

Millennium

Turf Herbicide

Millennium Turf Herbicide available from Nuturf Australia has been formulated in response to the needs of the professional turf manager.



Millennium contains a unique mix of three systemic active ingredients that deliver a rapid response and outstanding overall effectiveness against a range of troublesome broadleaf weeds.

The active ingredients in Millennium – 2,4-D, Clopyralid and Dicamba are all translocated efficiently throughout target weeds, resulting in greater effectiveness against hard to kill weeds and limited potential for regrowth.

As a result of this strength, Millennium has a reduced rate of application compared to many of the broadleaf herbicides currently available. In replicated trial work, it consistently delivered equivalent or superior levels of control than industry standard herbicides.



Features and Benefits

Three powerful systemic active ingredients – broad spectrum of activity along with increased control of hard to kill weeds at low use rates

Active ingredients highly mobile in target plant – results in rapid knockdown and limits the need for repeat applications

Non volatile, amine formulation – less potential for off-target movement and suitable for ester exclusion zones

Turf safety on a range of species – reduced phytotoxicity concerns, no plant back restrictions

Low Poison Scheduling (S5) – increased safety for users, the public and environment.

Environmental and Technical Information

Millennium is a Group I herbicide and its mode of action is through the inhibition of plant cell growth. All active ingredients are readily absorbed through the foliage and translocated to the growing parts of the weed.

Millennium Turf Herbicide has a low volatility amine formulation that significantly reduces off target movement. Therefore, millennium is an ideal herbicide for use in environmentally sensitive areas and where the use of ester-based broadleaf herbicide has been banned. Millennium has a low poison scheduling (S5) and low toxicity that offers increased safety to the users and the public.

Application Information

Millennium provides most effective control when applied in an acidic spray solution, therefore add a tank acidifier such as LI 700 at 500 ml per 100 L of water to achieve acidic tank conditions.

Millennium is best applied when weeds are actively growing to ensure the movement of chemicals with the plant sugars to the growing regions of the weed.

Do not spray if rain seems likely to occur within 4 hours from the time of application.



Situation	Weeds	Rate	Critical Comments
<div style="border: 1px solid black; border-radius: 15px; padding: 10px; background-color: #008000; color: white; text-align: center; width: fit-content; margin: 0 auto;"> <p>Pack Size</p> <p>Millennium is available in a 10 L container as an aqueous concentrate</p> </div>	White Clover (<i>Trifolium repens</i>)	3.5-4.5L per ha in 400L of water.	Apply to actively growing weeds.
	Bindii (<i>Soliva sessillis</i>)	35-45mL per 100m ² in 4L of water.	Use lower rate for weeds up to 4 leaf stage.
	Cats Ear (<i>Hypochoeris spp.</i>)		DO NOT mow turf for 2 days after treatment.
	Capeweed (<i>Arctotheca calendula</i>)		Do not apply to Buffalo grass.
	Cudweed (<i>Gnaphalium pennsylvanicum</i>)		Cudweed Control For mature cudweed populations a repeat application is necessary to gain acceptable control.
Lambs Tongue (<i>Plantago lanceolata.</i>)			
	Burr medic (<i>Medicago polymorpha</i>)	2.5L per ha in 400L of water. 25ml per 100m ²	

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Emergency Response: 1800 631 008
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Unit B2 Lidcombe Business Park
3-9 Birnie Ave Lidcombe, NSW 2141
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Phone: (02) 9395 1200
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(A/H) 1800 033 498

Hazardous according to the criteria of NOHSC Australia.

I IDENTIFICATION

Product Name: Nuturf Millennium Herbicide

Other Names: None.

Product Code: None.

UN No: None allocated

Hazchem Code: None allocated

Dangerous Goods Class: None allocated

Sub Risk Class: None allocated

Packaging Group: None allocated

Poison Schedule: S5

Chemical Family: Water solution of ingredients (see below).

Uses: For the control of clover and bindii as directed on the label.

Physical Appearance & Properties

Appearance & Odour: Dark amber coloured liquid. Characteristic amine odour.

Melting/softening point: Approximately 0°C.

Boiling point and vapour pressure: Approximately 100°C at 100kPa.

Volatile materials: Water component.

Flashpoint: Does not burn.

Flammability limits: Not applicable. This product does not burn.

Specific gravity: Not available.

Solubility in water: Completely soluble.

Corrosiveness: Not corrosive.

Vapour Pressure: 18mm Hg at 20°C (water vapour pressure).

Ingredients

Chemical Entity	CAS No	Proportion, %	Worksafe Exposure Limits	
			TWA, mg/m ³	STEL, mg/m ³
2,4-D, (diethanolamine salt)	5742-19-8	36 *	10	not set
Clopyralid (present as mono-ethanolamine salt)	1702-17-6	4.5 *	not set	not set
Dicamba (present as diethanolamine salt)	1918-00-9	4.7 *	not set	not set
Water	7732-18-5	to 100	not set	not set

* Note that these salts are added at a somewhat higher levels to give the stated concentrations of the active components.

This is a commercial product whose exact ratio of components may vary. Trace quantities of impurities are also likely.

II HEALTH HAZARD DATA

Health Effects:

No specific data is available for the product for chronic exposure symptoms. The ingredients are not listed as carcinogenic in Worksafe's document "Exposure Standards for Atmospheric Contaminants in the Occupational Environment" (May 1995), nor in NOHSC's "List of Designated Hazardous Substances" (April 1999).

Acute Effects:

Swallowed: The concentrate is considered harmful if swallowed. Ingestion of 2,4-D in relatively large amounts can produce headaches, nausea, lethargy, motor weakness and inco-ordination.

Eye: This product is irritating to the eyes. It will cause discomfort such as stinging pain, watering and redness of the eyes. Effects may last after exposure has ceased, and in severe exposure, long lasting or even permanent effects such as corneal damage can occur.

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Skin: This product is mildly irritating to skin. However, it is unlikely to cause more than minor discomfort or effects such as itchiness, occasional small blisters or slight skin reddening.

Inhalation: No inhalation hazards incidental to normal handling operations are anticipated from this product when used at room temperatures.

First Aid:

If poisoning occurs, contact a Doctor or Poisons Information Centre. Phone 13 1126 from anywhere in Australia. If possible have this MSDS or product label with you.

Swallowed: If swallowed, do NOT induce vomiting. Wash mouth with water and give a glass of water to drink. Seek medical attention.

Eyes: If this product comes into contact with eyes, hold open and wash with running water for at least 15 minutes. Ensure irrigation under eyelids by occasionally lifting them. Do not try to remove contact lenses unless trained. Seek medical attention.

Skin: If product gets on skin, thoroughly wash contacted areas. No further measures should normally be required unless irritation is noticed. If irritation persists, seek medical attention.

Inhalation: No first aid measures normally required. However, if vapours or mists have been inhaled, and irritation has developed, remove to fresh air and observe until recovered. If irritation becomes painful or persists more than about 30 minutes, seek medical advice.

Advice to Doctor: Treat symptomatically. Note the nature of this product.

III PRECAUTIONS FOR USE

Risk Phrases are: R22, R36. Harmful if swallowed. Irritating to eyes.

Exposure Standards:

A time weighted average (TWA) has been established for 2,4-D, present in significant quantities in this product. This value is 10mg/m³. The corresponding STEL level is "not set". 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 exposure value at the TWA is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week. See ingredients section on page 1 of this data sheet. The ADI (Acceptable Daily Intake) for 2,4-D is set at 0.01mg/kg/day. The corresponding NOEL (No-observable-effect-level) is set at 1mg/kg/day. The ADI (Acceptable Daily Intake) for Dicamba is set at 0.03mg/kg/day. The corresponding NOEL (No-observable-effect-level) is set at 3mg/kg/day. The ADI (Acceptable Daily Intake) for clopyralid is set at 0.5mg/kg/day. The corresponding NOEL (No-observable-effect-level) is set at 50mg/kg/day. Values taken from Australian ADI List, January 2001.

Engineering Controls:

In industrial situations, concentration values below the TWA value should be maintained. Values may be reduced by process modification, use of local exhaust ventilation, capturing substances at the source, or other methods. If you believe air borne concentrations of mists, dusts or vapours are high, you are advised to modify the process or environment to reduce the problem.

Personal Protection:

Poisonous if swallowed. Avoid contact with eyes and skin. Do not inhale spray mist. When preparing spray wear PVC or rubber apron elbow length PVC gloves and face shield. When using the prepared spray wear face shield. If product on skin, immediately wash area with soap and water. After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water. After each days use, wash gloves, face shield and contaminated clothing.

Respiratory Protection: It is usually safe to not use a dust mask or respirator protection on account of this product. However, if the product is being used in dusty or confined conditions, use of a mask or respirator may be preferred. For help in selecting suitable equipment, consult AS/NZS 1715.

Protective Gloves: Impermeable protective gloves should be worn when you are using this product, to prevent irritation. For help in selecting suitable equipment, consult AS 2161.

Eye Protection: Protective eyewear should be worn when using this product. Eye contact may prove painful and dangerous and should be avoided. Consult AS1336 and AS/NZS 1337 for advice on Industrial Eye Protection.

Clothing: Clean overalls or protective clothing should be worn, preferably with an apron. Consult AS2919 for advice on Industrial Clothing.

Safety Boots: Wearing safety boots in industrial situations is advisory. Consult AS/NZS2210 for advice on Occupational Protective Footwear.

Always wash hands before smoking, eating or using the toilet. Wash contaminated clothing and other protective equipment before storing or re-using.

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IV SAFE HANDLING INFORMATION

Safety Phrases are: S20, S25. When using, do not eat or drink. Avoid contact with eyes.

Storage & Transport

No special storage and transport requirements. This product has no UN classification. This product is a S5 Poison. Observe all relevant regulations regarding sale, transport and storage of this class of product. Containers should be kept closed in order to minimise contamination. Keep from extreme heat and open flames, and make sure that the product does not come into contact with substances listed under "Materials to avoid" below.

Spills & Disposals

In the event of a major spill, prevent spillage from entering drains or water courses. Immediately call the Fire Brigade. Wear full protective clothing including face mask, face shield and gauntlets. All skin areas should be covered. Thoroughly launder protective clothing before storage or re-use. See above under Personal Protection regarding Australian Standards relating to personal protective equipment. Stop leak if safe to do so, and contain spill. Absorb onto sand, vermiculite or other suitable absorbent material. Sweep up and shovel or collect recoverable product into labelled containers for recycling or salvage, and dispose of promptly. After spills, wash area preventing runoff from entering drains. If a significant quantity of material enters drains, advise emergency services. Triple or preferably pressure rinse containers before disposal. Add rinsings to spray tank. Do not dispose of undiluted chemicals on site. If recycling, replace cap and return clean containers to recycler or designated collection point. If not recycling, break, crush, or puncture and bury empty containers in a local authority landfill. If no landfill is available, bury the containers below 500mm in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots. Empty containers and product should not be burnt. If there is any conflict between this MSDS and the label, instructions on the label prevail. Dispose of only in accord with all regulations. Advise laundry of nature of contamination when sending contaminated clothing to laundry.

Fire & Explosion Hazard

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

Flashpoint: Does not burn.

Flammability limits: Not applicable. This product does not burn.

Extinguishing Media: This product does not burn. Use extinguishing media suited to the materials that are burning.

Special Fire Fighting procedures: When fighting fires involving significant quantities of this product, wear safety boots, non-flammable overalls, gloves, hat and preferably, goggles.

Unusual Fire & Explosion Hazards: Fire decomposition products from this product may form toxic mixtures in confined spaces. Likely to decompose only after heating to dryness followed by further strong heating.

Stability: This product is unlikely to spontaneously decompose.

Polymerisation: This product is unlikely to spontaneously polymerise.

Decomposition Products: Carbon dioxide, and if combustion is incomplete, carbon monoxide and smoke. Nitrogen and its compounds, and under some circumstances, oxides of nitrogen. Water.

Materials to avoid: No particular incompatibilities.

V OTHER INFORMATION

This MSDS is prepared in accord with the Worksafe Australia document "National Code of Practice for the Preparation of Material Safety Data Sheets", 1994.

Contact Points:

Police and Fire Brigade:	Dial	AUSTRALIA 000
If ineffective:	Dial	1100 (Exchange)
For emergency response: B/H	Dial	1800 631 008
For emergency response: A/H	Dial	1800 033 498
National Poisons Information Centre:	Dial	13 1126 (from anywhere in Australia)

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 SHOULD READ THIS MSDS AND CONSIDER THE INFORMATION IN THE CONTEXT OF HOW THE PRODUCT WILL BE HANDLED AND USED IN THE WORKPLACE INCLUDING IN CONJUNCTION WITH OTHER PRODUCTS. IF CLARIFICATION OR FURTHER INFORMATION IS NEEDED TO ENSURE THAT AN APPROPRIATE RISK ASSESSMENT CAN BE MADE, THE USER SHOULD CONTACT THIS COMPANY. THE 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.

MATERIAL SAFETY DATA SHEET

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