

MATERIAL SAFETY DATA SHEET



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

ACCESS* HERBICIDE

Effective Date: 18 April 2007
Product Code: 44504

1. PRODUCT AND COMPANY IDENTIFICATION:

PRODUCT: Access* 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

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.
S23: Do not breathe vapour or spray.
S24: Avoid contact with skin.
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 (sections 6, 7, 13).

3. COMPOSITION/INFORMATION ON INGREDIENTS:

Ingredient	CAS #	Content
Triclopyr Butoxyethyl Ester	064700-56-7	30.7 %w/w
Picloram Isooctyl Ester	026952-94-5	16.4 %w/w
Diethylene glycol monoethyl ether	000111-90-0	10-20 %w/w
Aromatic hydrocarbon solvent	64742-94-5	30-50 %w/w

2. HAZARDOUS IDENTIFICATIONS:

EMERGENCY OVERVIEW

HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS

Classified as hazardous according to the criteria of NOHSC

Not Classified as Dangerous Goods for Land Transport

Potential Health Effects:

Irritating to eyes and skin. May cause lung damage if aspirated. Inhalation may irritate respiratory system.

RISK PHRASES:

R65: Harmful: may cause lung damage if swallowed.
R20/21/22: Harmful by inhalation, in contact with the skin and if swallowed.
R36/38: Irritating to eyes and skin.
R50: Very toxic to aquatic organisms.

SAFETY PHRASES:

S2: Keep out of the reach of children.

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. Rinse skin immediately with plenty of water for 15-20 minutes. Call the Poisons Information Centre or doctor for treatment advice.

INGESTION: Immediately call the Poisons Information Centre or doctor. 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: Remove 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 an attending physician. If lavage is performed, suggest endotracheal and/or esophageal 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: 73°C (PMCC)

COMBUSTIBLE: C1

FLAMMABLE LIMITS

LFL: 0.9%

UFL: 6.0%

EXTINGUISHING MEDIA: Carbon dioxide, dry chemical, foam, and/or water fog.

FIRE AND EXPLOSION HAZARDS: Combustible liquid. Moderate risk of an explosion from this product if involved in a fire. If product is involved in a fire it may produce toxic and corrosive mixtures in confined spaces.

FIRE-FIGHTING EQUIPMENT: Wear safety boots, non-flammable overalls, gloves, hat, goggles, and self contained breathing apparatus. All skin areas should be covered. Ensure that no spillage enters drains or water sources.

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. Harmful if swallowed or inhaled. 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: Picloram isooctyl ester: None established. For the acid, NOHSC TWA 10 mg/m³. Triclopyr acid: Dow AgroSciences Industrial Hygiene Guide is 2 mg/m³ as acid equivalent, 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

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SKIN PROTECTION: When prolonged or frequently repeated contact could occur, use protective clothing impervious to this material. Selection of specific items such as face shield, boots, apron, or full-body suite will depend on operation.

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. The following should be effective types of air-purifying respirators: organic vapour cartridge.

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

9. PHYSICAL AND CHEMICAL PROPERTIES:

APPEARANCE: Brown liquid

ODOUR: Aromatic

SOLUBILITY IN WATER: Insoluble

pH: 4.4 (1% solution)

VAPOR PRESSURE: 375 mmHg @ 38°C (solvent);
Picloram IOE negligible; Tricopyr BEE 10×10^5 mm Hg @ 33 °C

BOILING POINT: 183 – 210°C (solvent)

SPECIFIC GRAVITY: 107 g/mL @ 20°C

% VOLATILE BY VOLUME: Expected to be low @100°C

10. STABILITY AND REACTIVITY:

STABILITY: Combustible. Stable under normal storage conditions.

INCOMPATIBILITY: (specific materials to avoid) Acid, base and oxidizing materials

HAZARDOUS DECOMPOSITION PRODUCTS: Nitrogen oxides and hydrogen chloride may be formed under fire conditions.

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 likely to heal readily.

SKIN: Prolonged contact may cause skin irritation with local redness. Prolonged or frequently repeated 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 LD₅₀ for skin absorption in rabbits is >2000 mg/kg.

INGESTION: Low toxicity if swallowed. The oral LD₅₀ for rats is >2000. If aspirated (liquid enters the lung), may cause lung damage or even death due to chemical pneumonia.

INHALATION: Excessive exposure may cause irritation to upper respiratory tract (nose and throat). The aerosol LC₅₀ for rats is >5 mg/L for 4 hours.

SYSTEMIC (OTHER TARGET ORGAN) EFFECTS:

Excessive exposure may cause liver, kidney and blood effects. Signs and symptoms of excessive exposure may be anesthetic or narcotic effects.

CANCER INFORMATION: Picloram and tricopyr did not cause cancer in laboratory animals. The solvent contains naphthalene, which has caused cancer in some laboratory animals. An increase in lung tumors was observed in female, but not male, mice exposed to naphthalene by inhalation for two years. Limited oral studies in rats were negative.

TERATOLOGY (BIRTH DEFECTS): For tricopyr and picloram, birth defects are unlikely. Exposures having no effect on the mother should have no effect on the fetus. Did not cause birth defects in animals; other effects were seen in the foetus only at doses which caused toxic effects to the mother. The solvent did not cause birth defects or any other foetal effects in laboratory animals.

REPRODUCTIVE EFFECTS: Picloram, in animal studies, has been shown not to interfere with reproduction. Tricopyr, in laboratory animal studies - effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals.

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MUTAGENICITY: For the components tested, animal genetic toxicity studies were negative. For triclopyr and picloram, in-vitro genetic toxicity studies were negative.

methods in compliance with applicable regulations. If the material as supplied becomes a waste, follow all applicable regional, national and local laws and regulations.

12. ECOLOGICAL INFORMATION:

ENVIRONMENTAL DATA:

MOVEMENT & PARTITIONING:

Based largely or completely on information for triclopyr and picloram.

Bioconcentration potential is moderate (BCF is between 100 and 3000 or Log Pow 3 and 5).

DEGRADATION & PERSISTENCE:

Based on information for triclopyr.

Based on the stringent 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.

The photolysis half-life in water is 6.6 days.

Based on information for picloram.

The photolysis half-life in water is 70.6 minutes.

The photolysis half-life in soil is 115 days.

The hydrolysis half-life is 18.4 hours to 61.5 days.

ECOTOXICOLOGY:

Based on information for triclopyr BEE.

Material is highly toxic to aquatic organisms on an acute basis (LC₅₀ or EC₅₀ is between 0.1 and 1 mg/L in most sensitive species).

Based on information for picloram.

Material is moderately toxic to aquatic organisms on an acute basis (LC₅₀ or EC₅₀ is between 1 and 10 mg/L in most sensitive species).

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

14. TRANSPORT INFORMATION:

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

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

SHIPPING NAME: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (triclopyr). Marine Pollutant

15. REGULATORY INFORMATION:

APVMA APPROVAL NUMBER: 46640

POISON SCHEDULE: 6

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.

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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.

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.

AS/NZS 1716 - 1994 Respiratory protective devices.

Australian Dangerous Goods Code

NOHSC Hazardous Substances Information System.

Replaces version dated: 4 April 2007

Sections amended: 9

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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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