

**Section 1 - Identification of The Material and Supplier**

Adama Australia Pty Ltd,
Level 1, Building B
207 Pacific Highway St Leonards, NSW 2065
ACN 050 328 973

Telephone (02)9431 7800 (office hours)
Emergency 1800 024 973 (24 hours)
Fax (02)9431 7700

Chemical nature: Diuron is a urea derivative; hexazinone is a 1,2,4-triazinone derivative.
Trade Name: **Bobcat Combi WG Herbicide**
Product Use: Agricultural herbicide for use as described on the product label.
Creation Date: **September, 2006**
This version issued: **May, 2021** and is valid for 5 years from this date.
Poisons Information Centre: Phone 13 1126 from anywhere in Australia

Section 2 - Hazards Identification**Statement of Hazardous Nature**

This product is classified as: T, Toxic. N, Dangerous to the environment. Hazardous according to the criteria of SWA.

Not subject to the ADG Code when transported in Australia by Road or Rail in packages 500kg(L) or less; or IBCs (refer to SP AU01). However if transported by Air or Sea, this provision does not apply. Then the product is classed as Dangerous (Class 9 Environmentally Hazardous) by IATA and IMDG/IMSBC respectively. See details below and in Section 14 of this SDS.

SUSMP Classification: S5

ADG Classification: Class 9: Miscellaneous dangerous goods.

UN Number: 3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.

**GHS Signal word: DANGER**

Acute Toxicity Oral Category 4
Serious eye damage/eye irritation Category 2B
Carcinogenicity Category 2
Specific Target Organ toxicity - repeated exposure Category 2
Hazardous to aquatic environment Short term/Chronic Category 1

HAZARD STATEMENT:

H302: Harmful if swallowed.
H320: Causes eye irritation.
H351: Suspected of causing cancer.
H373: May cause damage to organs through prolonged or repeated exposure.
H410: Very toxic to aquatic life with long lasting effects.

PREVENTION

P102: Keep out of reach of children.
P201: Obtain special instructions before use.
P202: Do not handle until all safety precautions have been read and understood.
P260: Do not breathe dusts or spray.
P262: Do not get in eyes, on skin, or on clothing.
P264: Wash contacted areas thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P273: Avoid release to the environment.
P280: Wear protective gloves, protective clothing and eye or face protection.
P281: Use personal protective equipment as required.

RESPONSE

P310: Immediately call a POISON CENTRE or doctor/physician.
P352: Wash with plenty of soap and water.

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P301+P312: IF SWALLOWED: Call a POISON CENTRE or doctor if you feel unwell.

P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P308+P313: If exposed or concerned: Get medical advice.

P337+P313: If eye irritation persists: Get medical advice.

P391: Collect spillage.

P370+P378: In case of fire, use carbon dioxide, dry chemical, foam, water fog.

STORAGE

P405: Store locked up.

P402+P404: Store in a dry place. Store in a closed container.

P403+P235: Store in a well-ventilated place. Keep cool.

DISPOSAL

P501: Dispose of contents and containers as specified on the registered label.

Emergency Overview

Physical Description & colour: White to off-white granulated solid.

Odour: Faint odour.

Major Health Hazards: Limited evidence of a carcinogenic effect, harmful if swallowed, may cause damage to organs through prolonged or repeated exposure.

Section 3 - Composition/Information on Ingredients

Ingredients	CAS No	Conc, %	TWA (mg/m ³)	STEL (mg/m ³)
Diuron	330-54-1	44-49	10	not set
Hexazinone	51235-04-2	12-14	not set	not set
Other non hazardous ingredients	secret	to 100	not set	not set

This is a commercial product whose exact ratio of components may vary slightly. Minor quantities of other non hazardous ingredients are also possible.

The SWA TWA exposure value is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week. The STEL (Short Term Exposure Limit) is an exposure value that may be equalled (but should not be exceeded) for no longer than 15 minutes and should not be repeated more than 4 times per day. There should be at least 60 minutes between successive exposures at the STEL. The term "peak" is used when the TWA limit, because of the rapid action of the substance, should never be exceeded, even briefly.

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 13 1126 from anywhere in Australia (0800 764 766 in New Zealand) and is available at all times. Have this SDS with you when you call.

Inhalation: If irritation is experienced, remove victim from area and allow to breath fresh air. If irritation persists, call a doctor or poisons information centre.

Skin Contact: Wash gently and thoroughly with water (use non-abrasive soap if necessary) for 10 minutes or until chemical is removed. If irritation persists, repeat flushing and obtain medical advice.

Eye Contact: Immediately flush the contaminated eye(s) with lukewarm, gently flowing water for 5 minutes or until the product is removed, while holding the eyelid(s) open. Obtain medical advice immediately if irritation occurs. Take special care if exposed person is wearing contact lenses.

Ingestion: If swallowed, do NOT induce vomiting. Wash mouth with water and contact a Poisons Information Centre, or call a doctor.

Section 5 - Fire Fighting Measures

Fire and Explosion Hazards: There is no risk of an explosion from this product under normal circumstances if it is involved in a fire.

Fire decomposition products from this product may be toxic if inhaled. Take appropriate protective measures.

Extinguishing Media: Water fog or fine spray is the preferred medium for large fires. Try to contain spills, minimise spillage entering drains or water courses.

Fire Fighting: If a significant quantity of this product is involved in a fire, call the fire brigade. There is little danger of a violent reaction or explosion if significant quantities of this product are involved in a fire. Recommended personal protective equipment is full fire kit and breathing apparatus.

Flash point: Not flammable.

Upper Flammability Limit: No data.

Lower Flammability Limit: No data.

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Autoignition temperature: No data.

Flammability Class: No data.

Section 6 - Accidental Release Measures

Accidental release: In the event of a major spill, prevent spillage from entering drains or water courses. As a minimum, wear overalls, goggles and gloves. Suitable materials for protective clothing include rubber, PVC. Eye/face protective equipment should comprise as a minimum, protective glasses and, preferably, goggles. If there is a significant chance that vapours or mists are likely to build up in the cleanup area, we recommend that you use a dust mask. Use a P1 mask, designed for use against mechanically generated particles eg silica & asbestos. Usually, no respirator is necessary when using this product. However, if you have any doubts consult the Australian Standard mentioned below (section 8).

Stop leak if safe to do so, and contain spill. Absorb onto sand, vermiculite or other suitable absorbent material. If spill is too large or if absorbent material is not available, try to create a dike to stop material spreading or going into drains or waterways. Sweep up and shovel or collect recoverable product into labelled containers for recycling or salvage, and dispose of promptly. Recycle containers wherever possible after careful cleaning. Refer to product label for specific instructions. After spills, wash area preventing runoff from entering drains. If a significant quantity of material enters drains, advise emergency services. Full details regarding disposal of used containers, spillage and unused material may be found on the label. If there is any conflict between this SDS and the label, instructions on the label prevail. Ensure legality of disposal by consulting regulations prior to disposal. Thoroughly launder protective clothing before storage or re-use. Advise laundry of nature of contamination when sending contaminated clothing to laundry.

Section 7 - Handling and Storage

Handling: Keep exposure to this product to a minimum, and minimise the quantities kept in work areas. Check Section 8 of this SDS for details of personal protective measures, and make sure that those measures are followed. The measures detailed below under "Storage" should be followed during handling in order to minimise risks to persons using the product in the workplace. Also, avoid contact or contamination of product with incompatible materials listed in Section 10.

Storage: This product is a Scheduled Poison. Observe all relevant regulations regarding sale, transport and storage of this schedule of poison. Protect this product from light. Store in the closed original container in a dry, cool, well-ventilated area out of direct sunlight. Make sure that the product does not come into contact with substances listed under "Incompatibilities" in Section 10. Some liquid preparations settle or separate on standing and may require stirring before use. Check packaging - there may be further storage instructions on the label.

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**, Occupational Protective Clothing: AS/NZS 4501 set 2008, Industrial Eye Protection: **AS1336** and **AS/NZS 1337**, Occupational Protective Footwear: **AS/NZS2210**.

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

The ADI for Diuron is set at 0.007mg/kg/day. The corresponding NOEL is set at 0.7mg/kg/day.

The ADI for Hexazinone is set at 0.1mg/kg/day. The corresponding NOEL is set at 10mg/kg/day. ADI means Acceptable Daily Intake and NOEL means No-observable-effect-level. Values taken from Australian ADI List, June 2013.

No special equipment is usually needed when occasionally handling small quantities. The following instructions are for bulk handling or where regular exposure in an occupational setting occurs without proper containment systems.

Ventilation: This product should only be used where there is ventilation that is adequate to keep exposure below the TWA levels. If necessary, use a fan.

Eye Protection: Eye protection is not normally necessary when this product is being used. However, if in doubt, wear suitable protective glasses or goggles.

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 skin contact is likely.

Protective Material Types: We suggest that protective clothing be made from the following materials: rubber, PVC.

Respirator: If there is a significant chance that dusts are likely to build up in the area where this product is being used, we recommend that you use a suitable Dust Mask. Use a P1 mask, designed for use against mechanically generated particles eg silica & asbestos.

Safety deluge showers should, if practical, be provided near to where this product is being used.

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Section 9 - Physical and Chemical Properties:

Physical Description & colour:	White to off-white granulated solid.
Odour:	Faint odour.
Boiling Point:	Not available.
Freezing/Melting Point:	158-159°C (diuron); 115-117°C (hexazinone)
Volatiles:	No specific data. Expected to be low at 100°C.
Vapour Pressure:	0.01mPa; 0.03mPa. Both at 25°C.
Vapour Density:	No data.
Specific Gravity:	No data.
Water Solubility:	42ppm (diuron); 33g/L (hexazinone). Both at 25°C
pH:	No data.
Volatility:	No data.
Odour Threshold:	No data.
Evaporation Rate:	No data.
Coeff Oil/water distribution:	2.8 (diuron) (log P octanol/water)
Autoignition temp:	No data.

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: Protect this product from light. Store in the closed original container in a dry, cool, well-ventilated area out of direct sunlight.

Incompatibilities: strong acids, strong bases, oxidising 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 in reducing atmospheres. 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.

Polymerisation: This product will not undergo polymerisation reactions.

Section 11 - Toxicological Information

Toxicity: An information profile for Diuron is available at <http://extoxnet.orst.edu/pips/ghindex.html>

Acute toxicity: Diuron is classified as not harmful to mammals. The oral LD₅₀ in rats is 3400 mg/kg. The dermal LD₅₀ is greater than 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 anaemia. 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. Developmental 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.

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Classification of Hazardous Ingredients

Ingredient	Risk Phrases
Diuron <ul style="list-style-type: none"> • Carcinogenicity - category 2 • Acute toxicity - category 4 • Specific target organ toxicity (repeated exposure) - category 2 • Hazardous to the aquatic environment (acute) - category 1 • Hazardous to the aquatic environment (chronic) - category 1 	Conc>=25%: Xn; R40; R22; R48/22
Hexazinone <ul style="list-style-type: none"> • Acute toxicity - category 4 • Eye irritation - category 2 • Hazardous to the aquatic environment (acute) - category 1 • Hazardous to the aquatic environment (chronic) - category 1 	No risk phrases at concentrations found in this product

Potential Health Effects

Inhalation:

Short Term Exposure: Available data indicates that this product is not harmful. However product is believed to be mildly irritating, but unlikely to cause anything more than mild discomfort.

Long Term Exposure: No data for health effects associated with long term inhalation.

Skin Contact:

Short Term Exposure: Available data indicates that this product is not harmful. It should present no hazards in normal use. However product is believed to be mildly irritating, but is unlikely to cause anything more than mild transient discomfort.

Long Term Exposure: No data for health effects associated with long term skin exposure.

Eye Contact:

Short Term Exposure: This product is believed to be mildly irritating, to eyes, but is unlikely to cause anything more than mild transient discomfort.

Long Term Exposure: No data for health effects associated with long term eye exposure.

Ingestion:

Short Term Exposure: Significant oral exposure is considered to be unlikely. Available data shows that this product is harmful, but symptoms are not available. However, this product is believed to be mildly irritating to mucous membranes but is unlikely to cause anything more than mild transient discomfort.

Long Term Exposure: No data for health effects associated with long term ingestion.

Carcinogen Status:

SWA: Diuron is classified by SWA as a Class 3 Carcinogen, possibly carcinogenic to humans.

See the SWA website for further details. A web address has not been provided as addresses frequently change.

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

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

Section 12 - Ecological Information

Very toxic to aquatic organisms, may cause long-term adverse effects to the aquatic environment.

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 (48 hour) 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.

Environmental 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.

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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: Special help is available for the disposal of Agricultural Chemicals. The product label will give general advice regarding disposal of small quantities, and how to cleanse containers. However, for help with the collection of unwanted rural chemicals, contact ChemClear 1800 008 182 <http://www.chemclear.com.au/> and for help with the disposal of empty drums, contact DrumMuster <http://www.drummuster.com.au/> where you will find contact details for your area.

Section 14 - Transport Information

Not subject to the ADG Code when transported in Australia by Road or Rail in packages 500kg(L) or less; or IBCs (refer to SP AU01).

UN Number: 3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.

Hazchem Code: 2Z

Special Provisions: 274, 331, 335, 375, AU01

Limited quantities: ADG 7 specifies a Limited Quantity value of 5 kg for this class of product.

Dangerous Goods Class: Class 9: Miscellaneous Dangerous Goods.

Packing Group: III

Packing Instruction: P002, IBC08, LP02

Class 9 Miscellaneous Dangerous Goods shall not be loaded in the same vehicle or packed in the same freight container with Dangerous Goods of Class 1 (Explosives).

Section 15 - Regulatory Information

AICS: All of the significant ingredients in this formulation are compliant with NICNAS regulations.

The following ingredients: Diuron, Hexazinone, are mentioned in the SUSMP.

Section 16 - Other Information

This SDS 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, 7th Edition
AICS	Australian Inventory of Chemical Substances
CAS number	Chemical Abstracts Service Registry Number
Hazchem Code	Emergency action code of numbers and letters that provide information to emergency services especially firefighters
IARC	International Agency for Research on Cancer
SWA	Safe Work Australia, formerly ASCC and NOHSC
NOS	Not otherwise specified
NTP	National Toxicology Program (USA)
R-Phrase	Risk Phrase
SUSMP	Standard for the Uniform Scheduling of Medicines & Poisons
UN Number	United Nations Number

Contact Points:

Call Adama on (02)9431 7800 and ask for the technical manager.

Fax: (02)9431 7700

Police and Fire Brigade:

Dial 000

Emergency contact:

1800 024 973 (24 hours)

If ineffective:

**Dial Poisons Information Centre
(13 1126 from anywhere in Australia)**

THIS SDS SUMMARISES OUR BEST KNOWLEDGE OF THE HEALTH AND SAFETY HAZARD INFORMATION OF THE PRODUCT AND HOW TO SAFELY HANDLE AND USE THE PRODUCT IN THE WORKPLACE. EACH USER MUST REVIEW THIS SDS IN THE CONTEXT OF HOW THE PRODUCT WILL BE HANDLED AND USED IN THE WORKPLACE.

IF CLARIFICATION OR FURTHER INFORMATION IS NEEDED TO ENSURE THAT AN APPROPRIATE RISK ASSESSMENT CAN BE MADE, THE USER SHOULD CONTACT THIS COMPANY SO WE CAN ATTEMPT TO OBTAIN ADDITIONAL INFORMATION FROM OUR SUPPLIERS. OUR RESPONSIBILITY FOR PRODUCTS SOLD IS SUBJECT TO OUR STANDARD TERMS AND CONDITIONS, A COPY OF WHICH IS SENT TO OUR CUSTOMERS AND IS ALSO AVAILABLE ON REQUEST.

Please read all labels carefully before using product.

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Issued by: Adama Australia Pty Ltd

Phone: (02)9431 7800 (office hours)

Poisons Information Centre: 13 1126 from anywhere in Australia, (0800 764 766 in New Zealand)

This SDS is prepared in accord with the SWA document "Preparation of Safety Data Sheets for Hazardous Chemicals - Code of Practice" (Feb 2016)
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<http://www.kilford.com.au/> Phone (02)8321 8866

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