

FARM AG INTERNATIONAL (Pty) Ltd

P.O. Box 1523, Durban 4000

Head Office : 61 Marshall Dr., Old Mill Industrial Park, Mount Edgecombe **South Africa**

Tel + 27 31 003 3486 • Fax + 27 31 502 5852

SECTION 1. PRODUCT & COMPANY IDENTIFICATION

Product Name: FARMAG DIURON 800 WG
Product Use: Herbicide
Creation Date: July 2016
Revision Date: September 17

24 Hr Emergency Number:**In case of Poisoning:**

Poison Information Centre 082 446 8946
 Tygerberg Hospital: (021) 931 6129
 Poison Emergency Enquiries (021) 689 5227

In case of Spillage:

HAZMAT: 0800 147 112

SECTION 2 - COMPOSITION / INFORMATION ON INGREDIENTS

Common Name: diuron
Chemical Name: (3-(3,4-dichlorophenyl)-1,1-dimethylurea (IUPAC)
Chemical family: Urea
Use: A water dispersible granule herbicide with long residual action for the control of annual weeds as indicated in citrus, avocados, bananas, coffee, mangoes, pineapples, macadamia and pecan nuts and sugarcane as well as for industrial use.
Formulation: Diuron 800 g/l
 Water dispersible granules

Hazardous ingredients of toxicological concern:

<u>Inert:</u>	<u>concern:</u>	<u>% present:</u>
diuron	harmful, environmental hazard	> 80 %

Symbol: Xn, N
Indication of Danger: Harmful, Environmentally Hazardous Substance

RISK-PHASE(S) R20/22, R36/37/38, R40

SECTION 3 - HAZARD IDENTIFICATION**Inhalation:**

Likely routes of exposure: Skin contact, ingestion and inhalation.

Skin: Moderate skin irritant. May cause mild sensitization to some individuals.

Eye contact: Mild eye irritant.

Ingestion: Minimally toxic. Harmful if swallowed. Some signs of central nervous system depression have been noted at high levels of diuron exposure. For humans, the only reported case of acute, oral exposure to the herbicide produced no significant symptoms or toxicity. Methemoglobinemia may be noted in large ingestions.

Inhalation: Minimally toxic. Harmful if inhaled. May cause irritation of nose and throat.

SECTION 4 - FIRST AID MEASURES AND PRECAUTIONS**Inhalation:**

Remove source of contamination, or move victim to fresh air. Keep affected person warm and at rest. Treat symptomatically and supportively. If breathing is difficult, a qualified person should administer oxygen. Get medical attention immediately if effects persist.

Skin contact:

Move the victim to fresh air and remove all contaminated clothing, shoes and leather goods. Gently wipe off excess chemical. Wash affected skin areas gently and thoroughly with cold water and non-abrasive soap. Do not rub the skin. If irritation persists, obtain medical attention.

Eye contact:

Immediately flush the eyes with clean, gently flowing cold water for 20 minutes, holding the eyelid(s) open. If irritation persists, obtain medical attention.

Ingestion:

FARM AG INTERNATIONAL (Pty) Ltd

P.O. Box 1523, Durban 4000

Head Office : 61 Marshall Dr., Old Mill Industrial Park, Mount Edgecombe **South Africa**
Tel + 27 31 003 3486 • Fax + 27 31 502 5852

Have victim rinse mouth thoroughly with water. Do not induce vomiting. Seek medical advice immediately, showing container and label.

Advice to physician:

There is no specific antidote. Treat symptomatically and supportively as and when required. Gastric lavage and catharsis could be considered when large quantities of the product has been ingested. Give oxygen if respiration is depressed.

Methemoglobinemia may be noted. If the patient is cyanotic and symptomatic, or methemoglobin level is greater than 30% in an asymptomatic patient, administer 1 to 2 mg/kg of 1% methylene blue slowly IV. Treat symptomatically and supportively as and when required.

SECTION 5 - FIRE-FIGHTING MEASURES

Fire and explosion hazard:

Flash point: None; water based. This material is not flammable.

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.

Hazardous products of combustion:

In a fire, carbon oxides (CO, CO₂), nitrogen oxides (NO_x) and corrosive fumes of chlorides may be formed.

Fire fighting:

Remove spectators from surrounding area. Remove container from fire area if possible. Contain fire control agents for later disposal. Use a recommended extinguishing agent for the type of surrounding fire. Avoid inhaling hazardous vapours and fumes from burning materials. Keep upwind.

Personal protective equipment:

Fire may produce irritating or poisonous vapours (toxic fumes of carbon oxides, nitrogen oxides and corrosive fumes of chloride), mists or other products of combustion. Fire fighters and others that may be exposed should wear full protective clothing and self-contained breathing apparatus.

SECTION 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:

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

For small liquid spills, soak up with damp earth or sand, or other non-combustible absorbent material. Place the material into a clean, dry container and cover for subsequent disposal.

For large liquid spills, contain the liquid by damming in with absorptive material and pump into containers. Soak up remainder with absorbent material.

Label containers with its content and dispose it in accordance with local regulations. Open burning or dumping of this material is prohibited. Do not flush spilled material into drains. Keep spectators away. In situations where product comes in contact with water, contain contaminated water for disposal.

SECTION 7 - HANDLING AND STORAGE REQUIREMENTS

Handling:

Avoid contact with eyes, prolonged contact with skin, and inhalation of spray and fumes. Handle product with caution. Use with adequate ventilation. Wash hands before eating, drinking, chewing gum, smoking or using the toilet. Remove clothing immediately if the herbicide gets inside. Then wash skin thoroughly using a non-abrasive soap and put on clean clothing. Operators should change and wash clothing after use. 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 its original, labelled and closed container in dry, cool, shaded, well-ventilated area, away from heat, sparks and other sources of ignition. Do not store with other pesticides, fertilizer, seeds, foodstuffs and water supplies. Store away from incompatible substances. Keep out of reach of unauthorized persons, children and animals. Local regulations should be complied with.

FARM AG INTERNATIONAL (Pty) Ltd

P.O. Box 1523, Durban 4000

Head Office : 61 Marshall Dr., Old Mill Industrial Park, Mount Edgecombe **South Africa**

Tel + 27 31 003 3486 • Fax + 27 31 502 5852

SECTION 8 - EXPOSURE CONTROL/PERSONAL PROTECTION

It is essential to provide adequate ventilation. The measures appropriate for a particular work site 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:

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

Respirator:

It is usually safe to use the product without respirator. Where exposure through inhalation and eye contact may occur when handling and when preparing the spray mixture, wear a face mask. If the product is used in dusty or confined conditions or spillage and fire conditions a respirator suitable and approved for protection from dusts and mists of pesticides is adequate. Limitations of respirator use specified by the approved agency and the manufacturer must be observed.

Clothing:

Employee must wear appropriate protective (impervious) clothing and equipment to prevent repeated or prolonged skin contact with this substance.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Off-white granules
Odour:	None
Explosive properties:	Not explosive
Flammability:	Not flammable
Flash point:	None
Oxidising properties:	None
pH:	6-10 at 20°C
Bulk Density:	0.69
Solubility in water:	The product readily disperses in water

SECTION 10 - STABILITY AND REACTIVITY**Stability:**

Stable under normal temperatures and storage conditions. Stable in neutral media. Hydrolyzed by acids and alkalis and at elevated temperatures.

Storage stability:

Stable for 2 years under normal warehouse conditions. Store at temperatures below 50°C and above 0°C.

Incompatibility:

Product is normally compatible with most herbicides, provided the mixing instructions are strictly adhered to. The quality of the water however, can affect the compatibility. Therefore, a compatibility test should be carried out with the water and the products to be used prior to mixing. Do not physically mix concentrate directly with other herbicides or pesticide concentrates; always dilute first. Avoid strong alkalis and acids.

Thermal decomposition:

Toxic oxides of carbon, nitrogen and corrosive fumes of chloride are released when the product decomposes on heating. Decomposes at 180 to 190°C.

SECTION 11 - TOXICOLOGICAL INFORMATION

Acute oral LD₅₀:	>2500 mg/kg in rats.
Acute dermal LD₅₀:	>5000 mg/kg in rats.
Inhalation LC₅₀ (4 hours):	>1,07 mg/l of chamber air.
Acute skin irritation:	may cause mild skin irritation.
Acute eye irritation:	mild eye irritant.
Skin sensitization:	not skin sensitizer.

Reproductivity:

Daily low doses of diuron fed to female rats through three successive generations caused significantly decreased body weight of offspring in the second and third litters. The fertility rate remained unaffected. It is unlikely that diuron will cause reproductive effects in humans at expected levels of exposure.

Teratogenicity:

FARM AG INTERNATIONAL (Pty) Ltd

P.O. Box 1523, Durban 4000

Head Office : 61 Marshall Dr., Old Mill Industrial Park, Mount Edgecombe South Africa**Tel + 27 31 003 3486 • Fax + 27 31 502 5852**

Diuron is teratogenic at high doses. Pregnant mice given very high doses of diuron (nearly 2000 mg/kg/day) exhibited reproductive and embryotoxic effects. Developmental effects were found in their offspring.

Mutagenicity:

Diuron does not appear to be mutagenic. The majority of tests have shown that diuron does not produce mutations in animal cells or in bacterial cells.

Carcinogenicity:

Limited evidence indicates that low level exposures to diuron does not cause cancer.

Organ toxicity:

Low doses of diuron over extended periods of time can cause enlargement to the liver and the spleen.

ADI: 0,0002 mg/kg body weight

SECTION 12 - ECOLOGICAL INFORMATION**Degradability:**

Diuron is moderately to highly persistent in soils. Residue half-lives are from 1 month to 1 year. Some pineapple fields contained residues 3 years after the last application. Mobility in the soil is related to organic matter and to the type of the residue. The metabolites are less mobile than the parent compound.

Diuron is relatively stable in neutral water. Microbes are the primary agents in the degradation of diuron in aquatic environments.

Diuron is readily absorbed through the root system of plants and less readily through the leaves and stems.

ECOTOXICOLOGY:**Birds: Slightly toxic.**

LC ₅₀ (8 day diet):	Mallard ducklings:	> 5000 mg/kg
	Bobwhite quail:	1730 mg/kg
	Japanese quail:	> 5000 mg/kg
	Pheasant chicks:	> 5000 mg/kg

Fish: Moderately toxic to fish and highly toxic to aquatic invertebrates.

LC ₅₀ (96 hours):	Rainbow trout:	5.6 mg/l
	Bluegill sunfish:	5.9 mg/l
	Guppies:	25 mg/l
	LC ₅₀ (48 hours):	12 mg/l

Daphnia:**Bees: Not toxic.**

This product is unlikely to bioaccumulate.

SECTION 13 - DISPOSAL CONSIDERATION**Pesticide disposal:**

Contaminated absorbents, used containers, surplus product, etc., should be buried in approved landfill. Hydrolysis under alkaline conditions is a suitable method to dispose of small quantities of the product. Never pour untreated waste or surplus products into public sewers or where there is any danger of run-off or seepage into water systems. Comply with local legislation applying to waste disposal.

Container disposal:

Emptied containers retain vapour and product residues and should be triple rinsed with water. Observe all labelled safeguards until container is cleaned, reconditioned or destroyed. Combustible containers should be disposed of in incinerators. Containers that are not to be reused should be punctured and transported to a scrap metal facility for recycling or disposal.

SECTION 14 - TRANSPORT INFORMATION

UN NUMBER 3077

ADR/RID:

Shipping name: Environmentally hazardous substance, solid, n.o.s. (Diuron 800 g/kg)
 Substance ID no.: 3077
 Hazard ID no.: 90
 Label: 9
 Item no.: 12°(c)

IMDG/IMO

Proper shipping name: Environmentally hazardous substance, solid, n.o.s. (Diuron 800 g/kg)

Class: 9
 Packaging group: III

FARM AG INTERNATIONAL (Pty) Ltd

P.O. Box 1523, Durban 4000

Head Office : 61 Marshall Dr., Old Mill Industrial Park, Mount Edgecombe South Africa
Tel + 27 31 003 3486 • Fax + 27 31 502 5852**AIR/IATA**

Proper shipping name: Environmentally hazardous substance, solid, n.o.s. (Diuron 800 g/kg)
Class: 9
Packaging group: III
Y911 (30Kg)
911 No limit
UK classification Not Available
Tremcard number 90GM7-III

SECTION 15 - REGULATORY INFORMATION

Symbol: N, Xn
Indication: Environmentally dangerous substance, Harmful.
Risk phrases:
R 20/22 Harmful by inhalation and if swallowed.
R 36/37/38 Irritating to eyes, respiratory system and skin.
R 40 Limited evidence of a carcinogenic effect.
Carc. Cat. 3 Substance may cause concern for man owing to possible carcinogenic effects but in respect of which the available information is not adequate for making a satisfactory assessment.
R 50 Very toxic to aquatic organisms.
Safety phrases:
S 2 Keep out of reach children.
S 13 Keep away from food, drink and animal feeding stuff.
S 24/25 Avoid contact with skin and eyes.
S 36/37 Wear protective clothing and gloves.
S 60 This material and its container must be disposed of as hazardous waste.
S 61 Avoid release to the environment. Refer to special instructions/safety data sheets.

SECTION 16 - OTHER INFORMATION**Packaging:**

Packed in 5, 10, 20, 25 kg bags lined with inner plastic, bottles and labeled 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 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.