

# VILLA DEVELOP 800 WDG

# MATERIAL SAFETY DATA SHEET

## 1. PRODUCT & COMPANY IDENTIFICATION

**Product Name:** DEVELOP 800 WDG  
**Herbicide**  
**UN No.:** 3077  
**Supplier:** Villa 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 numbers:

#### 24 Hr Transport / Spill emergency no:

EnviroSure. +27 31 205 4918  
(Hazcall24) +27 86 044 4411

(Client: Villa Crop Protection)

Griffon Poison Information Centre +27 82 446 8946

(Client: Villa Crop Protection)

### Poisoning Emergency telephone numbers:

Griffon Poison Information Centre +27 82 446 8946

Poisons Information Centre +27 861 555 777

### Villa Crop Protection Emergency number:

**National Safety, Health and Environmental Manager:**  
+27 63 698 0668

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

**Common Name:** Diuron  
**Chemical Name:** 3-(3,4-Dichlorophenyl)-1,1-dimethylurea (IUPAC)  
**CAS No.:** [330-54-1]  
**Chemical Family:** Environmentally Hazardous Substance, Solid, N.O.S.  
**Chemical Formula:** C<sub>9</sub>H<sub>10</sub>Cl<sub>2</sub>N<sub>2</sub>O (Mol. wt.: 233.10)  
**Formulation:** Diuron 800 g/l  
Water Dispersible Granule  
**Use / Mode of Action:** Systemic herbicide, absorbed principally by roots, with translocation acropetally in xylem. Selective control of germinating grass and broad-level weeds in different crops.

### Hazardous Ingredient:

Component	Concern	Content (g/L)
Diuron		80.0
Inerts		20.0

**SYMBOLS:** N, Xi, Xn

**RISK-PHASE(S):** R 20/21/22, 36/37/38, 43, 52

## 3. HAZARD IDENTIFICATION

### Toxicity class:

WHO III (a.i.). Slightly hazardous

### Likely routes of exposure:

Skin and eye contact, ingestion and inhalation.

### Eye contact:

Mild irritant.

### Skin contact:

Mild skin irritant.

### Inhalation:

LC<sub>50</sub> (4h) for rats > 5.27 mg/l

Cause eye irritation, harmful if swallowed, inhaled, or absorbed through the skin. Avoid breathing dust or spray mist.

Harmful and environmentally hazardous substance with low toxicity to fish and fish but non-toxic to bees.

## 4. FIRST AID MEASURES AND PRECAUTIONS

Acute exposure to **Diuron** causes mild skin irritation and necrosis in animal. If inhaled it may disrupt respiratory system leading to cyanosis to human. Chronic exposure to this substance may cause blood changes, spleen and liver enlargement.

### Inhalation:

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. Treat symptomatically and supportively as and when required. **Seek medical advice immediately.**

### Skin contact:

Remove contaminated clothing, shoes and leather goods immediately. Gently wipe off excess chemical. Wash skin gently and thoroughly with non-abrasive soap or mild detergent and large amounts of water until no evidence of chemical remains (approximately 15 to 20 minutes). Seek medical advice if necessary.

### Eye contact:

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

### Ingestion:

Have victim rinse mouth thoroughly with water. **Do not induce vomiting, due to the aromatic solvent. Seek medical advice immediately.** If the person is alert and respiration is not depressed, give large quantity of water to drink. Never give anything by mouth to an unconscious person. Establish and maintain airway. Treat respiratory difficulty with artificial respiration and oxygen. Qualified medical personnel should perform administration of gastric lavage or oxygen.

### Advice to physician:

Adsorption of **Diuron** into the body may lead to the formation of methemoglobin that, in sufficient concentration, causes cyanosis. Since reversal of

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methemoglobin occurs spontaneously after termination of exposure, moderate degrees of cyanosis need to be treated only by supportive measures such as bed rest and oxygen inhalation. Through cleansing of the entire contaminated area of the body, including scalp and nails is of utmost importance. If cyanosis is IV injection of methylene blue 1mg/kg of body weight, may be of value.

## 5. FIRE FIGHTING MEASURES

**Fire/Explosion hazard:**

**Flammable.** Non-flammable.

**Flash point:** Not applicable

**Hazardous Decomposition Products:** Oxides of nitrogen, chloride compounds and other unknown hazardous material may be formed in a fire situation. Oxides of carbon and other asphyxiants may be formed from incomplete combustion.

**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. Contain water used for fire fighting for later disposal. Avoid the accumulation of polluted run-off from the site.

**Fire fighting:**

Remove spectators from surrounding area. Isolate the fire area and evacuate downwind. Use a recommended extinguishing agent for the type of surrounding fire.

Fight fire from maximum distance and use unmanned hose holder or monitor nozzles. Contain fire control agents for later disposal. Avoid inhaling hazardous vapours and fumes from burning materials. Keep upwind.

Remove container from fire area if possible and without risk. Water can be used to cool unaffected containers but must be contained for later disposal.

Dyke fire control water for later disposal. Do not scatter the material. Avoid pollution of waterways.

Do not use high volume water jet, due to contamination risk. Contain water used for fire fighting for later disposal. Avoid the accumulation of polluted run-off from the site.

**Personal protective equipment:**

Fire may produce irritating or poisonous vapours or gases (oxides of chlorine and sulphur) or other products of combustion. Fire fighters and others that may be exposed should wear full protective clothing and self-contained breathing apparatus.

## 6. ACCIDENTAL RELEASE MEASURES (Spillage)

**Personal precautions:**

Avoid contact with skin and eyes. Do not breathe in fumes. For personal protection see Section 8.

**Environmental precautions:**

**Occupational spill:** Keep spills and cleaning runoff out of municipal sewers and open bodies of water.

**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.

## 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. Do not store near heat, open flame or hot surface. Store in original containers only. 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, avoid excessive heat and moisture 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

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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. For dust exposure wear, as a minimum, a properly fitted half-face or full-face air-purifying respirator which is approved for pesticides. Respiratory use and selection must be based on airborne concentrations. Limitations of respirator use specified by the approved agency and the manufacturer must be observed.

#### Clothing:

Employee must wear appropriate protective (impervious) clothing; overalls or long-sleeves uniform, 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 goggles or a face shield is advised.

**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:** Off-white to light brown granules

**Odour:** Odourless

**Relative density:** 0.48 to 0.64 (25 °C)

**Bulk density:** 30 to 40 lbs/ft<sup>3</sup>

**Flash point:** Not applicable

**Water Solubility:** Disperses, 42 ppm (25 °C) (tech.)

**Melting Point:** 158 to 159 (tech.)

**Flammability:** Non flammable

**pH:** 6.0 to 9.0

## 10. STABILITY AND REACTIVITY

#### Stability:

Stable. Avoid excessive heat and moisture conditions. Avoid also oxidising agents, acids and alkali.

**Hazardous decomposition:** Oxides of nitrogen, chloride compounds and other unknown hazardous material may be formed in a fire situation. Oxide of carbon and other asphyxiants may be formed from incomplete combustion.

**Hazard Polymerization:** Will not occur

## 11. TOXICOLOGICAL INFORMATION

#### Formulation (calculated):

**Acute oral LD<sub>50</sub>:** 750 to 875 mg/kg

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

**Acute inhalation LC<sub>50</sub>:** >5.27 mg/l

**Acute skin irritation:** Mild irritant

**Acute eye irritation:** Mild irritant

**Sensitization:** Non-sensitising to skin (guinea pigs)

#### Teratogenicity/Development:

##### Diuron:

**Chronic toxicity:** NOEL: (2y) for dogs 25 ppm (males 1.0 females 1.7mg/kg b.w. daily).

**Carcinogenicity:** EPA: Not classified

IARC: Not classified

**Mutagenicity:** Not mutagenic

Reproduction toxicity: NOEL (Rats): 250 ppm (2 generations)

**ADI:** (EFSA) 0.007 mg/kg B.W. [2005] (tech.)

## 12. ECOLOGICAL INFORMATION

**In animals:** In mammals, metabolism is principally by hydroxylation and dealkylation.

**In plants:** In plants, **Diuron** undergoes demethylation of the nitrogen atom and hydroxylation at position 2 of the benzene ring.

**In the soil:** In soil, enzymic and microbial demethylation of the nitrogen of the nitrogen atom and enzymic hydroxylation at position 2 of benzene ring occur. It has low mobility in the soil. It is adsorbed on organic matter & clay. It has low risk to underground water contamination. Duration of activity in soil is 4 to 8 months, depending on soil type and humidity; **Diuron** is persistence in the soil in Half- life time (t<sub>1/2</sub>):DT<sub>50</sub> 90-180 d. Degradation is primary via microorganisms. **Diuron** has low bio-accumulative potential (Log P<sub>ow</sub> = 2.8); K<sub>oc</sub> 400.

#### ECOTOXICOLOGY:

##### Birds: Toxic to birds

LD<sub>50</sub> (14d): Bobwhite quail 1104mg/kg (tech.)

LC<sub>50</sub> 8-day diet: Bobwhite quail: 1730 mg/kg (tech.)

Mallard ducks 5000 mg/kg (tech.)

##### Fish: Toxic to fish.

LC<sub>50</sub> (96 hours): Sheephead minnows 6.7 mg/l (tech.)

Rainbow trout: 14.7 mg/l (tech.)

##### Daphnia:

LC<sub>50</sub> (48 h): 1.4 mg/l (tech)

##### Bees: Non-toxic to bees

LD<sub>50</sub> (contact): 145 mg/kg (tech)

##### Earthworms:

LC<sub>50</sub>: (14 d) >400 mg/kg dry soil (tech)

##### Algae:

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EC<sub>50</sub> and E<sub>r</sub>C<sub>50</sub> :( 120 h) *S. capricornutum* 0.022 mg/ℓ  
 (tech)

### 13. DISPOSAL CONSIDERATION

#### Pesticide disposal:

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/bags retain vapour and product residues. Observe all labelled safeguards until container is destroyed.

Empty the container/bag of excess product into the mixing tank or spray tank of the applicator. Destroy the emptied containers/bags by perforation and flattening. Bury in an approved dumpsite. Do not re-use the empty container/bag for any other purpose. Comply with any local legislation applying to disposal.

Prevent contamination of food, feedstuffs, drinking water and eating utensils.

### 14. TRANSPORT INFORMATION

**UN No.:** 3077  
**Road Transport ADR/IRD:**  
 Class: 6.1  
 Packing group: III  
 Shipping name: Environmentally Hazardous Substance, Solid, N.O.S. (Diuron 800 WDG)

**Maritime Transport IMDG/IMO:**  
 Class: 6.1  
 Packing group: III  
 Shipping name: Environmentally Hazardous Substance, Solid, N.O.S. (Diuron 800 WDG)

### 15. REGULATORY INFORMATION

**Symbol:** N, Xn, Xi  
**Indication of danger:** Harmful, environmentally Hazardous Substance and Skin & eye irritant.

#### Risk phrases:

**R 20/21/22** Harmful by inhalation, in contact with skin and if swallowed.

**R36/37/38** Irritating to eyes, respiratory system and skin.

**R 43** May cause sensitization by skin contact.

**R 52** Harmful aquatic organisms and birds.

#### Safety phrases:

**S 1/2** Keep locked up and out of the reach of children.

**S 3/7/9** Keep container tight closed in cool well ventilated place.

**S 13** Keep away from food, drink and animal feeding stuffs.

**S 15** Keep away from heat.

**S 20/21** When using not eat or drink animal feeding stuffs.

**S 22** Do not breathe dust.

**S 29/35** Do not empty into drains; dispose of this material and its container in a safe way.

**S 45** In case of accident or if you feel unwell, seek medical advice immediately.

**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.

**S 61** Avoid release into the environment.

### 16. OTHER INFORMATION

#### Packing and Labelling:

Packed in 1, 5, 10, 15 and 20 kg plastic/paper containers and bags 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.

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

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For detailed information on revisions, contact the Registration holder.