



SAFETY DATA SHEET

DESICATE® II

Date of Issue: 19 October 2011

1. SUBSTANCE/PREPARATION AND COMPANY IDENTIFICATION

Chemical name of active ingredient(s): 240g/litre endothal as the monoamine salt

Recommended use: For destruction of potato haulms on table and seed potatoes.

Supplier: Etec Crop Solutions Limited
PO Box 51582, Pakuranga
Auckland
Phone 0800 100 325

Emergency telephone number: 0800 Poison (0800 764 766) 24 Hours

2. HAZARDS IDENTIFICATION

Hazard Classification: 6.1C 6.9B, 8.2C, 8.3A, 9.1A, 9.2A, 9.3B

Required identification Details: May be harmful if swallowed
Presumed to/may cause organ damage from repeated oral exposure at high doses.
Corrosive – may cause burns to skin.
Corrosive – may cause eye damage.
Toxic to aquatic organisms.
Very toxic to the soil environment.
Toxic to terrestrial vertebrates.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance/preparation Information on hazardous ingredients

| Common name | CAS No | % |
|---|------------|-----|
| Mono (n,N-dimethylalklamine) salt of endothal | 66330-89-9 | 53% |

4. FIRST-AID MEASURES

Description of necessary first aid measures:

Effects and symptoms

First-aid measures

Inhalation: Remove victim from contaminated atmosphere without

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| Ingestion: | exposing yourself. If person is not breathing, give artificial respiration, preferably mouth to mouth. Get medical attention. Do NOT induce vomiting. Drink promptly a large quantity of milk/egg whites/gelatin solution; if these are not available drink large quantities of water. Avoid alcohol. |
| Skin contact: | Remove contaminated clothing and wash affected areas thoroughly with soap and water. If symptoms persist, call a doctor. |
| Eye contact: | Wash immediately with water for at least 15 minutes |
| Notes to a physician: | |
| Workplace facilities: | No special facilities required. Standard emergency equipment must be available. |
| Required Instructions: | Avoid contact with skin and eyes and inhalation of concentration or spray mist. When mixing or applying, wear protective clothing including face shield, impervious gloves and footwear. If clothing becomes contaminated with product, remove clothing immediately. DO NOT eat, drink or smoke while using. Wash hands and exposed skin thoroughly with soap and water before meals and after work. |
| | In case of poisoning by any exposure route contact the National Poisons and Hazardous Chemicals Information Centre; Phone 0800 764 766, 0800 POISON. |

5. FIRE-FIGHTING MEASURES

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| HAZCHEM Code: | 2X |
| Extinguishing media : | Water spray, foam, carbon dioxide (CO ₂), dry powder. |
| Hazardous thermal (de)composition products: | The product itself does not burn. In the event of fire the following may be released: Carbon monoxide (CO) Nitrogen oxides (NO _x) |
| Protection of fire-fighters: | When fighting a major fire, wear an air-supplied respirator. Wear protective equipment. |

6. ACCIDENTAL RELEASE MEASURES

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| Personal precautions: | Ensure suitable personal protection during removal of spillages – eye protection, chemically resistant gloves, boots and overalls. |
| Environmental precautions: | Washings must be prevented from entering surface water drains or waterways. |
| Methods for cleaning up: | Keep all bystanders away. Wear goggles, half face-piece respirator with combined dust and vapour cartridge, full length clothing and PVC gloves. Contaminated material must be disposed of in accordance with all local authority requirements. For quantities up to 50L of product, bury in a secure approved landfill site. |

For quantities greater than 50L seek advice from the manufacturer (use emergency contact number) before attempting disposal. Contain in a secure location until disposal method is established.

Decontaminate the spill area with detergent and water and rinse with the smallest volume of water practicable.

Procedure for Disposal:

1 Triple-rinse containers with water. Add rinsings to spray tank. DO NOT dispose of undiluted chemicals on site.

2 Submit clean, empty container for recycling through Agrecovery. If this is not possible, burn empty containers if circumstances, especially wind direction, allow. Do not burn unless in a suitable incinerator.

3 Product or unused spray mix should be disposed of according to label instructions.

7. HANDLING AND STORAGE

Handling:

Avoid contact with skin and eyes and inhalation of concentrate or spray mist. When using, do not eat, drink or smoke. Wash face and hands before eating, drinking or smoking.

Conditions for Safe Storage and Store

Sire requirements:

Store in a cool, dry, well ventilated place and protect from sunlight. Keep from freezing; material may coagulate.

Packaging materials:

Store in original container, tightly closed, away from foodstuffs, drink and animal feeding-stuffs.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering measures

Ventilation specification:

Use in well ventilated areas.

Personal Protective Equipment

Detail specifications for equipment:

Where suitable protective clothing.

Respiratory system:

Where insufficient ventilation, use suitable respiratory protection.

Skin and body:

Hands:

Wear suitable protective gloves (eg. Polyvinyl chloride –PVC). After contamination with product change the gloves immediately.

Eyes:

Chemical goggles/face protection.

General hygiene:

Do not get in eyes, on skin or on clothing.

Avoid inhaling aerosols and vapours. Avoid contact with eyes and skin. Store work clothes and street clothes separately.

Wash hands before breaks and at the end of work. Change contaminated protective clothing. Keep away from food, drinks and tobacco.

9. PHYSICAL AND CHEMICAL PROPERTIES

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| Physical State: | Liquid |
| Colour: | Yellowish brown. |
| Odour: | Faint odour |
| pH: | Not available. |
| Vapour Pressure: | 9.45 x 10 ⁻⁶ Torr (endothal amine salt) |
| Viscosity: | 100 cps at 25° |
| Boiling Point: | 100°C |
| Freezing/melting point: | <0° |
| Solubility: | >50g/100ml (amine salt) |
| Specific gravity or density: | 1.044 at 25° |
| Volatile component: | 47% |

10. STABILITY AND REACTIVITY

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| Stability: | Stable under standard conditions. |
| Conditions to avoid: | |
| Materials to avoid: | Materials that react with water. |

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| Hazardous decomposition Products: | Extreme temperatures may convert endothal product to endothal anhydride, a strong vesicant, causing blistering of eyes, mucous membranes and skin. |
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11. TOXICOLOGICAL INFORMATION

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| Acute toxicity – Oral : | Moderately toxic to rats (LD50 233.4 mg/kg) |
| Acute toxicity - Dermal : | Moderately toxic to rabbits (LD50 480.90 mg/kg) |
| Acute toxicity – Inhalation: | Slightly toxic to rats (4-h LC50 0.7 mg/l) |
| Skin irritation : | Severely irritating to rabbits |
| Eye irritation: | Severely irritating to rabbits. |
| Sensitization : | No skin allergy was observed in guinea pigs following repeated exposure. |
| Other information : | 7-Oxabicyclo [2.2.1] heptane-2,3dicarboxylic acid (technical active ingredient) Intentional swallowing of 40 ml of endothal led to death within 12 hours. Skin allergy was observed in guinea pigs following repeated exposure. Repeated dietary administration (via gelatin capsules) produced vomiting, diarrhea, sluggish, movements and liver, kidney and blood effects in dogs. Long-term dietary administration to rats and mice produced in the glandular stomach. High mortality rates and intestinal tumours considered to be secondary to the effects in the stomach were observed in mice. Long-term application to the skin of |

mice produced no tumours. No birth defects were observed in the offspring of rats given endothal orally during the pregnancy even at dosages that produced adverse effects on the mothers. Skeletal anomalies were observed in the offspring of rabbits and mice given endothal orally during pregnancy but only in dosages which produced adverse effects in the mothers. Endothal produced no genetic changes in standard tests using bacterial and animal cells or animals.

12. ECOLOGICAL INFORMATION

Ecotoxicity Fish

Highly toxic to rainbow trout (96-hr LC 50 1.7 mg/L); fathead minnow (96-hr LC50 0.94 mg/l), golden shiner (120-hr LC50 0.32 mg/l), and scud (96-hr TL50 0.48 mg/l). It is moderately toxic to mussels (48-hr LC50 4.85 mg/l). The 7-day LC50 for Ceriodaphnia was 0.18-0.19 mg/L and .304 mg/L for fathead minnow.

Daphna magna

Highly toxic - 48-hr LC50 0.36 mg/l),

7-Oxabicyclo [2.2.1] heptane-2,3dicarboxylic acid (technical active ingredient)

Endothal is slightly toxic to bluegill sunfish (96-hr LC50 77 mg/l), rainbow trout (96-hr LC50 49 mg/l), Daphnia magna (48-hr LC50 92 mg/l), eastern oysters (96-hr LC50 54 mg/l), mysid shrimp (96-hr LC50 39 mg/l) and fiddler crab (96-hr LC50 85.1 mg/l). It is practically non-toxic to sheepshead minnow (96-hr LC50 110 mg/l) and common mummichog (96-hr LC50 213.9 mg/l).

Endothal has an 8-day LC50 of >5,000 ppm (bobwhite quail and mallard ducklings), a 21-day LD50 of 111 mg/kg (mallard ducks), a 30 day MATC of 19 mg/L (fathead minnows) and a 21-day MATC of 6.7 mg/L (Daphnia magna). No adverse effects were observed in mallad ducks and bobwhite quail following repeated (20 weeks) administration in the diet.

Chemical Fate Information:

7-Oxabicyclo [2.2.1] heptane-2,3dicarboxylic acid (technical active ingredient)

No degradation was observed in irradiated or dark water during a 30-day test period at pH 7 or 9. Rapid degradation was observed in irradiated but not dark water at pH5 (half-life <24 hours). Endothal adsorbed readily from aqueous solution on to Crosby silt loam.

Endothal is not expected to bioaccumulate with bioaccumulation factors

(BDF) of 10 for mosquito fish and 0.003-0.008 for bluegills.

13. DISPOSAL CONSIDERATIONS

Methods of disposal :

Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide or rinsate is a violation of law. If these wastes cannot be disposed of by use according to label instructions, contact your local pesticide or environmental control agency.

14. TRANSPORT INFORMATION**International transport regulations:****UN number: 2902****Land - Road/Railway****Proper shipping name : Pesticide, liquid, toxic, n.o.s.**
Hazard Class (DG): 6
Packing Group: III

15. REGULATORY INFORMATION**ACVM Registered Number: P5647**
HSNO Approval Code: HSR000448

16. OTHER INFORMATION**Additional information:***Disclaimer*

This Safety Data Sheet is based on the most recent information available. To the extent permitted by law, users of this information accept that neither the manufacturer, Etec Crop Solutions Limited as distributor, nor any other distributor have any liability or responsibility whatsoever for any loss, damage or injury whether in contract or tort, whether direct, indirect or consequential howsoever arising in connection with the supply of these information.

Trademarks

Desicate II is a registered trademark of United Phosphorus

Miscellaneous

Proper PPE and ventilation should be used when using high heat such as welding or oxy-acetylene torch cutting machinery that may have endothal residue.