1. PRODUCT AND COMPANY IDENTIFICATION:

PRODUCT: Tordon™ 75D 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 Numbers:
Australia: 1800 033 882
Global: +61 3 9663 2130
(24 hours) (EMERGENCIES ONLY)

Transport Emergency Only Dial 000

2. HAZARDOUS IDENTIFICATIONS:

EMERGENCY OVERVIEW

Classified as hazardous according to the criteria of NOHSC
Classified as Dangerous Goods - see Section 14 for land transport exemption.

RISK PHRASES:
R36/38: Irritating to eyes and skin.
R43: May cause sensitization by skin contact
R52: Harmful to aquatic organisms.

SAFETY PHRASES:
S2: Keep out of the reach of children.
S23: Do not breathe spray.
S24/25: Avoid contact with skin and eyes.
S29/35: Do not empty into drains; dispose of this material and its container in a safe way.

3. COMPOSITION/INFORMATION ON INGREDIENTS:

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS #</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-D TIPA</td>
<td>32341-80-3</td>
<td>47.2%</td>
</tr>
<tr>
<td>Picloram TIPA</td>
<td>6753-47-5</td>
<td>7.5%</td>
</tr>
<tr>
<td>Balance not contributing to hazard</td>
<td></td>
<td>45.3%</td>
</tr>
</tbody>
</table>

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: Immediately flush eyes with water; remove contact lenses, if present, after the first 5 minutes and then continue flushing eyes for at least 15 minutes. Obtain medical attention without delay, preferably from an ophthalmologist.

SKIN: Remove material from skin immediately by washing with soap and plenty of water. Remove contaminated clothing and shoes while washing. Seek medical attention if irritation persists. Wash clothing before reuse. Discard items which cannot be decontaminated, including leather articles such as shoes, belts and watchbands.

INGESTION: If swallowed, seek medical attention. Do not induce vomiting unless told to do so by medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: Move person to fresh air. If not breathing, give artificial respiration, if by mouth to mouth use rescuer protection (pocket mask, etc). If breathing is difficult, oxygen should be administered by qualified personnel. Call a doctor or transport to a medical facility.

NOTE TO DOCTOR: 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: >93.3°C

COMBUSTIBLE: C1

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TORDON™ 75D HERBICIDE

Emergency Phone: 1800-033-882 (24 hrs)
+61 3 9663 2130 (24 hrs)

Dow AgroSciences Australia Ltd.
Frenchs Forest NSW 2086

Effective Date: 4 April 2012
Product Code: 41041

FLAMMABLE LIMITS
LFL: Not determined
UFL: Not determined

EXTINGUISHING MEDIA: Water fog or fine spray, dry chemical, carbon dioxide fire extinguishers or Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.

FIRE AND EXPLOSION HAZARDS: During a fire, smoke may contain the original material in addition to combustion products of varying composition, which may be toxic and/or irritating. Combustion products may include and are not limited to: Nitrogen oxides, Hydrogen chloride. Carbon dioxide. Carbon monoxide.

FIRE-FIGHTING EQUIPMENT: Wear positive-pressure, self-contained breathing apparatus (SCBA) and protective fire fighting clothing (including fire fighting helmet, coat, trousers, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance. Burning liquids may be extinguished by dilution with water. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage.

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: Contain and absorb small spills with a proprietary absorbent suitable for chemical spills or inert materials 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. Do not use water to clean up.

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, 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:
2,4-D: ACGIH TLV and OSHA PEL are 10 mg/m³. ACGIH classification is A4.
Picloram: ACGIH TLV is 10 mg/M³, A4. OSHA PEL is 10 mg/m³ total dust, 5 mg/m³ respirable.

ENGINEERING CONTROLS: Use engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use only with adequate ventilation. Local exhaust ventilation may be necessary for some operations.

RECOMMENDATIONS FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS:

EYE/FACE PROTECTION: Use chemical goggles. Eye wash fountain should be located in the immediate work area.

SKIN PROTECTION: Wear clean, body-covering clothing. Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. Use chemical resistant gloves classified under standard...
AS/NZS 2161.10: Protective gloves against chemicals and micro-organisms.

**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. In misty atmospheres, use an approved particulate 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:** Clear brown liquid

**ODOUR:** None

**pH:** 6.8

**DENSITY:** 1.2 g/mL

**BOILING POINT:** 100°C

**VAPOUR PRESSURE:** <1 x10^-7 mm Hg @ 14-28°C (2,4-D TIPA), 2x10^-7 mm Hg, 25°C (picloram).

**SOLUBILITY IN WATER:** Miscible with water

**SPECIFIC GRAVITY:** 1.185

**10. STABILITY AND REACTIVITY:**

**STABILITY:** Stable under normal storage conditions. Exposure to elevated temperatures can cause product to decompose.

**INCOMPATIBILITY:** (specific materials to avoid) Oxidizers, strong acids, and strong bases.

**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, hydrogen chloride and nitrogen oxides.

**HAZARDOUS POLYMERIZATION:** Will not 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 moderate corneal injury.

**SKIN:** Brief contact is essentially non-irritating to skin. Prolonged contact may cause slight skin irritation with local redness. Prolonged skin contact is unlikely to result in absorption of harmful amounts. The dermal LD50 has not been determined. For the active ingredient: LD50, rat >2000 mg/kg. For the active ingredient: skin contact may cause an allergic skin reaction in a small proportion of individuals.

**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 LD50 has not been determined. Estimated LD50, rat >1,500 mg/kg.

**INHALATION:** Brief exposure (minutes) is not likely to cause adverse effects. Prolonged excessive exposure to mist may cause adverse effects. The LC50 has not been determined. Estimated LC50, Aerosol, Rat >2 mg/L.

**SYSTEMIC (OTHER TARGET ORGAN) EFFECTS:** In animals, effects have been reported on the following organs: testes. For the major component(s), in animals, effects have been reported on the following organs: eye, gastrointestinal tract, kidney, liver, muscles and thyroid gland. Observations in animals include nausea and/or vomiting.

**CANCER INFORMATION:** Picloram did not cause cancer in laboratory animals. Various animal cancer tests have shown no reliably positive association between 2,4-D exposure and cancer. Epidemiology studies on herbicide use have been both positive and negative with the majority being negative.

**TERATOLOGY (BIRTH DEFECTS):** 2,4-D acid triisopropanolamine salt has caused birth defects in laboratory animals only at doses producing severe toxicity in the mother. Picloram did not cause birth defects or any other foetal effects in laboratory animals.
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REPRODUCTIVE EFFECTS: For 2,4-D Acid, in laboratory animals, excessive doses toxic to the parent animals caused decreased weight and survival of offspring. Picloram, in laboratory animals, did not interfere with reproduction.

MUTAGENICITY: For the active ingredients, in-vitro and animal genetic toxicity studies were negative. Based largely or completely on information for the remaining components: genetic toxicity studies on tested components were predominantly negative.

12. ECOLOGICAL INFORMATION:

ENVIRONMENTAL DATA:

MOVEMENT & PARTITIONING: Based on information for trisopropanolamine.

No bioconcentration is expected because of the relatively high water solubility.

Based on information for picloram.

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

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

DEGRADATION & PERSISTENCE: Based on information for picloram.

The atmospheric half-life is 12.21 days.

The photolysis half-life in water is 2.3-9.58 days. Under aerobic soil conditions the half-life is 167-513 days.

ECOTOXICOLOGY: Material is harmful to aquatic organisms on an acute basis (LC50 between 10 and 100 mg/L in most sensitive species).

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

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:

DANGEROUS GOODS CLASSIFICATION
ROAD AND RAIL TRANSPORT: Not dangerous goods under the ADG code when being transported in IBCs or other receptacles < 500 L (kg), (Special Provision AU01).

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. (2,4-D).
Marine Pollutant: Yes

HAZCHEM: ●2X

15. REGULATORY INFORMATION:

APVMA APPROVAL NUMBER: 40487

POISON SCHEDULE: S5

16. OTHER INFORMATION:

Glossary
ACGIH: American Conference of Governmental Industrial Hygienists.

Advisory Committee on Chemicals scheduling: replaces the National Drugs and Poisons Scheduling Committee. Scheduling is a classification system that controls how medicines and chemicals are accessible to consumers

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).

BOD: Biochemical oxygen demand. The amount of oxygen required by aerobic microorganisms to decompose the organic matter in a sample of water, such as that polluted by sewage. It is used as a measure of the degree of water pollution. Also called biological oxygen demand.
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. Kₒₒ: 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 doses of a chemical that will kill 50% of the test animals receiving it.

NIOSH: American national Institute of Occupational Safety and Health, a federal agency which conducts research on occupational safety and health questions and recommends new standards.


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.

Pₒₒ: 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.

Safe Work Australia: independent statutory agency with primary responsibility to improve work health and safety and workers' compensation arrangements across Australia. Previously Australian Safety and Compensation Council.

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 workday.

References

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

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