

FARM-AG INTERNATIONAL (Pty) Ltd

P.O. Box 1523, Durban 4000

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

Registration Number: 2005/011761/07

Tel + 27 31 003 3486 • Fax + 27 31 502 5825

1: PRODUCT AND COMPANY IDENTIFICATION

Product Name: FARM AG DIURON 800 SC
Product Use: Herbicide
Effective Date: January 2012
Revision Date: August 2017

24 Hr Emergency Number: 082 771 2712

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

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: UREA
Chemical Formula: C₉H₁₀Cl₂N₂O
Formulation: Diuron 800g/l
 Suspension concentrate
Use: Selective and Total Weed Control, systemic herbicide
Hazardous Components: Diuron 800g / litre
EEC number: 206-354-4
EC RISK: Xn
RISK PHRASES: R 40/22, R 48/22

3. HAZARD IDENTIFICATION

Toxicity class: EPA III (formulation), WHO III (active ingredient) Table 5.

A low toxicity herbicide.

Eye Contact: Does not cause eye irritation

Skin Contact: Minimally toxic

Ingestion: Minimally toxic. Methemoglobinemia may be noticed in large ingestions.

Inhalation: May cause irritation of nose and throat.

Carcinogenicity, Mutagenicity, Neurotoxicity, Reproductive toxicity: See section 11

4. FIRST AID MEASURES AND PRECAUTIONS

If severe symptoms or signs of poisoning are evident, other than Methemoglobinemia, the operation of an alternative or additional toxicant should be suspected. CNS depression and hypoxemia may be noted if methemoglobinemia is present. Nausea, vomiting and diarrhea may be noted in patients with Methemoglobinemia, due to absorption of excessive amounts of these agents.

Treat symptomatically and supportively as and when required.

Inhalation:

Remove from exposure area to fresh air immediately. If breathing has stopped, perform mechanical artificial Respiration. Keep person warm and at rest. Treat symptomatically and supportively. Obtain medical attention if necessary.

Skin contact:

Remove contaminated clothing, shoes and leather goods. Gently wipe off excess chemical. Wash skin thoroughly and gently with water and a non-abrasive soap. Seek medical advice if necessary. The product is not considered to be a skin sensitiser, but persons who become sensitized may require specialized medical management with anti-inflammatory agents.

Eye contact:

flush eyes with gently flowing lukewarm water or saline solution for 20 minutes, occasionally lifting the upper and lower lids. Obtain medical attention if necessary.

Ingestion:

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Remove by gastric lavage and catharsis. Maintain blood pressure and airway. Do not perform gastric lavage if victim is unconscious. Seek medical attention. Administration of gastric lavage or oxygen should be performed by qualified medical personnel.

Advice to physician:

There is no specific antidote. Gastric levels and catharsis may be required on consumption of large quantities of the product. Methemoglobinemia may be noted in large ingestions.

METHEMOGLOBINEMIA: Administer 1 to 2 mg / kg of 1% methylene blue slowly IV if the patient is cyanotic and symptomatic or the methemoglobin level is greater than 30% in an asymptomatic patient. Additional doses may be required. Treat symptomatically and supportively as and when required.

5. FIRE-FIGHTING MEASURES

Fire/Explosion hazard:

No fire or explosion hazard.

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 container from fire area if possible. Contain fire control water for later disposal. Use a recommended extinguishing agent for the type of surrounding fire. Avoid inhaling hazardous vapours. Keep material away from water sources and sewers. Do not touch material and avoid breathing fumes. Keep upwind.

Personal Protective Equipment: Fire may produce irritating or poisonous vapors (corrosive fumes of chlorides and toxic oxides of nitrogen and carbon) of combustion. 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 inhale spray particles. For personal protection see Exposure and Control / Personal Protection.

Environmental precautions:

Prevent the product from entering sewers, waterways and low areas. When the product contaminates public waters, inform appropriate authorities immediately in accordance with local regulations.

Occupational spill:

Small liquid spills of Diuron should be reduced to a solid phase by evaporation, or taken up with a non-combustible absorbent material (e.g.: sand), and then placed in a container for later disposal. Large liquid spills on land first should be diked to prevent runoff from entering water sources and sewers. All spills on land should be deposited in excavated pits, ponds, or other holding areas which have been sealed with an impermeable, flexible membrane liner. Solids are then covered with a plastic Sheet, while bulk liquids are absorbed with fly ash or cement powder. Spills of Diuron into bodies of water are first treated with activated carbon, then the immobilized masses of pollutant and precipitates are removed with mechanical dredges or lifts. Before permanent land disposal of Diuron, consult with environmental regulatory agencies. Keep spectators away and upwind.

7. HANDLING AND STORAGE REQUIREMENTS

Handling:

Avoid inhalation of spray fumes and contact with skin and eyes. 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 water, 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:

Stable for at least 2 years when stored under dry, dark warehouse conditions. Store in its original labeled containers in a shaded, well-ventilated area, away from heat, sparks and other sources of ignition. Not to be stored next to foodstuffs and water supplies. Keep out of reach of children and animals. Local regulations should be complied with.

8. EXPOSURE CONTROL/PERSONAL PROTECTION

Occupational exposure limits: NIOSH REL TO DIURON – air: 10H TWA 10mg / m³

Engineering control measures: 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

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occupational safety, environmental, fire, and other applicable regulations. 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.

PERSONAL PROTECTIVE EQUIPMENT:

Respirator: An approved full face respirator suitable for protection against dusts and mists of pesticides is adequate. Limitations of respirator use specified by the approving 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 the substance.

Gloves:

Employee must wear appropriate synthetic protective gloves to prevent contact with this substance.

Eye protection:

The use of safety goggles is recommended.

Emergency Eye Wash: 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:	Bright, white, viscous liquid.
Odour:	Estery odour
Explosive properties:	Not explosive
Flammability:	Not flammable
Flash point:	Not applicable
Oxidising properties:	None
pH:	6-8 (5% solution)
Density:	1.270 ±0.005 g / ml at 20°C
Suspensibility:	90 minutes
Storage stability:	Stable for up to 2 years under normal storage conditions.
Dilution Stability:	Excellent
Solubility in water:	The product readily disperses in water
Solubility in organic solvents:	<i>(data in g / kg at 27°C for technical material)</i>
In acetone:	53
In Butyl stearate:	1.4
In Benzene:	1.2

The product is sparingly soluble in hydrocarbons.

10. STABILITY AND REACTIVITY**Stability:**

Stable in neutral media at normal temperatures, but hydrolysed at elevated temperatures. Hydrolysed by acids and alkalis. Decomposes at 180-190°C.

Incompatibility: Compatible with most other herbicides. However, a compatibility test is required before using with other products. Do not physically mix concentrate directly with other herbicides or pesticide concentrates, always dilute first. Hydrolysis may occur in the presence of strong acids or alkalis.

Thermal decomposition: Thermal decomposition products may include toxic oxides of nitrogen and carbon and toxic and corrosive fumes of chlorides.

11. TOXICOLOGICAL INFORMATION

Acute oral LD50:	3500 mg / kg in rats
Acute dermal LD50:	>2 000mg / kg in rats
Acute inhalation LC50:	>1.07mg / litre of chamber air (4 hours) in rats.
Acute skin irritation:	The product is considered to be non-irritating to skin (rabbit)
Acute eye irritation:	The product caused no irritation to eyes (rabbit)
Dermal sensitization:	Product has a weak sensitization potential (guinea pig)

Carcinogenicity: Published information

Diuron has been an equivocal tumor agent in mice (RTECS). It induced gastric, liver, and pancreatic tumors in rats by the oral exposure route. No human information available.

Teratogenicity: Published information

Fetal anomalies after maternal treatment with 250mg / kg Diuron. Most of the anomalies consisted of minor skeletal defects associated with embryotoxicity than with true teratogenic effects. No human information available.

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Mutagenicity: Published information

Diuron was mutagenic in the Ames Salmonella microsome assay and caused inhibition of DNA repair in mice (HSDB). No human information available.

12. ECOLOGICAL INFORMATION**Birds: Data as for technical material**

Practically non-toxic to birds

LC50 (8 d dietary): 1 730mg / kg (bobwhite quail)
 >5 000mg / kg (Japanese quail)
 >5 000mg / kg (Mallard ducklings)
 >5 000mg / kg (pheasant chicks)

Fish: May pose a hazard to fish
 LC50 (96 hours): 10.56 mg/litre

Daphnia: Data as for technical material

May pose a hazard to Daphnia magna

EC50 (48 hours): 12 mg/litre

Bees: Non-toxic to bees**Earthworms:** LC50 58.59 mg/kg silicone (*Eisenia foetida*)

Degradability: In soil, enzymatic and microbial demethylation of the nitrogen atom and hydroxylation is the main degradation pathway. Not very soluble in water and tends to resist leaching. Duration of activity in soil is ca. 4-8months, depending on the soil type and humidity: DT5090-180 days.

Accumulation: The product is unlikely to bioaccumulate.**German wgk:** Not listed.**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.

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

14. TRANSPORT INFORMATION

UN Number 3082

ADR/RID:

Shipping name: Environmentally Hazardous substance, liquid, n.o.s. (Diuron 800 g/l)
 Substance ID no.: 3082
 Hazard ID no.: 90
 Label: 9
 Item no.: 11°C

IMDG/IMO

Proper shipping name: Environmentally hazardous substance, liquid, n.o.s. (Diuron 800g/l)
 Class: 9
 Packing Group: III

ICAO/IATA

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UK Classification Not available.**DOT classification** For DOT regulatory information, if required, consult transportation regulations, product shipping papers, or contact your Gap Chemicals representative.**15. REGULATORY INFORMATION****Symbol:** Xn, harmful**Risk phrases:****R 40/22** Harmful, possible risk of irreversible effects if swallowed.**R 48/22** Harmful, danger of serious damage to health by prolonged exposure if swallowed.**Carc.Cat.3** Substance which 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.**Safety phrases:****S 2:** Keep out of reach of children**S 13:** Keep away from food, drink and animal feeding stuffs**S 20/21:** When using do not eat, drink or smoke**S 36/37:** Wear suitable protective clothing and gloves**National Legislation:** In accordance with 91/155/EEC Directive and with French standard T 01-102 and the South African Occupational Health and Safety Act, 1993 (Act. No. 85 of 1993)**16. OTHER INFORMATION**

All information is presented in good faith, based on our current knowledge and is intended to describe the product for the purpose of health and safety requirements only. It should not therefore, in itself be construed as a guarantee of any special quality relating to the product, which will depend on the terms of the contract of sale.

No warranty is expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof.