



UNIVERSAL Crop Protection (Pty) Ltd  
Co. Reg. No.: 1983/008184/07

Subject: 2,4-D AMINE 480 SL  
Document no: 012UM  
Effective Date: August 1998  
Revision no: July 2015 (8)  
Product Code: H24D48/MU

## UNIVERSAL 2,4-D AMINE 480 SL

## MATERIAL SAFETY DATA SHEET

### 1. IDENTIFICATION OF THE SUBSTANCE

**Product Name:** 2,4-D AMINE 480 SL  
Herbicide  
**UN No.:** 3082  
**Supplier:** Universal Crop Protection (Pty) Ltd.  
PO Box 801,  
Kempton Park, 1620, South Africa  
**Telephone:** (011) 396 2233  
**Fax:** (011) 396 4666  
**Website:** [www.villacrop.co.za](http://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:**  
Western Cape Poisons Telephone Service: 0861 555 777  
Griffon Poison Information Centre: 082 446 8946

### 2. COMPOSITION / INFORMATION ON INGREDIENTS

**Common Name:** 2,4-D  
**Chemical Name:** (2,4-dichlorophenoxy) acetic acid (IUPAC)  
**CAS No.:** 94-75-7  
**Chemical Family:** aryloxyalkanoic acid / chlorinated phenoxy compound.  
**Chemical Formula:**  $C_8H_6Cl_2O_3$  (Mol. Wt.: 221.0).  
**Use:** Auxin type herbicide. Post emergence herbicide or plant growth regulator.  
**Formulation:** 2,4-D as dimethylamine salt: 580 g/l  
Water Soluble Liquid  
**Hazardous components:** 2,4-D (2,4-dichlorophenoxy)acetic acid AS THE 2,4-D-dimethylammonium salt  
**SYMBOLS:** Xn, Xi, N  
**RISK-PHASE(S):** R20/21/22, R36/37/38, R54

### 3. HAZARD IDENTIFICATION

**Toxicity class:** WHO (a.i): II; EPA (formulation): II  
**Likely routes of exposure:** Ingestion, Skin and Inhalation.  
**Ingestion:** Harmful. In case of over-exposure to product and excessive amounts are swallowed, may cause nausea, vomiting, sweating, headaches, muscle soreness, abdominal pain and loss of coordination. May cause burns of mouth, throat and oesophagus.  
**Skin contact:** Cause mild irritation.

**Eye contact:** Severe irritant.

**Inhalation:** Harmful. Vapour may be an irritant to the mucous membranes and respiratory tract.

### 4. FIRST AID MEASURES AND PRECAUTIONS

**Inhalation:** Remove source of contamination, or leave contaminated area to fresh air as rapidly as possible. Keep affected person warm and at rest. Treat symptomatically and supportively. Qualified personnel should perform administration of oxygen. Get medical attention immediately if effects persist.

**Skin contact:** If irritation occurs, remove contaminated clothing, shoes and leather goods (e.g. watchbands, belts). Gently wipe off excess chemical. Wash skin gently and thoroughly with water and non-abrasive soap. If irritation persists, seek medical advice immediately.

**Eye contact:** Immediately flush eyes with gently flowing lukewarm water for 15 minutes or until the product is removed, holding the eyelids open. Take care not to rinse contaminated water into the unaffected eye or onto the face. Seek medical attention.

**Ingestion:** Have victim rinse mouth thoroughly with water. Do not induce vomiting. If person is alert and conscious, give 2 to 3 glasses of water to drink. Seek medical advice immediately.

**Advice to physicians:** This product contains a phenoxy herbicide. There is no antidote. Treat symptomatically and supportively. Empty stomach by gastric lavage with activated charcoal, is advised. Follow with saline cathartic. Avoid oily laxatives.

### 5. FIRE FIGHTING MEASURES

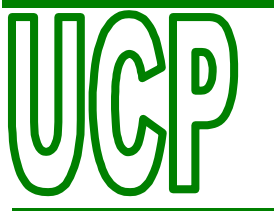
**Fire and explosion hazard:** The material does not burn or burns with difficulty. It is not explosive. The product is non-combustible.

**Flash point:** 95 °C.

**Hazardous decomposition products:** Decomposes on heating, emitting toxic fumes including those of hydrogen chloride and phosgene. Fire fighters to wear self-contained breathing apparatus if risk of exposure to products of decomposition.

**Extinguishing agents:** Not combustible. Use carbon dioxide, dry chemical powder, water fog (or fine water spray) or foam to extinguish fire. Water spray can be used for cooling of unaffected stock, but avoid water coming in contact with the product. Apply water as a fine mist or fog.

**Firefighting:** Isolate the fire area and evacuate downwind. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Contain fire control agents for later disposal. Use a recommended



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extinguishing agent for the type of surrounding fire. Avoid inhaling hazardous vapours. Do not scatter the material. Avoid pollution of waterways.

**Personal protective equipment:** Fire may produce emitting toxic fumes including those of hydrogen chloride and phosgene. Fire fighters and others that may be exposed should wear full chemical protective clothing and self-contained breathing apparatus.

### 6. ACCIDENTAL RELEASE MEASURES (SPILLAGE)

**Personal precautions:** Avoid contact with skin and eyes. Do not breathe in spray or fumes. For personal protection see Section 8.

**Environmental precautions:** Do not allow entering drains or watercourses. Spillage or uncontrolled discharges into water courses (or public waters) to be reported immediately to the Police and to the Department of Water/Environmental Affairs.

**Occupational spill:** Keep spectators away. Isolate hazard area and do not touch or walk through spilled material. Stop leak if you can do so without risk.

For **small spills**, cover spill with sand or suitable non-combustible absorbent material, sweep up and place into labelled containers for subsequent disposal.

Wash area with detergent and water and follow with clean water rinse. Do not allow spill to contaminate water supplies. Dike far ahead of liquid spills for later disposal.

For **large spills** contact the manufacturer. Contain liquid far ahead of spill. Contain spillage and contaminated water for subsequent disposal. Do not flush spilled material into drains.

### 7. HANDLING AND STORAGE REQUIREMENTS

**Handling:** Relatively safe to handle. Handle with the care and caution due to crop protection chemicals. Avoid spillage.

Harmful by inhalation or if swallowed. Avoid contact with eyes and skin and inhalation of fumes. Avoid exposure to spray. Use with adequate ventilation. Wash hands before eating, drinking, chewing gum, smoking or using the toilet. Operators should change and wash clothing daily. Remove clothing immediately if the herbicide gets inside. Then wash skin thoroughly using a non-abrasive soap and put on clean clothing. 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.

**Storage:** Store in a dry, cool covered warehouse in original, well-labelled containers. Store away from food, feedstuffs, fertilizers, seed and agricultural chemicals.

Keep away from children and animals. Local regulations should be complied with.

### 8. EXPOSURE CONTROL / PERSONAL PROTECTION

**Engineering control measures:** It is essential to provide adequate ventilation. Ensure that control systems are properly designed and maintained. Only spark-resistant equipment should be used. Comply with occupational safety, environmental, fire and other applicable regulations.

#### PERSONAL PROTECTIVE EQUIPMENT:

If engineering controls and work practices are not effective in controlling exposure to this material, then wear suitable personal equipment including approved respiratory protection.

**Respirator:** An approved respirator, equipped with cartridges or canisters, suitable for protection from mists of pesticides is required. Limitations of respirator use specified by the approving agency and the manufacturer must be observed.

**Clothing:** Employee must wear appropriate protective (impervious) clothing (long sleeved cotton overalls, apron, rubber boots, face shield and hat or cap) and equipment to prevent skin contact with the substance.

**Gloves:** Employee must wear appropriate chemical resistant protective gloves (PVC or neoprene gloves) to prevent contact with this substance.

**Eye protection:** Employee must wear splash-proof safety goggles and face-shield to prevent contact with this substance.

**Emergency eyewash:** Where there is any possibility that an employee's eyes may be exposed to this substance; the employer should provide an eye wash fountain or appropriate alternative within the immediate work area for emergency use.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance:** Clear brownish viscous liquid.

**Odour:** Mildly basic odour.

**Flash point:** 95 °C.

**Specific gravity:** 1.138 g/cm<sup>3</sup>

**pH:** 8 to 10.

**Explosive properties:** Not explosive.

**Oxidising properties:** No oxidising properties. Not corrosive.

**Persistent foaming:** Formulation is partially persistent.



## UNIVERSAL 2,4-D AMINE 480 SL

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### 10. STABILITY AND REACTIVITY

**Storage stability:** Stable for up to 2 years when stored in a dry, cool covered warehouse in original, well-labelled containers. Store at low temperature conditions, below 50°C, preferably below 30 °C and not for prolonged periods in direct sunlight.

**Compatibility:** May be tank mixed with **Atrazine** and liquid fertilizers. Avoid strong bases and acids.

**Polymerization:** Product unlikely to undergo polymerisation processes.

**Decomposition products:** Under heating conditions: carbon dioxide, and if combustion is incomplete, carbon monoxide and smoke may be emitted, nitrogen and its compounds, may emit and under some circumstances, oxides of nitrogen. Occasionally hydrogen cyanide gas, hydrogen chloride gas, other compounds of chlorine and water may be produced.

### 11. TOXICOLOGICAL INFORMATION

**Acute oral LD<sub>50</sub>:** Rats: 760 mg/kg.

**Acute dermal LD<sub>50</sub>:** Rats: > 2000 mg/kg.

**Inhalation LC<sub>50</sub> (mg/l/hour):** Tech: >3.5 mg/l air

**Skin irritation:** Mild skin irritant. Skin sensitisation not expected.

**Eye irritation:** Cause severe eye irritation.

**Teratogenicity:** Evidence and studies suggest that reproductive effects and birth defects in animals only occur at very high doses. Reproductive and teratogenic problems associated with **2,4-D** are unlikely in humans under normal circumstances.

**Carcinogenicity:** Several studies suggest an association of **2,4-D** exposure with cancer (non-Hodgkins lymphoma). U.S. EPA has classified **2,4-D** as a group D carcinogen – not classifiable as to human carcinogenicity.

**Neurotoxicity:** **2,4-D** has low to moderate toxicity to humans. Excessive doses can affect the nervous system. Symptoms include: muscle weakness, loss of reflexes, nausea, vomiting, sweating, headaches, dizziness and lowering blood pressure.

**Mutagenicity:** In one study, significant effects occurred in chromosomes in cultured human cells at low exposure levels. However, **2,4-D** is extensively tested and was found not to be mutagenic or has a low mutagenic potential.

**ADI:** 0.03 mg/kg body weight.

**NOEL:** 1 year dogs: 1 mg/kg body weight.  
2 year rats: 5 mg/kg body weight.

### 12. ECOLOGICAL INFORMATION

**Degradability:** In soil, micro-organisms are responsible for degradation of **2,4-D**. Half-life is less than 7 days. **2,4-D** has low soil persistence.

In aquatic environments, micro-organisms readily degrade **2,4-D**. Under oxygenated conditions half-life is 1 week to several weeks.

**Bio-accumulation:** In plants, **2,4-D** is absorbed through roots and foliage and tends to accumulate in growing tips. Metabolism is generally slow.

In animals, **2,4-D** is almost completely absorbed after ingestion, and nearly all is excreted unchanged. Half-life in 10 to 20 hours. No evidence of accumulation.

**Mobility:** Rapid degradation in soil prevents significant downward movement under normal conditions.

#### ECOTOXICOLOGY:

**Birds: Moderate toxic to birds.**

Oral LD<sub>50</sub>: Japanese quail: 668 mg/kg

Pheasants: 472 mg/kg

LC<sub>50</sub> (96 hours): Mallard ducks: > 5620 mg/l

**Fish: Ester formulations are toxic, other not.**

LC<sub>50</sub> (96 hours): rainbow trout: > 100 mg/l

**Daphnia magna:** LC<sub>50</sub> (21 days): 235 mg/l

**Bees: Not toxic to bees.**

Oral LD<sub>50</sub>: 104.5 µg/bee

Contact LD<sub>50</sub>: 0.0115 mg/bee

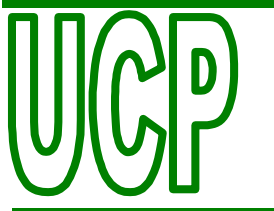
### 13. DISPOSAL CONSIDERATION

Open dumping or burning of this pesticide is prohibited. 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.

Emptied containers retain vapour and product residues. Observe all labelled safeguards until container is destroyed.

**TRIPLE RINSE** empty containers in the following manner. Invert the empty container over the spray or mixing tank and allow draining for at least 30 seconds after the flow has slowed down to a drip. Thereafter rinse the container three times with a volume of water equal to a minimum of 10 % of that of the container. Add the rinsing to the contents of the spray tank before destroying the container in the prescribed manner.

Do not re-use the empty container for any other purpose but destroy it by perforation and flattening and bury in an approved dumpsite. Prevent contamination of food, feedstuffs, drinking water and eating utensils.



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### 14. TRANSPORT INFORMATION

**UN No.:** 3082  
**Road Transport ADR/IRD:**  
Class: 9  
Packing group: III  
Shipping name: Environmentally hazardous substance, liquid, N.O.S. (herbicide - **2,4-D**)  
**Air Transport ICAO/IATA:**  
Class: 9  
Packing group: III  
Shipping name: Environmentally hazardous substance, liquid, N.O.S. (herbicide - **2,4-D**)  
**Maritime Transport IMDG/IMO:**  
Class: 9  
Packing group: III  
Shipping name: Environmentally hazardous substance, liquid, N.O.S. (herbicide - **2,4-D**)

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. All information is given in good faith but without guarantee in respect of accuracy, and no responsibility is accepted for errors and omissions or the consequence thereof.

### END OF DOCUMENT

**Compiled:** August 1998

**Reviewed:** July 2015

### 15. REGULATORY INFORMATION

**Symbol:** Xn, Xi, N  
**Indication of danger:** Harmful & Irritating & Environmentally dangerous substance.  
**Risk phrases:**  
**R20/21/22** Harmful by inhalation, in contact with skin and if swallowed.  
**R 36/37/38** Irritating to eyes, respiratory system and skin  
**R54** Toxic to flora.  
**Safety phrases:**  
**S1/2** Keep locked up and out of reach of children.  
**S20/21** When using do not eat, drink or smoke.  
**S23** Do not breathe vapour or spray.  
**S24/25** Avoid contact with skin and eyes.  
**S36/37/39** Wear suitable protective clothing, gloves and eye/face protection.  
**S45** In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).  
**S 61** Avoid release to the environment.

### 16. OTHER INFORMATION

**Packing and Labelling:** The product is packed in 5, 20, 25, 100 and 200 litres containers and drums and labelled according to 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