**UNIVERSAL DACTHAL®**

**1. PRODUCT & COMPANY IDENTIFICATION**

**Product Name:** DACTHAL®

**UN No.:** Not regulated

**Supplier:** Universal Crop Protection (Pty) Ltd.

**Telephone:** (011) 396 2233

**Fax:** (011) 396 4666

**Website:** www.villacrop.co.za

**Emergency telephone:** (011) 396 2233

**24 Hr Emergency Numbers:**

- Bateleur: 083 1233 911 or
- (Client: Villa Crop Protection) 0860 333 911

**In case of Poisoning:**

- Tygerberg Poisoning Information Centre: (021) 931 6127
- Red Cross Poisoning Information Centre: (021) 689 5227
- Griffon Poison Information Centre: 082 446 8946

**2. COMPOSITION/INFORMATION ON INGREDIENTS**

**Common Name:** Chlorthal-dimethyl

**Chemical Name:** dimethyl 2,3,5,6-tetrachloro-1,4-benzenedicarboxylate

**CAS No.:** [2136-79-0]

**Chemical Family:** benzenedicarboxylic acid

**Chemical Formula:** C_{10}H_{6}Cl_{4}O_{4} (Mol.wt.:332.0)

**Formulation:** Chlorthal-dimethyl: 750 g/kg Wettable powder

**Use / Mode of Action:** Pre-emergence herbicide for control of annual grasses and some broadleaved weeds as indicated on label.

**Hazardous ingredients of toxicological concern:**

- **Inert:**
  - **Amorphous silicon dioxide** nuisance dust
  - **Hexachlorobenzene (trace)** carcinogen

- **Symbol:** Xi, Xn, N

- **Indication of danger:** Irritant, Harmful, Environmentally Dangerous

**RISK-PHRASE(S):** R 20/22, R 36/38, R 57

**3. HAZARD IDENTIFICATION**

**Toxicity class:** WHO (a.i) U; EPA (formulation) IV

**Likely routes of exposure:**

- Ingestion, skin and eye contact.

**Eye contact:**

The product may be mildly irritating.

**Skin contact:**

Contact with the skin may result in a mild irritation.

**Ingestion:**

Harmful if swallowed. Ingestion may cause an upset stomach.

**4. FIRST AID MEASURES AND PRECAUTIONS**

**Signs of chronic overexposure:**

May show evidence of liver and thyroid gland toxicity.

**Inhalation:**

Avoid inhaling the dust. If inhaled, immediately remove source of contamination or move victim to fresh air. If breathing has stopped, perform artificial respiration and administer oxygen. Avoid mouth-to-mouth resuscitation. Keep person warm and at rest.

**Skin contact:**

Remove contaminated clothing, shoes and leather goods immediately. Gently wipe off excess chemical. Wash skin gently and thoroughly with non-abrasive soap and large amounts of water until no evidence of chemical remains (approximately 15 to 20 minutes). If a rash or any of the symptoms of acute exposure appear, seek medical advice.

**Eye contact:**

Flush eyes immediately with large amounts of gently flowing cold water, occasionally lifting upper and lower lids, until no evidence of chemical remains (approximately 15 to 20 minutes). If irritation occurs and persists, get medical attention.

**Ingestion:**

Do not induce vomiting. Keep airways clear. Never give anything by mouth to an unconscious person. Seek medical attention immediately.

**Advice to physician:**

Treat symptomatically.

**5. FIRE FIGHTING MEASURES**

**Fire/Explosion hazard:**

Not explosive. Static discharge will not occur.

**Flash point:** Non-flammable

This is a non-combustible solid that will burn or decompose when kept directly in the flame (NFPA rating=0)

**Extinguishing agents:**

Extinguish fires with carbon dioxide, dry powder, or alcohol-resistant foam. Water spray can be used for cooling of unaffected stock, but avoid water coming in contact with the product. Use as little water as possible. Use spray or fog. Solid stream may cause spreading.
MATERIAL SAFETY DATA SHEET

7. HANDLING AND STORAGE REQUIREMENTS

Handling:
Harmful if swallowed. Avoid inhalation and contact with eyes and skin. Use with adequate ventilation. Do not handle broken packages without protective equipment. Wash hands before eating, drinking, chewing gum, smoking, or using the toilet. Remove clothing immediately if the product gets inside. Then wash skin thoroughly using a non-abrasive soap and put on clean clothing. Seek medical advice.
Do not apply directly to areas where surface water is present, or to intertidal areas below the mean high water mark. Water used to clean equipment must be disposed of correctly to avoid contamination.
Worker should shower at the end of each work day. Launder all clothing before it is re-used again.

Storage:
Store in its original container in dry, cool, well-ventilated area. Avoid excess heat. Not to be stored next to foodstuffs and water supplies.
Keep out of reach of children, uninformed persons and animals. Do not contaminate other pesticides and fertilizers.

Storage stability:
Stable for a period of 2 years under normal warehouse conditions.

8. EXPOSURE CONTROL/PERSONAL PROTECTION

It is essential to provide adequate ventilation. The measures appropriate for a particular worksite depend on how this material is used and on the extent of exposure. Ensure that control systems are properly designed and maintained. Comply with occupational safety, environmental, fire, and other applicable regulations.

PERSONAL PROTECTIVE EQUIPMENT:
Respirator:
An approved full-face respirator suitable for protection from spray or mists of pesticides is required. Limitations of respirator use specified by the approved agency and the manufacturer must be observed.

Clothing:
Employee must wear appropriate protective (impervious) clothing; boots, hat and equipment to prevent repeated or prolonged skin contact with this substance. Do not wear leather clothing.

Gloves:
Employee must wear appropriate chemical resistant protective gloves to prevent contact with this substance.

Eye protection:
The use of chemical resistant goggles or face shield.

6. ACCIDENTAL RELEASE MEASURES (Spillage)

Personal precautions:
Avoid contact with skin and eyes. Avoid inhaling dust. For personal protection see Section 8.

Occupational spill:
Do not touch-spilled material; stop leak if you can do it without risk. Keep out unprotected persons and animals.

For spills:
Soak up with absorptive material such as damp earth or sand or other suitable non-combustible absorbent material. Place the material into a clean, dry container and cover for subsequent disposal. In situations where product comes in contact with water, contain contaminated water for later disposal. Prevent material from spreading by damming in with absorptive material. Do not flush spilled material into drains. Keep spectators away and upwind.

To decontaminate spill area, tools and equipment, wash with a suitable solution (i.e. organic solvent, detergent bleach or caustic). Add the solution to the drums already collected. Label drums with its content and dispose it in accordance with local regulations.

Open burning or dumping of this material is prohibited. Do not get water inside containers.
### 9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Fine off-white to grey powder</td>
</tr>
<tr>
<td>Odour</td>
<td>Slightly aromatic</td>
</tr>
<tr>
<td>Boiling point</td>
<td>Decomposes at 360 – 370°C</td>
</tr>
<tr>
<td>Melting point</td>
<td>156°C (based on a.i)</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>0.21 mPa (2.5 x 10⁻⁶ torr @ 25°C)</td>
</tr>
<tr>
<td>Vapour density</td>
<td>Heavier than air</td>
</tr>
<tr>
<td>Flammability</td>
<td>Non-flammable</td>
</tr>
<tr>
<td>Solubility in water</td>
<td>Disperses in water</td>
</tr>
<tr>
<td>Solubility in other solvents</td>
<td>Soluble in aromatic hydrocarbons, chlorinated hydrocarbons, ketones and esters (tech).</td>
</tr>
<tr>
<td>pH</td>
<td>7 to 8</td>
</tr>
</tbody>
</table>

### 10. STABILITY AND REACTIVITY

#### Stability:
This product is stable under normal storage and use conditions. It will decompose at elevated temperatures (360 – 370°C).

#### Incompatibility:
Strong acids and bases will decompose the ester functions of Dacthal.

#### Hazardous decomposition:
This product may emit hazardous fumes of hydrogen chloride, carbon oxides and unidentified organic compounds when it is heated excessively or burned.

#### Hazardous polymerization:
This product will not polymerize.

### 11. TOXICOLOGICAL INFORMATION

#### Formulation (calculated):

- **Acute oral LD₅₀:**
  > 10000 mg/kg in rats.

- **Inhalation:**
  > 23 mg/l (4hr, nominal); > 5.7 mg/l (4hr, measured)

- **Acute skin irritation:**
  May cause mild irritation

- **Acute eye irritation:**
  May cause mild irritation (reversible).

- **Sensitization:**
  Not a skin sensitizer.

- **Teratogenicity:**
  No evidence of teratogenicity has been observed in laboratory testing.

- **Mutagenicity:**
  No evidence of mutagenicity has been observed in laboratory testing.

- **Carcinogenicity:**
  A contaminant, in DACTHAL®, hexachlorobenzene, has been found to be carcinogenic in several studies conducted for IARC and NTP. Dacthal has been classified by EPA as a Group C, possible carcinogen, based on increased incidence of thyroid tumours in both sexes of the rat and liver tumours in female rats and mice.

- **Reproductive toxicity:**
  No effects on reproductive performance only decreased pup and parental body weights were seen throughout two successive generations in the rat.

### 12. ECOLOGICAL INFORMATION

This pesticide is mildly toxic to fish and aquatic organisms. Do not apply directly to areas where surface water is present or to intertidal areas below the mean high water mark. Do not apply directly adjacent to potable water supplies. This pesticide is slightly toxic to honey bees.

#### Groundwater advisory:
Tetrachlorterephthalic acid, a breakdown product of DACTHAL®, is known to leach through the soil as a result of agricultural and turf uses and has been found in groundwater which may be used for drinking water. Users of DACTHAL® are advised not to apply the product on sand and loamy sand soil where the water table (groundwater) is close to the surface and where these soils are very permeable i.e. well drained.

### 13. DISPOSAL CONSIDERATION

#### Pesticide disposal:
Open dumping or burning of this pesticide is prohibited. Waste resulting from the use of this product cannot be reused or reprocessed. Never pour untreated waste or surplus products into public sewers or where there is any
danger of run-off or seepage into water systems. Do not contaminate rivers, dams or any other water sources with the product or used containers. Comply with local legislation applying to waste disposal.

Container disposal:
Completely empty bag into mixing equipment. Then dispose of empty bag in a sanitary landfill or by incineration. Prevent contamination of food, feedstuffs, drinking water and eating utensils. Comply with local legislation applying to waste disposal.

14. TRANSPORT INFORMATION

UN No.: Not regulated
Road Transport ADR/IRD: Not listed in ADR
Maritime Transport IMDG/IMO: Not regulated
IATA class: Not regulated
Packing group: Not applicable
Shipping name: Not applicable

15. REGULATORY INFORMATION

Symbol: Xi, Xn and N
Indication of danger: Irritant, Harmful, Environmentally Hazardous Substance

Risk phrases:
R 20/22 Harmful by inhalation and if swallowed.
R 36/38 Irritating to eyes and skin
R 57 Toxic to bees

Safety phrases:
S 1/2 Keep locked up and out of the reach of children.
S 24/25 Avoid contact with skin and eyes.
S 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
S 60 This material and its container must be disposed of as hazardous waste.

16. OTHER INFORMATION

Packing and Labelling:
Packed in 25 kg drums and labelled according to the South African regulations and guidelines.

Disclaimer:
The information on this sheet is not a specification; it does not guarantee specific properties. The information is intended to provide general guidance as to health and safety based upon our knowledge of the handling, storage use of the product. It is not applicable to unusual or non-standard uses of the product nor where instructions or recommendations are not followed.