

MATERIAL SAFETY DATA SHEET

SECTION 1 – IDENTIFICATION OF THE CHEMICAL PRODUCT AND COMPANY

Product Name: Kenso Agcare Diuron 900 WG Herbicide
Product Type: Group C Herbicide
Company Name: Kenso Corporation (M) Sdn Bhd
Address: Unit 3C/ 59, Oxford Street, Bulimba Queensland 4171
Telephone Number: (07) 3217 9788
Facsimile Number: (07) 3217 9733
Emergency Telephone Number: 000 (Police or Fire Brigade)
13 11 26 (Poisons Information Centre)
Use: For selective weed control in the situations as specified in the directions of use table.

SECTION 2 – HAZARDS IDENTIFICATION

Hazard Classification: Classified as hazardous according to criteria of Safe Work Australia.
Not classified as a Dangerous Good according to the ADG Code.
Risk Phrase(s): R48/22. Harmful: danger of serious damage to health by prolonged exposure if swallowed.
Safety Phrase(s): S20 When using, do not eat or drink.
SUSDP Classification: None allocated
ADG Classification: N/A
UN Number: N/A

Emergency Overview

Physical Description & colour: Granulated solid.
Odour: No specific odour.
Major Health Hazards: May cause serious damage to health by prolonged exposure, harmful if swallowed.

Potential Health Effects

Acute:

Swallowed: Available data shows that this product is harmful, but symptoms are not available. This product is unlikely to cause any irritation problems in the short or long term.

Eye: Available data shows that this product is not harmful. However product may be irritating to eyes, but is unlikely to cause anything more than mild transient discomfort.

Skin: Available data indicates that this product is not harmful. It should present no hazards in normal use. In addition product is unlikely to cause any discomfort in normal use.

Inhaled: Available data indicates that this product is not harmful. In addition product is unlikely to cause any discomfort or irritation.

Carcinogen Status:

NOHSC: No significant ingredient is classified as carcinogenic by NOHSC.
NTP: No significant ingredient is classified as carcinogenic by NTP.
IARC: No significant ingredient is classified as carcinogenic by IARC.

SECTION 3 – COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	CAS number	Proportion
Diuron	330-54-1	90 % W/W
Inert Ingredient		to 100% W/W

SECTION 4 – FIRST AID MEASURES

General Information:

You should call The Poisons Information Centre if you feel that you may have been poisoned, burned or irritated by this product. The number is 131126 from anywhere in Australia (0800 764 766 in New Zealand) and is available at all times. Have this MSDS with you when you call.

Swallowed	If swallowed, Do Not induce vomiting. Wash mouth with water and contact a Poisons Information Centre, or call a doctor.
Eye	No effects expected. If irritation does occur, flush contaminated eye(s) with lukewarm, gently flowing water 5 minutes or until the product is removed. Obtain medical advice if irritation becomes painful or lasts more than a few minutes.
Skin	No specific health data is available for this product. If any unusual symptoms become evident, or if in doubt, contact a Poisons Information Centre or a doctor.
Inhaled	First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

Advice to Doctor:

Treat symptomatically.

SECTION 5 – FIRE FIGHTING MEASURES

Fire/Explosion Hazard:	There is no risk of an explosion from this product under normal circumstances if it is involved in a fire.
Dangerous decomposition: or Combustion Products	If involved in a fire, the dehydrated components may emit oxides of carbon and nitrogen, cyanides, phosgene and hydrogen chloride.
Extinguishing Media:	Carbon dioxide, dry chemical, foam and water fog.
Fire Fighting:	If a significant quantity of this product is involved in a fire, call the fire brigade.
Flash Point:	Does not burn.
Upper Flammability Limit:	Does not burn.
Lower Flammability Limit:	Does not burn.
Auto ignition Temperature:	Not applicable – does not burn.
Flammability Class:	Does not burn.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Spills & Disposal

In the event of a major spill, prevent spillage from entering drains or water courses. Wear full protective clothing including eye/face protection.

Product spill: Sweep granules and shovel or collect recoverable product into labeled containers for recycling or salvage, and dispose of promptly.

Wash the spill area with detergent and water. Launder protective clothing before storage or re-use.

Personal Protection:

For appropriate personal protective equipment (PPE), refer Section 8. If product has dried out and the possibility of dust generation exists, wear a suitable respirator.

SECTION 7 – HANDLING AND STORAGE

Storage

Store in the closed, original container in a dry, cool, well-ventilated area out of direct sunlight. Keep container tightly sealed and do not store with seed, fertilisers or foodstuffs. Keep away from sparks or open flames.

SECTION 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION

The following Australian Standards will provide general advice regarding safety clothing and equipment:
Respiratory equipment: **AS/NZS 1715**, Protective Gloves: **AS 2161**, Industrial Clothing: **AS2919**, Industrial Eye Protection: **AS1336** and **AS/NZS 1337**, Occupational Protective Footwear: **AS/NZS2210**.

Exposure Limits	TWA (mg/m ³)	STEL (mg/m ³)
Diuron	10	not set

The ADI for Diuron is set at 0.006 mg/kg/day. The corresponding NOEL is set at 0.625 mg/kg/day. ADI means Acceptable Daily Intake and NOEL means No-observable-effect-level. Values taken from Australian ADI List, Dec 2002.

Ventilation:	No special ventilation requirements are normally necessary for this product. However make sure that the work environment remains clean and that dusts are minimised.
Eye Protection:	Eye protection such as protective glasses or goggles is recommended when this product is being used.
Skin Protection:	The information at hand indicates that this product is not harmful and that normally no special skin protection is necessary. However, we suggest that you routinely avoid contact with all chemical products and that you wear suitable gloves (preferably elbow-length) when handling this product.
Protective Material:	We suggest that protective clothing be made from the following materials: rubber, PVC.
Types	
Respirator:	Usually, no respirator is necessary when using this product. However, if you have any doubts consult the Australian Standard mentioned above.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Form:	Granulated solid
Colour:	Pale, fawn coloured
Odour:	No specific odour.
Boiling point (°C):	Not applicable
Vapour Pressure:	Not applicable
Specific Density:	1.48 ± 0.01
Flashpoint:	Non flammable
Flammability Limits:	Non flammable
Solubility in Water:	37.4 mg/L (25°C)

SECTION 10 – STABILITY AND REACTIVITY

Reactivity :	This product is unlikely to react or decompose under normal storage conditions. However, if you have any doubts, contact the supplier for advice on shelf life properties.
Conditions to Avoid:	Keep away from heat, flames and sparks
Incompatibilities:	Strong oxidizing agents.
Fire Decomposition:	Carbon dioxide, and if combustion is incomplete, carbon monoxide and smoke. Nitrogen and its compounds, and under some circumstances, oxides of nitrogen. Occasionally hydrogen cyanide gas. Hydrogen chloride gas, other compounds of chlorine. Water. Carbon monoxide poisoning produces headache, weakness, nausea, dizziness, confusion, dimness of

vision, disturbance of judgment, and unconsciousness followed by coma and death. Hydrogen cyanide poisoning signs and symptoms are weakness, dizziness, headache, nausea, vomiting, coma, convulsions and death. Death results from respiratory arrest. Hydrogen cyanide gas acts very rapidly; symptoms and death can both occur quickly.

Polymerization:

This product is unlikely to undergo polymerization processes.

SECTION 11 – TOXICOLOGICAL INFORMATION**Toxicity data:**

Diuron / technical

Acute oral LD₅₀ for rat: 3400 mg/kg

Acute dermal LD₅₀ for rats: >2000 mg/kg

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.

Chronic toxicity:

Male rats given extremely high doses of Diuron over a 2-week period showed changes in their spleen and bone marrow. Other chronic effects attributed to moderate to high doses of the pesticide over time included changes in blood chemistry, increased mortality, growth retardation, abnormal blood pigment, and anemia. When fed small amounts of Diuron in food for 2 years, animal species showed no adverse effects.

Reproductive effects:

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.

Teratogenic effects:

Diuron is teratogenic at high doses. Administered to pregnant rats on days 6 through 15 of gestation, it produced no birth defects in the offspring at doses of up to 125 mg/kg/day. However, doses of 250 mg/kg/day caused wavy ribs, extra ribs and delayed bone formation. There were also weight decreases in offspring at 500 mg/kg/day. There was no increase in the severity of the rib deformation at this higher dose. Pregnant mice given very high doses of Diuron (nearly 2000 mg/kg/day) exhibited reproductive and embryotoxic effects. Development effects were found in their offspring.

Mutagenic effects:

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.

Carcinogenic effects:

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.

Fate in Humans and Animals:

Diuron is excreted in the faeces and urine of test animals. Breakdown of the compound is similar in animals, plants and soil. Cows fed very low doses of Diuron in their diets had small amounts of residues in whole milk. Cattle fed small amounts accumulated low levels of Diuron in fat and muscle, liver and kidney.

SECTION 12 – ECOLOGICAL INFORMATION

This product is biodegradable. It will not accumulate in the soil or water or cause long term problems.

Effects on birds:

Diuron is slightly toxic to birds. In bobwhite quail, the dietary LC₅₀ is 1730 ppm. In Japanese quail and ring-necked pheasant, it is greater than 5000 ppm. The LC₅₀ is approximately 5000 ppm in mallard ducks.

Effects on aquatic organisms:

The LC₅₀ (48hour) values for Diuron range from 4.3 mg/L to 42 mg/L in fish, and range from 1 mg/L to 2.5 mg/L for aquatic invertebrates. The LC₅₀ (96 hour) is 3.5 mg/L for rainbow trout. Thus, Diuron is moderately toxic to fish and highly toxic to aquatic invertebrates.

Effects on other organisms:

Diuron is non-toxic to bees.

Environment Fate:

Breakdown in soil and groundwater: 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. In California, Diuron has been found in groundwater in the 2 to 3 ppb range. It has also been found in Ontario groundwater where it has been linked with land applications.

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

Breakdown in vegetation: Diuron is readily absorbed through the root system of plants and less readily through the leaves and stems.

SECTION 13 – DISPOSAL CONSIDERATIONS

Disposal: Instructions concerning the disposal of this product and its containers are given on the product label. These should be carefully followed.

SECTION 14 – TRANSPORT INFORMATION

Storage and Transport	Considered non dangerous for road and rail transport (in packaging) by the Australian Code for the Transport of Dangerous Goods by Road and Rail. Ref:ADG7; SP No. AU01.
UN Number (Sea Transport):	3077
IMO Class/Packing Group:	Class 9; Packing Group III
IMO Marine Pollutant:	Marine Pollutant
IMO Proper Shipping Name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (contains Diuron)

SECTION 15 – REGULATORY INFORMATION

AICS: All of the significant ingredients in this formulation are to be found in the public AICS Database.

SECTION 16 – OTHER INFORMATION

This MSDS contains only safety-related information. For other data see product literature.

Acronyms:

ADG Code	Australian Code for the Transport of Dangerous Goods by Road and Rail
AICS	Australian Inventory of Chemical Substances
CAS number	Chemical Abstracts Service Registry Number
IARC	International Agency for Research on Cancer
NOHSC	National Occupational Health and Safety Commission
SUSDP	Standard for the Uniform Scheduling of Drugs & Poisons
UN Number	United Nations Number

CONTACT POINT:

Police and Fire Brigade:

Dial 000

National Poisons Information Centre:

Dial 13 11 26 (from anywhere in Australia)

For 24 hour emergency response:

Dial 0439 933 556

Ask for Murray Goodlich