

## Section 1 - Identification of Chemical Product and Company

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**Trade Name:** Nuturf Dimension EW Herbicide  
**Product Use:** Pre-Emergent Herbicide  
**Creation Date:** August 2008

## Section 2 - Hazards Identification

### Statement of Hazardous Nature

This product is classified as hazardous –Xn Harmful, according to the criteria of ASCC Australia  
This product is not a Dangerous Good according to the Australian Dangerous Goods (ADG) Code for road and rail transport but is classified as a Dangerous Good for transport by sea and air – Marine Pollutant

**Risk Phrases:** R36/38 Irritating to eyes and skin, R43 May cause sensitization by skin contact.

R50: Very toxic to aquatic organisms. R53: May cause long-term adverse effects in aquatic environment.

**Safety Phrases:** S23: Do not breathe vapour or spray mist. S24/25: Avoid contact with skin and eyes. S61: Avoid released to the environment. S62: If swallowed, do not induce vomiting: seek medical advice immediately and show the container or label.

**SUSDP Classification:** S5

**ADG Classification:** Not a Dangerous Good for road & rail transport (see section 14 for Sea & Air transport)

**Packaging Group:** N/A

**UN Number:** None allocated

**Hazchem Code:** 2X

### Emergency Overview

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

**Odour:** Faint odour.

**Major Health Hazards:** May cause severe eye irritation. May cause severe corneal injury.

### Potential Health Effects

**Inhalation:** No adverse effects are anticipated from single exposure to vapour.

**Skin Contact:** Brief contact may cause moderate skin irritation with local redness. May cause peeling of the skin. Prolonged skin contact is unlikely to result in absorption of harmful amounts.

**Eye Contact:** May cause severe eye irritation. May cause severe corneal injury. Vapour may cause lacrimation (tears). In humans, eye irritation resulted from brief (minutes) exposure to Cyclohexanone vapour concentrations of 50 ppm and above.

**Ingestion:** Low toxicity if swallowed. Small amounts swallowed incidental to normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury.

### Carcinogen Status:

**ASCC:** No significant ingredient is classified as carcinogenic by ASCC at stated concentration.

**NTP:** No significant ingredient is classified as carcinogenic by NTP at stated concentration

**IARC:** No significant ingredient is classified as carcinogenic by IARC at stated concentration

## Section 3 - Composition/Information on Ingredients

### Ingredients

	CAS No	Conc.%	TWA (mg/m3)	STEL (mg/m3)
Dithiopyr	97886-45-8	24	0.25	0.75
Cyclohexanone	108-94-1	10-20	25 (100 skin)	

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. A "skin" notation following the exposure guideline refers to the potential for dermal absorption of the material including mucous membranes and the eyes either by contact with vapors or by direct skin contact. It is intended to alert the reader that inhalation may not be the only route of exposure and that measures to minimize dermal exposures should be considered.*

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## 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. Never give fluids or induce vomiting if a patient is unconscious or convulsing regardless of cause of injury. If breathing difficulties occur seek medical attention immediately.

**Ingestion:** Call Poison Information Centre or doctor immediately. **Do not** induce vomiting unless instructed to do so by medical advice. Do not give any liquid to the affected person. Do not give anything by mouth to an unconscious person.

**Inhalation:** Move person to fresh air. If person is not breathing, call 000 or ambulance, and then give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask etc). Call the Poisons Information Centre or doctor for treatment advice

**Skin Contact:** Take off contaminated clothing. Wash skin with soap and plenty of water for 15-20 minutes. Call the Poisons Information Centre or doctor for treatment advice. Wash clothing before reuse. Shoes and other leather items, which cannot be decontaminated, should be disposed of properly.

**Eye Contact:** Wash immediately and continuously with flowing water for at least 30 minutes. Remove contact lenses, if present, after the first 5 minutes, and then continue washing. Obtain prompt medical consultation preferably from an ophthalmologist. Call the Poisons Information Centre or doctor.

**Notes to Doctor:** If lavage is performed, suggest endotracheal and/or oesophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. The decision to induce vomiting should be made by a doctor. Chemical eye burns may require extended irrigation. Obtain prompt consultation, preferably from an ophthalmologist. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

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## Section 5 - Fire Fighting Measures

**Fire and Explosion Hazards:** This product is classified as a C2 combustible product. There is a slight risk of an explosion from this product if it is involved in a fire. Pesticide particulates can become airborne.

**Extinguishing Media:** Water fog, foam, or carbon dioxide.

**Fire Fighting:** If a significant quantity of this product is involved in a fire, call the fire brigade. Immediately evacuate area. Fire fighters to wear non-flammable protective clothing, gloves, hat, goggles and self contained breathing apparatus. All skin areas to be covered.

**Flash point:** > 100°C (TCC)

**Upper Flammability Limit:** Not determined

**Lower Flammability Limit:** Not determined

**Auto ignition temperature:** No data

**Flammability Class:** N/A

**Fire Decomposition Products:** Toxic and irritating gases will be formed if product is involved in a fire.

**HAZCHEM:** 2X

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## Section 6 - Accidental Release Measures

**Accidental release:** In the event of a major spill, prevent spillage from entering drains or water courses. Evacuate the spill area and deny entry to unnecessary and unprotected personnel. Immediately call the Fire Brigade. Wear full protective chemically resistant clothing including face mask, face shield, gauntlets and self contained breathing apparatus. See 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. Avoid using sawdust or other combustible material. Sweep up and shovel or collect recoverable product into labelled containers for recycling or salvage, and dispose of promptly. Spill residues may be cleaned using water and detergent. Wash area preventing runoff from entering drains. If a significant quantity of material enters drains, advise emergency services. If recycling, replace cap and return clean containers to recycler or designated collection point. Empty containers should not be burnt. If there is any conflict between this MSDS and label, instructions on the label prevail. Dispose of only in accord with all regulations. Launder all contaminated clothing before re-use and advise laundry of nature of contaminant.

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## Section 7 - Handling and Storage

**Handling:** Keep out of reach of children. Do not swallow. Avoid contact with eyes, skin and clothing. Avoid breathing vapours and spray mist. Handle concentrate in a ventilated area. This product is a S5 Poison. Observe all relevant regulations regarding sale, transport and storage of this class of product. 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. Users should wash hands before eating, drinking, smoking or using toilet.

**Storage:** Store in tightly closed original container in a well-ventilated area out of direct sunlight when not in use. Do not store with food, feedstuffs, fertilizers and seeds. 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" in Section 10.

**Note:** This product is combustible and therefore, for Storage, meets the definition of Dangerous Goods in some states. We suggest you consult your state's Dangerous Goods laws in order to clarify your obligations regarding the storage of this product.

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## Section 8 - Exposure Controls and Personal Protection

This product is intended for outdoor use where engineering controls are not necessary. 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 <sup>3</sup> )	STEL (mg/m <sup>3</sup> )	ADI (mg/Kg/day)	NOEL (mg/Kg/day)
Dithiopyr	0.25	0.75	0.005	0.5
Cyclohexanone	25 (100 skin)	not set		

*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. A "skin" notation following the exposure guideline refers to the potential for dermal absorption of the material including mucous membranes and the eyes either by contact with vapours or by direct skin contact. It is intended to alert the reader that inhalation may not be the only route of exposure and that measures to minimize dermal exposures should be considered. ADI means Acceptable Daily Intake and NOEL means No-observable-effect-level.*

**Ventilation:** Avoid vapours and provide local exhaust ventilation where necessary.

**Eye Protection:** To avoid contact with eyes, wear face shield, goggles or safety glasses. Emergency eyewash should be readily accessible.

### MATERIAL SAFETY DATA SHEET

**Skin Protection:** Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Polyethylene, Ethyl vinyl alcohol laminate (EVAL). Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full-body suit will depend on the task. Remove contaminated clothing immediately, wash skin area with soap and water, and launder clothing before reuse or dispose of properly. Items which cannot be decontaminated, such as shoes, belts and watchbands, should be removed and disposed of properly.

**Respirator:** Use P2 type canister respirator if required

**Safety Boots:** Leather may be permeable to the concentrate, so wear rubber or plastic boots  
Provision of eye wash facilities and safety shower recommended.

Wash hands before eating, drinking, smoking or going to toilet, launder protective clothing before re-use or destroy contaminated clothing. Advise laundry of nature of contamination.

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## Section 9 - Physical and Chemical Properties:

<b>Physical Description &amp; colour:</b>	Tan liquid
<b>Odour:</b>	Faint
<b>Melting Point:</b>	Not determined (liquid at room temperatures)
<b>Volatility:</b>	no data
<b>Vapour Pressure:</b>	$4 \times 10^{-6}$ mmHg @ 25°C
<b>Vapour Density:</b>	no data
<b>Specific Gravity:</b>	1.105 g/mL @ 20 °C
<b>Water Solubility:</b>	Emulsifiable
<b>pH:</b>	4.5 (1% aqueous solution)
<b>Flash Point</b>	>100°C
<b>Viscosity:</b>	no data

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## Section 10 - Stability and Reactivity

**Reactivity:** This product is stable under normal temperatures and pressures, when stored and handled in accordance with this MSDS Avoid contact with ignition sources.

**Conditions to Avoid:** Store away from heat, fire, or ignition sources.

**Incompatibilities:** None known

**Fire Decomposition:** If product is involved in a fire, oxides of nitrogen, hydrogen fluoride, and oxides of sulfur may be formed along with carbon monoxide and carbon dioxide.

**Polymerisation:** Unlikely to spontaneously polymerise

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## Section 11 - Toxicological Information

Data from laboratory studies For Dithiopyr:

**Eye Effects:** Not determined

**Dermal:** LD<sub>50</sub> Dermal (Rat) >5000mg/kg; LD<sub>50</sub> Dermal (Rabbit) >5000mg/kg

**Oral:** LD<sub>50</sub> Oral (Rat) >5000mg/kg; LD<sub>50</sub> Oral (Mouse) >5000mg/kg

**Inhalation:** The aerosol LC<sub>50</sub> for rats is >5.41 mg/L for 4 hours.

**Systemic(other target organ) Effects:** For Dithiopyr, in animals, effects have been reported on the following organs: liver, kidney, blood, thyroid, adrenal gland, and gall bladder. For Cyclohexanone, in animals, effects have been reported on the following organs: central nervous system and spleen.

**Carcinogenicity:** Dithiopyr did not cause cancer in laboratory animals.

**Teratology (birth defects):** Dithiopyr did not cause birth defects or other effects in the foetus even at doses which caused toxic effects in the mother. Excessive ingestion of 2-ethylhexanol caused birth defects in laboratory animals only at doses toxic to the mother. Cyclohexanone did not cause birth defects in laboratory animals. In laboratory animals, Cyclohexanone has been toxic to the foetus only at doses toxic to the mother.

**Mutagenicity:** For Dithiopyr, in-vitro genetic toxicity studies were negative. For Cyclohexanone, in-vitro and animal genetic toxicity studies were negative in some cases and positive in other cases.

**Reproductive Effects:** In animal studies, Dithiopyr did not interfere with reproduction. Cyclohexanone caused reduced growth and survival of offspring in an animal reproduction study. Dose levels producing this effect also caused central nervous system effects in parental animals.

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## Section 12 - Ecological Information

**Ecotoxicity:** Based largely or completely on information for Dithiopyr.

**Effects on aquatic organisms:**

Based on information for Dithiopyr: - Highly toxic to aquatic organisms on an acute basis; LC<sub>50</sub> or EC<sub>50</sub> is between 0.1 and 1 mg/L in most sensitive species tested

Based largely or completely on tested components: Material is practically non-toxic to aquatic organisms on an acute basis (LC<sub>50</sub> or EC<sub>50</sub> is >100 mg/L in the most sensitive species tested).

**Effects on birds:** Material is practically non-toxic to birds on an acute basis (LD<sub>50</sub> is >2000 mg/kg). Material is practically non-toxic to birds on a dietary basis (LC<sub>50</sub> is >5000 ppm).

**Effects on other organisms:** No data

**Environmental Fate:**

Based largely or completely on information for Dithiopyr: Bioconcentration potential is moderate (BCF is between 100 and 3000 or Log P<sub>ow</sub> between 3 and 5).

Based largely or completely on tested components: Bioconcentration potential is low (BCF is <100 or Log P<sub>ow</sub> <3). Potential for mobility in soil is very high (K<sub>oc</sub> is between 0 and 50).

**Degradation & Persistence:**

Based largely or completely on information for Dithiopyr: Field half-life is between 17 and 61 days. Photolitic half-life in water is 17.6 – 20.6 days. It is photolytically stable on soil surfaces. Hydrolysis does not occur. No relevant information found on ready biodegradation.

Based largely or completely on tested components: Material is readily biodegradable. Passes OECD test(s) for ready biodegradable

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## Section 13 - Disposal Considerations

**Disposal:** Full details regarding disposal of used containers, and unused material may be found on the label. If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities. If there is any conflict between this MSDS and the label, instructions on the label prevail. Dispose of only in accord with all regulations.

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## Section 14 - Transport Information

**ADG Code:** This product is not classified as a Dangerous Goods for transport by road or rail. No special transport conditions are necessary unless required by other regulations. However is considered a DG for transport by sea or air as it is a marine pollutant. **UN No:** 3082, **Class:** 9, **Packing group:** III

**SHIPPING NAME:** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (DITHIOPYR)  
Marine Pollutant

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## Section 15 - Regulatory Information

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

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## Section 16 - Other Information

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

**Glossary:**

**ADG Code:** Australian Code for the Transport of Dangerous Goods by Road and Rail

**AICS:** Australian Inventory of Chemical Substances

**ASCC:** Australian Safety & Compensation Council

**BCF: Bioconcentration Factor** - a measure for the characterization of the accumulation of a chemical in an organism. It is defined as the concentration of a chemical in an organism (plants, micro-organisms, animals) divided by the concentration in a reference compartment (e.g. food, surrounding water).

**CAS number:** Chemical Abstracts Service Registry Number

**Hazchem Number:** Emergency action code of numbers and letters that provide information to emergency services especially fire-fighters

**IARC:** International Agency for Research on Cancer

**K<sub>oc</sub>:** The organic carbon partition coefficient (mL soil water /g organic carbon).

**LC<sub>50</sub>:** Lethal Concentration 50%. A concentration of chemical in air or water that will kill 50% of the test organisms.

**LD<sub>50</sub>:** Lethal Dose-50%. The doses of a chemical that will kill 50% of the test animals receiving it.

**NTP:** National Toxicology Program (USA)

**P<sub>ow</sub>:** The octanol-water partition coefficient is the ratio of the concentration of a chemical in octanol and in water at equilibrium and at a specified temperature. Octanol is an organic solvent that is used as a surrogate for natural organic matter. This parameter is used in many environmental studies to help determine the fate of chemicals in the environment.

**R-Phrase:** Risk Phrase

**SUSDP:** Standard for the Uniform Scheduling of Drugs & Poisons

**UN Number:** 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 NOHSC (ASCC) document "National Code of Practice for the Preparation of Material Safety Data Sheets" 2nd Edition [NOHSC:2011(2003)]

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