg).

Other Information: Material is practically non-toxic to bees on an acute basis.

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:

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ROAD AND RAIL TRANSPORT: Not classified as a Dangerous Good under the Transport of Dangerous Goods by Road or Rail.

VESSEL TRANSPORT:

UN No: UN3082

Class: 9

Packing group: III

SHIPPING NAME: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, N.O.S.

15. REGULATORY INFORMATION:

APVMA APPROVAL NUMBER: Not assigned yet
POISON SCHEDULE: 5

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

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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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