

# MATERIAL SAFETY DATA SHEET

Product Name: Genfarm Dicamba 500 Selective Herbicide

This revision issued: September, 2010

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## Section 1 - Identification of The Material and Supplier

Landmark Operations Limited  
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**Chemical nature:** Dicamba is a benzoic acid derivative. Presented in this product as a salt.  
**Trade Name:** Genfarm Dicamba 500 Selective Herbicide  
**Product Use:** Agricultural herbicide for use as described on the product label.  
**Creation Date:** September, 2004  
**This version issued:** September, 2010 and is valid for 5 years from this date.

## Section 2 - Hazards Identification

### Statement of Hazardous Nature

This product is classified as: Not classified as hazardous according to the criteria of SWA Australia. Not a Dangerous Good according to the Australian Dangerous Goods (ADG) Code.

**Risk Phrases:** Not Hazardous - No criteria found.

**Safety Phrases:** Not Hazardous - No criteria found.

**SUSMP Classification:** S5

**ADG Classification:** None allocated. Not a Dangerous Good.

**UN Number:** None allocated

## Emergency Overview

**Physical Description & colour:** Amber coloured liquid.

**Odour:** Mild amine odour.

**Major Health Hazards:** Symptoms of poisoning with Dicamba include loss of appetite (anorexia), vomiting, muscle weakness, slowed heart rate, shortness of breath, central nervous system effects (victim may become excited or depressed), benzoic acid in the urine, incontinence, cyanosis (bluing of the skin and gums), and exhaustion following repeated muscle spasms. In addition to these symptoms, inhalation can cause irritation of the linings of the nasal passages and the lungs, and loss of voice.

## Potential Health Effects

See section 11 for long term exposure details

### Inhalation

**Short term exposure:** Significant inhalation exposure is considered to be unlikely. Available data indicates that this product is not harmful. In addition product is unlikely to cause any discomfort or irritation.

### 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.

### Eye Contact:

**Short term exposure:** Exposure via eyes is considered to be unlikely. This product is believed to be mildly irritating, to eyes, but is unlikely to cause anything more than mild transient discomfort.

### Ingestion:

**Short term exposure:** Significant oral exposure is considered to be unlikely. However, this product is believed to be mildly irritating to mucous membranes but is unlikely to cause anything more than mild transient discomfort.

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## Carcinogen Status:

**SWA:** No significant ingredient is classified as carcinogenic by SWA.

**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 No	Conc,%	TWA (mg/m <sup>3</sup> )	STEL (mg/m <sup>3</sup> )
Dimethylamine dicamba	2300-66-5	50	not set	not set
Water	7732-18-5	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 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 should not be exceeded for more than 15 minutes and should not be repeated for 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 MSDS with you when you call.

**Inhalation:** First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

**Skin Contact:** Blot or brush away excess chemical. Wash gently and thoroughly with water (use non-abrasive soap if necessary) for 10 minutes or until chemical is removed. Under running water, remove contaminated clothing, shoes and leather goods (e.g. watchbands and belts). If irritation persists, repeat flushing and obtain medical advice.

**Eye Contact:** Quickly and gently blot or brush product away. Flush the contaminated eye(s) with lukewarm, gently flowing water until the product is removed or until irritation has ceased, while holding the eyelid(s) open. Obtain medical advice if irritation becomes painful or lasts more than a few minutes.

**Ingestion:** If product is swallowed or gets in mouth, wash mouth with water and give some water to drink. If symptoms develop, or if in doubt contact a Poisons Information Centre or 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.

This product is likely to decompose only after heating to dryness, followed by further strong heating. Fire decomposition products from this product may be toxic if inhaled. Take appropriate protective measures.

**Extinguishing Media:** Not Combustible. Use extinguishing media suited to burning materials.

**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.

**Autoignition temperature:** Not applicable - does not burn.

**Flammability Class:** Does not burn.

## Section 6 - Accidental Release Measures

**Accidental release:** In the event of a major spill, prevent spillage from entering drains or water courses. Wear full protective clothing including eye/face protection. All skin areas should be covered. See below under Personal Protection regarding Australian Standards relating to personal protective

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equipment. 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 respirator. 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 MSDS 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 MSDS 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 class of poison. Store packages of this product in a cool place. 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 "Materials to avoid" 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<sup>3</sup>)**

**STEL (mg/m<sup>3</sup>)**

Exposure limits have not been established by SWA for any of the significant ingredients in this product.

The ADI for Dimethylamine dicamba is set at 0.03mg/kg/day. The corresponding NOEL is set at 3mg/kg/day. ADI means Acceptable Daily Intake and NOEL means No-observable-effect-level. Values taken from Australian ADI List, Dec 2003.

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:** No special ventilation requirements are normally necessary for this product. However make sure that the work environment remains clean and that vapours and mists are minimised.

**Eye Protection:** Eye protection such as protective glasses or goggles is recommended when this product is being used.

**Skin Protection:** You should avoid contact even with mild skin irritants. Therefore you should wear suitable impervious elbow-length gloves and facial protection when handling this product. See below for suitable material types.

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

**Respirator:** Usually, no respirator is necessary when using this product. However, if you have any doubts consult the Australian Standard mentioned above.

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## Section 9 - Physical and Chemical Properties:

<b>Physical Description &amp; colour:</b>	Amber coloured liquid.
<b>Odour:</b>	Mild amine odour.
<b>Boiling Point:</b>	Approximately 108°C at 100kPa.
<b>Freezing/Melting Point:</b>	Approximately -5°C.
<b>Volatiles:</b>	Water component.
<b>Vapour Pressure:</b>	2.37 kPa at 20°C (water vapour pressure).
<b>Vapour Density:</b>	No data.
<b>Specific Gravity:</b>	1.185 at 20°C
<b>Water Solubility:</b>	Completely soluble in water.
<b>pH:</b>	No data.
<b>Volatility:</b>	No data.
<b>Odour Threshold:</b>	No data.
<b>Evaporation Rate:</b>	No data.
<b>Coeff Oil/water distribution:</b>	No data
<b>Autoignition temp:</b>	Not applicable - does not burn.

## 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:** This product should be kept in a cool place, preferably below 30°C. Store in the closed original container in a dry, cool, well-ventilated area out of direct sunlight.

**Incompatibilities:** strong acids, strong bases, strong oxidising agents.

**Fire Decomposition:** This product is likely to decompose only after heating to dryness, followed by further strong heating. 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.

**Polymerisation:** This product will not undergo polymerisation reactions.

## Section 11 - Toxicological Information

Dicamba at high levels over a long period of time has been shown to cause changes in the liver and a decrease in body weight in rats. In mice, some enlargement of liver cells has occurred.

**Reproductive effects:** In a three-generation study, Dicamba did not affect the reproductive capacity of rats. When rabbits were given doses of 0.5, 1, 3, 10, or 20 mg/kg/day of technical Dicamba from days 6 through 18 of pregnancy, toxic effects on the mothers, slightly reduced foetal body weights, and increased loss of fetuses occurred at the 10 mg/kg dose. These data suggest that Dicamba is unlikely to cause reproductive effects in humans at expected exposure levels.

**Teratogenic effects:** No teratogenic effects have been shown in lab animals such as rabbits and rats exposed to Dicamba.

**Mutagenic effects:** Dicamba has not been shown to be a mutagen.

**Carcinogenic effects:** Rats fed up to 25 mg Dicamba/kg/day for 2 years showed no increased incidence of tumours. This evidence suggests that Dicamba is not carcinogenic.

**Organ toxicity:** Chronic exposure can lead to the development of the same symptoms as described for acute exposure.

**Fate in humans and animals:** Dicamba was excreted rapidly by rats, mainly in the urine, when administered orally or subcutaneously; 1 to 4% was excreted in the faeces. Mice, rats, rabbits, and dogs excreted 85% of an oral dose as unmetabolized Dicamba in the urine within 48 hours of dosing. Eventually, between 90 and 99% of the dose was excreted unmetabolized in the urine. This indicates that Dicamba is rapidly absorbed into the bloodstream from the gastrointestinal tract. When Dicamba

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was ingested daily in the feed, the concentrations in different organs reached a steady state within 2 weeks. When daily intake stopped, storage in the organs declined rapidly. It is therefore concluded that Dicamba does not bioaccumulate in mammalian tissues.

## Section 12 - Ecological Information

**Effects on birds:** Dicamba is practically nontoxic to birds. The LD<sub>50</sub> for technical Dicamba in mallard ducks is 2009 mg/kg. The 8-day dietary LC<sub>50</sub> in mallards and in bobwhite quail is greater than 10,000 ppm.

**Effects on aquatic organisms:** Dicamba is of low toxicity to fish. The LC<sub>50</sub> (96-hour) for technical Dicamba is 135 mg/L in rainbow trout and bluegill sunfish, greater than 100 mg/L in grass shrimp, and greater than 180 mg/L in fiddler crab and sheepshead minnow. The LC<sub>50</sub> (48-hour) for Dicamba is 35 mg/L in rainbow trout, 40 mg/L in bluegill, 465 mg/L in carp, and 110 mg/L in Daphnia magna, a small freshwater crustacean.

**Effects on other organisms:** Dicamba poses little threat to wildlife. Dicamba is not toxic to bees.

### Environmental Fate:

**Breakdown in soil and groundwater:** Dicamba is moderately persistent in soil. The half-life of Dicamba in soil is typically 1 to 4 weeks. Under conditions suitable for rapid metabolism, the half-life is less than 2 weeks. Metabolism by soil micro-organisms is the major pathway of loss under most soil conditions. The rate of biodegradation increases with temperature and increasing soil moisture, and tends to be faster when soil is slightly acidic. When soil moisture increases above 50%, the rate of biodegradation declines. Dicamba slowly breaks down in sunlight. Volatilization from soil surfaces is probably not significant, but some volatilization may occur from plant surfaces. It is stable to water and other chemicals in the soil. Dicamba does not bind to soil particles and is highly soluble in water. It is therefore highly mobile in the soil and may contaminate groundwater. In humid areas, Dicamba will be leached from the soil in 3-12 weeks.

**Breakdown in water:** In water, microbial degradation is the main route of Dicamba disappearance. Photolysis may also occur. Aquatic hydrolysis, volatilization, adsorption to sediments, and bioconcentration are not expected to be significant.

**Breakdown in vegetation:** Dicamba is rapidly taken up by the leaves and roots of plants, and it is readily translocated to other plant parts. In some plant species, Dicamba accumulates in the tips of mature leaves. Desirable broadleaf plants such as fruit trees and tomatoes may be harmed during their growth and development stages. Residues of Dicamba on treated plants can disappear through exudation from the roots into the surrounding soil, metabolism within the plant, or by loss from leaf surfaces.

## 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

**ADG Code:** This product is not classified as a Dangerous Good. No special transport conditions are necessary unless required by other regulations.

## Section 15 - Regulatory Information

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

The following ingredient: dicamba is mentioned in the SUSMP.

## Section 16 - Other Information

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

### Acronyms:

<b>ADG Code</b>	Australian Code for the Transport of Dangerous Goods by Road and Rail, 7th Edition
<b>AICS</b>	Australian Inventory of Chemical Substances
<b>CAS number</b>	Chemical Abstracts Service Registry Number



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<b>Hazchem Number</b>	Emergency action code of numbers and letters that provide information to emergency services especially firefighters
<b>IARC</b>	International Agency for Research on Cancer
<b>SWA</b>	Safe Work Australia, formerly ASCC and NOHSC
<b>NOS</b>	Not otherwise specified
<b>NTP</b>	National Toxicology Program (USA)
<b>R-Phrase</b>	Risk Phrase
<b>SUSMP</b>	Standard for the Uniform Scheduling of Medicines & Poisons
<b>UN Number</b>	United Nations Number

THIS MSDS 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 MSDS 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.

This MSDS is prepared in accord with the SWA document "National Code of Practice for the Preparation of Material Safety Data Sheets" 2nd Edition [NOHSC:2011(2003)]

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