MATERIAL SAFETY DATA SHEET

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

PRODUCT: CONCLUDE* HERBICIDE

Effective Date: 4 April 2008
Product Code: 115358

1. PRODUCT AND COMPANY IDENTIFICATION:

PRODUCT: Conclude* Herbicide

PURPOSE: For the control of weeds as per label

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 sccording to the criteria of NOHSC

Not Classified as Dangerous Goods for Land Transport (see Section 14)

The full properties of this substance have not been determined. A precautionary approach in handling this substance is recommended.

Potential Health Effects: May cause eye and skin irritation.

RISK PHRASES:
R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

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.
S60: This material and its container must be disposed of as hazardous waste.
S61: Avoid release to the environment. Refer to special instructions in Section 6,7, 13.

3. COMPOSITION/INFORMATION ON INGREDIENTS:

Ingredient	CAS #	Content
MCPA 2-EHE	29450-45-1	53.8 %
Florasulam	145701-23-1	0.7%
Propylene Glycol	57-55-6	<10%
Balance not individually contributing to the hazard classification		>55%

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, 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: Immediately call the Poisons Information Centre or doctor 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 or an ambulance, 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 the symptoms and the clinical condition of the patient. Have the Safety

Data Sheet, and if available, the product container or label with you when calling the Poisons Information Centre or doctor, or going for treatment.

5. FIRE FIGHTING MEASURES:

FLASH POINT: >100°C

COMBUSTIBLE: C1

FLAMMABLE LIMITS
LFL: Not determined
UFL: Not determined

EXTINGUISHING MEDIA: Water fog or fine spray, dry chemical, CO_2, or foam.

FIRE FIGHTING PROCEDURES: Keep people away. Isolate fire area and deny unnecessary entry. Contain fire water run-off if possible. Fire water run-off, if not contained may cause environmental damage. Review the "Accidential Release Measures" and the "Ecological Information" sections of this MSDS.

FIRE AND EXPLOSION HAZARDS: This material will not burn until the water has evaporated. Residue can burn.

HAZARDOUS COMBUSTION PRODUCTS: Under fire conditions some components of this product may decompose. The smoke may contain unidentified toxic and/or irritating compounds. Combustion products may include and are not limited to: hydrogen chloride, carbon monoxide, and carbon dioxide.

FIRE-FIGHTING EQUIPMENT: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, pants, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with SCBA. If this is not available, wear full chemical resistant clothing with SCBA and fight fire from a remote location. For protective equipment in post-fire or non-fire clean up situations, refer to the relevant sections.

HAZCHEM: 2X

6. ACCIDENTAL RELEASE MEASURES:

ACTION TO TAKE FOR SPILLS/LEAKS: Contain spilled material if possible. Absorb small spills in a material such as clay, dirt, or sand. Sweep up. Collect in suitable and properly labeled containers. Dike the area of large spills and report them to Dow AgroSciences at 1800-033-882. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection. Prevent from entering into soil, ditches, sewers, waterways, and/or groundwater. See Section 12, Ecological Information.

7. HANDLING AND STORAGE:

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

HANDLING: Keep out of reach of children. Do not swallow. Avoid breathing vapour or mist. Avoid contact with eyes, skin, and clothing. Use with adequate ventilation. Wash thoroughly after handling.

STORAGE: Store in a dry place. Store in original container. Keep container tightly closed when not in use. Do not store near food, foodstuffs, drugs or potable water suppliles.

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:
Propylene glycol: TWA 150ppm. 474 mg/m^3 (particulates & vapour); 10 mg/m^3 (particulates only) (NOHSC).

ENGINEERING CONTROLS: Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. 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 protective equipment chemically resistant to this material. Gloves and boots should made of materials such as butyl rubber, chlorinated polyethylene, ethyl vinyl alcohol laminate ("EVAL"), natural rubber ("latex"), neoprene, nitrile/butadiene rubber ("nitrile" or "NBR"), polyvinyl chloride ("PVC" or "vinyl"), polyethylene, or viton (See AS/NZS 2161.10). Wear cotton or chemically resistant overalls buttoned to the neck and wrist. Remove contaminated clothing immediately, wash skin area with soap and water, and launder clothing before reuse or dispose of properly.

RESPIRATORY PROTECTION: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions no respiratory protection should not be needed; however, if discomfort is experienced, use an approved air-purifying respirator. The following should be effective types of air-purifying respirators: organic vapor cartridge with a particulate pre-filter.

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

9. PHYSICAL AND CHEMICAL PROPERTIES:

APPEARANCE: Off-white liquid
ODOUR: Mild
DENSITY: 1.04 g/mL
pH: 5.5
SOLUBILITY IN WATER: Emulsion
VAPOUR PRESSURE: Not determined

10. STABILITY AND REACTIVITY:

STABILITY: Thermally stable at typical use temperatures.

CONDITIONS TO AVOID: Can coagulate if frozen. Active ingredient decomposes at elevated temperatures.

INCOMPATIBILITY: (specific materials to avoid) Avoid contact with: acids, bases, oxidizers. Addition of chemicals may cause phase separation.

HAZARDOUS DECOMPOSITION PRODUCTS: Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: carbon monoxide, carbon dioxide, and hydrogen chloride.

HAZARDOUS POLYMERIZATION: Will not occur.

11. TOXICOLOGICAL INFORMATION:

POTENTIAL HEALTH EFFECTS:

EYE: May cause slight temporary eye irritation. Corneal injury is unlikely.

SKIN: Brief contact may cause moderate skin irritation with local redness. Prolonged skin contact is unlikely to result in absorption of harmful amounts. The dermal LD_{50} has not been determined. Based largely or completely on information for similar material(s), the dermal LD_{50} for rats is >5000 mg/kg.

INGESTION: Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury. Single dose Oral LD_{50} has not been determined. Based largely or completely on information for similar material(s), the oral LD_{50} for rats is >3000 mg/kg.

INHALATION: No adverse effects are anticipated from single exposure to mist. The LC_{50} has not been determined. Based largely or completely on information for similar material(s), the aerosol 4 hour LC_{50} was >5 mg/L in rats.

SYSTEMIC (OTHER TARGET ORGAN) EFFECTS: For similar active ingredient(s), MCPA (2-methyl-4-chlorophenoxyacetic acid), in animals, effects have been reported on the following organs: blood, kidney, liver, and testes. For florasulam effects have been reported in laboratory animals for the kidney . In rare cases, repeated excessive exposure to propylene glycol may cause central nervous system effects.

CANCER INFORMATION: For similar active ingredient(s), MCPA (2-methyl-4-chlorophenoxyacetic acid), florasulam, and for the solvent(s), did not cause cancer in laboratory animals.

TERATOLOGY (BIRTH DEFECTS): For similar active ingredient(s). MCPA (2-methyl-4-chlorophenoxyacetic acid). Has caused birth defects in laboratory animals only at doses toxic to the mother. For the active ingredient. Florasulam. Did not cause birth defects or other effects in the foetus even at doses which caused toxic effects in the mother.

REPRODUCTIVE EFFECTS: For similar active ingredient(s). MCPA (2-methyl-4-chlorophenoxyacetic acid), for the active ingredient florasulam, and for the solvent, in animal studies, did not interfere with reproduction.

MUTAGENICITY: For all components, in-vitro and animal genetic toxicity studies were negative.

12. ECOLOGICAL INFORMATION:

ENVIRONMENTAL DATA:

MOVEMENT & PARTITIONING:
Based largely or completely on information for salts and esters of MCPA.
Expected to be relatively immobile in soil (Koc >5000).
Bioconcentration potential is high (BCF >3000 or Log Pow between 5 and 7).
Based largely or completely on information for florasulam.
Bioconcentration potential is low (BCF <100 or Log Pow <3).
Based largely or completely on information for propylene glycol.
Potential for mobility in soil is very high (Koc between 0 and 50).
Bioconcentration potential is low (BCF <100 or Log Pow <3).

DEGRADATION & PERSISTENCE:
Based largely or completely on information for salts and esters of MCPA.
No relevant information found.
Based largely or completely on information for florasulam.
Material is expected to biodegrade only very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.
Based largely or completely on information for propylene glycol.
Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.
Biodegradation may occur under anaerobic conditions (in the absence of oxygen).

ECOTOXICOLOGY:
Based largely or completely on information for salts and esters of MCPA.
Material is very toxic to aquatic organisms (LC_{50} or EC_{50} is below 1 mg/L in most sensitive species).
Material is practically non-toxic to birds on a dietary basis (LC_{50} >5000 ppm).
Material is practically non-toxic to birds on an acute basis (LD_{50} >2000 mg/kg).
Based largely or completely on information for florasulam.
Material is very toxic to aquatic organisms (LC_{50} or EC_{50} is below 1 mg/L in most sensitive species).
Material is slightly toxic to birds on an acute basis (LD_{50} between 501 and 2000 mg/kg).
Material is practically non-toxic to birds on a dietary basis (LC_{50} >5000 ppm).
Based largely or completely on information for propylene glycol.
Material is not classified as dangerous to aquatic organisms (LC_{50} or EC_{50} >100 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 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 dangerious 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. (contains florasulam and MCPA ethylhexyl ester)

15. REGULATORY INFORMATION:

APVMA APPROVAL NUMBER: For use under Permit 10318

POISON SCHEDULE: S6

16. OTHER INFORMATION:

Glossary
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).
EC_{50}: 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)**.**
LC_{50} - Lethal Concentration 50%. A concentration of chemical in air or water that will kill 50% of the test organisms.
LD_{50} - 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 9monomers) 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.
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
AS/NZS 2161.10 - 2005 Occupational protective gloves - Part 10.1: Protective gloves against chemicals and micro-organisms.
NOHSC Hazardous Substances Information System.

VERSION CONTROL
Version: New
Product Number: GF-2075

FOR FURTHER PRODUCT INFORMATION CALL DOW AGROSCIENCES CUSTOMER SERVICE REPRESENTATIVES TOLL FREE 1800 700 096 DURING BUSINESS HOURS.

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Dow AgroSciences Australia Ltd.
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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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