

Section 1 - Identification of Chemical Product and Company

Nuturf Australia Pty Ltd
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Trade Name: Nuturf Glyphosate 360
Product Use: Non-Selective Herbicide
Creation Date: February 2008

Section 2 - Hazards Identification

Statement of Hazardous Nature

This product is not classified as hazardous according to the criteria of ASCC Australia

This product is not a Dangerous Good according to the Australian Dangerous Goods (ADG) Code.

Risk Phrases: R36 Irritating to eyes.
Safety Phrases: S25 Avoid contact with eyes
SUSDP Classification: S5
ADG Classification: Not a Dangerous Good
Packaging Group: Not a Dangerous Good
UN Number: None allocated
Hazchem Code: None allocated

Emergency Overview

Physical Description & colour: Clear, amber liquid.

Odour: Faint amine odour

Major Health Hazards: No major health hazards identified

Potential Health Effects

Inhalation: Breathing in mists or aerosols may produce respiratory irritation, but generally unlikely.

Skin Contact: This product may irritate skin. However, it is unlikely to cause more than minor discomfort or effects such as itchiness or slight skin reddening.

Eye Contact: This product is mildly irritating to the eyes. It is likely to cause mild discomfort such as watering and redness of the eyes. However, this should quickly disappear once exposure is over.

Ingestion: No adverse effects expected, however, large amounts may cause nausea and vomiting

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) |
|---------------------------------|------------|----------|-------------|--------------|
| Glyphosate, isopropylamine salt | 38641-94-0 | 36 | not set | not set |
| Non hazardous detergent | secret | 1 approx | 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. *Note that these salts are added at slightly higher levels to ensure the stated concentrations of the active components.

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.

MATERIAL SAFETY DATA SHEET

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.

Ingestion: Wash out mouth with water. Do not induce vomiting. Give a glass of water. Contact doctor or Poisons Information Centre.

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.

Skin Contact: 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.

Eye Contact: Rinse immediately with plenty of water for at least 15 minutes, holding eye open and taking care to rinse under eyelids as well. If irritation persists seek medical attention.

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

Section 5 - Fire Fighting Measures

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

Extinguishing Media: Use extinguishing media suited to materials burning – Large fires, foam or water spray, small fires, Carbon dioxide, dry chemical

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: Not flammable

Upper Flammability Limit: N/A

Lower Flammability Limit: N/A

Auto ignition temperature: No data

Flammability Class: N/A

Fire Decomposition Products: Fire decomposition products from this product may form toxic and corrosive mixtures in confined spaces. Likely to decompose only after heating to dryness followed by further strong heating.

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. Wear protective chemically resistant clothing including face mask, face shield, and gauntlets. 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. 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. After spills, wash area preventing runoff from entering drains. If a significant quantity of material enters drains, advise emergency services. Do not dispose of undiluted chemical on site. If recycling, replace cap and return clean containers to recycler or designated collection point. 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.

Section 7 - Handling and Storage

Handling: 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.

Storage: Store in a cool, dry place away from children and animals or foodstuffs. 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" in Section No 10.

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 ³) | STEL (mg/m ³) | ADI (mg/Kg/day) | NOEL (mg/Kg/day) |
|---------------------------------|--------------------------|---------------------------|-----------------|------------------|
| Glyphosate, isopropylamine salt | not set | not set | 0.3 | 30 |

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.

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.

ADI means Acceptable Daily Intake **and NOEL** means No-observable-effect-level. (*ADI List 31ST Dec 2006*)

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.

Skin Protection: Wear impermeable PVC gloves to prevent skin contact. Wear overall and long sleeves to prevent skin contact

Respirator: 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. Use P2 type canister respirator if required

Safety Boots: Safety boots in industrial situations are advised

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.

Section 9 - Physical and Chemical Properties:

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|---|--------------------------|
| Physical Description & colour: | Clear light amber liquid |
| Odour: | Mild amine odour |
| Boiling Point: | Approx 100°C at 100kPa |
| Freezing Point | 0°C |
| Melting Point: | N/A |
| Volatiles: | Water component |
| Vapour Pressure: | No data |
| Vapour Density: | No data. |
| Specific Gravity: | 1.17 @ 20°C |
| Water Solubility: | Completely soluble |
| pH: | No data. |
| Odour Threshold: | No data. |
| Evaporation Rate: | No data. |
| Coeff Oil/water distribution: | No data |
| Flash Point | Does not burn |
| Auto ignition temp: | N/A |

Section 10 - Stability and Reactivity

Reactivity: This product is stable under normal temperatures and pressures, when stored and handled in accordance with this MSDS

Conditions to Avoid: Store away from heat or fire, keep away from strong oxidising agents

Incompatibilities: Incompatible strong oxidising agents

Fire Decomposition: Carbon dioxide, and if combustion is incomplete, carbon monoxide and smoke. Oxides of phosphorus, water.

Polymerisation: Unlikely to spontaneously polymerise

Section 11 - Toxicological Information

Data from laboratory studies on a similar, but not identical, formulation

Eye Effects: Slightly irritating

Skin Effects: Slightly irritating

Dermal: No data

Oral: LD₅₀ Oral (Rat) = 4050mg/kg

Inhalation: LC₅₀ Inhalation (Rat) >1.3mg/L/4hr

Skin Sensitisation: No data

Subchronic (Target Organ) Effects According to studies on animals Glyphosate caused no changes in blood, kidneys or liver. The studies were conducted at doses up to 500 mg/kg

Carcinogenicity The ingredients are not listed as carcinogenic in Worksafe's document "Exposure Standards for Atmospheric Contaminants in the Occupational Environment" (May 1995) nor in the ASCC Hazardous Substances Information System (1999)

Reproductive Toxicity: No impairment of reproductive function attributable any of the components of this product.

Teratology: (Birth defects): No effects noted.

Genotoxicity: This compound poses little mutagenic risk to humans.

Section 12 - Ecological Information

Ecotoxicity:

Effects on birds: Only slightly toxic to wild birds. LD₅₀ Oral (bobtail quail) >3850mg/kg

Effects on aquatic organisms: Practically non toxic to fish. LC₅₀ (96 hr, rainbow trout) 8.2-26mg/L
LC₅₀ (96 hr, carp) 19.7mg/L, LC₅₀ (96 hr, bluegill sunfish) 5.8-14mg/L

Effects on other organisms: LD₅₀ Oral (Bee) >100µg/bee

Environmental Fate:

Glyphosate is highly absorbed on most soils especially those with organic content. The compound is so strongly attracted to the soil that little is expected to leach from the applied area applied. The chemical rapidly degrades in soil and is considered to be non-residual

Section 13 - Disposal Considerations

Disposal: Full details regarding disposal of used containers, 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. Dispose of only in accord with all regulations.

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.

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 |
| ASCC | Australian Safety & Compensation Council |
| 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 |
| NOS | Not otherwise specified |
| NTP | National Toxicology Program (USA) |
| 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 document "National Code of Practice for the Preparation of Material Safety Data Sheets" 2nd Edition [NOHSC:2011(2003)]
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