SAFETY DATA SHEET

ACCUTURF N-DURE PREPLANT

LIVING TURF®
SCIENTIFIC TURF MANAGEMENT

1: Identification of the Substance and Supplier

Product Name	ACCUTURF N-DURE PREPLANT
Recommended Use	Fertiliser
Company Details	**Living Turf NZ**
Web Address	www.livingturf.co.nz
Email Address	servicenz@livingturf.com
Telephone Number	0800 428 268
Emergency Telephone	CHEMCALL (0800 243 622) (24 hours)
National Poison Centre	0800 POISON (0800 764 766) (24 hours)
Date of Issue/Revision	10 September 2021

2: Hazards Identification

Classification of the substance or mixture

Considered a Hazardous Substance according to the criteria of the New Zealand Hazardous Substances New Organisms legislation. Not regulated for transport of Dangerous Goods.

Classification Acute Toxicity (Oral) Category 4, Skin Corrosion/Irritation Category 3, Eye Irritation Category 2, Skin Sensitizer Category 1, Reproductive Toxicity Category 2, Acute Vertebrate Hazard Category 3, Aquatic Toxicity Category 2

HSNO Classes: 6.1D (oral), 6.3A, 6.4A, 6.5B (contact), 6.8B, 9.3C, 9.1A

Hazard Pictograms

SIGNAL WORD **WARNING**

Hazard statement(s)

H302	**6.1D**	Harmful if swallowed.
H315	**6.3A**	Causes skin irritation.
H319	**6.4A**	Causes serious eye irritation.
H317	**6.5B**	May cause an allergic skin reaction.
H361	**6.8B**	Suspected of damaging fertility or the unborn child.
H433	**9.3B**	Harmful to terrestrial vertebrates.
H413	**9.1A**	May cause long lasting harmful effects to aquatic life.

3: Composition / Information on Ingredients

Name	CAS No	%[weight]
urea	57-13-6	25
propylene glycol	57-55-6	<0.5
butyl phosphorothioic triamide	94317-64-3	<0.5
N-methyl-2-pyrrolidone	872-50-4	<0.5
diammonium phosphate	7783-28-0	50
potassium chloride	7447-40-7	25

4: First Aid Measures

Description of first aid measures

Eye Contact

If this product comes in contact with the eyes:

- Wash out immediately with fresh running water.
- Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
- Seek medical attention without delay; if pain persists or recurs seek medical attention.
- Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

Skin Contact

If skin contact occurs:

- Immediately remove all contaminated clothing, including footwear.
- Flush skin and hair with running water (and soap if available).
- Seek medical attention in event of irritation.

Inhalation

- If fumes, aerosols or combustion products are inhaled remove from contaminated area.
- Other measures are usually unnecessary.

Ingestion

- **IF SWALLOWED, REFER FOR MEDICAL ATTENTION, WHERE POSSIBLE, WITHOUT DELAY.**
- For advice, contact a Poisons Information Centre or a doctor.
- Urgent hospital treatment is likely to be needed.
- In the mean time, qualified first-aid personnel should treat the patient following observation and employing supportive measures as indicated by the patient's condition.
- If the services of a medical officer or medical doctor are readily available, the patient should be placed in his/her care and a copy of the SDS should be provided. Further action will be the responsibility of the medical specialist.
- If medical attention is not available on the worksite or surroundings send the patient to a hospital together with a copy of the SDS.

4: First Aid Measures (continued)

Where medical attention is not immediately available or where the patient is more than 15 minutes from a hospital or unless instructed otherwise:

- **INDUCE** vomiting with fingers down the back of the throat, **ONLY IF CONSCIOUS**. Lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.

NOTE: Wear a protective glove when inducing vomiting by mechanical means.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

5: Fire Fighting Measures

Extinguishing media

There is no restriction on the type of extinguisher which may be used.
Use extinguishing media suitable for surrounding area.

Special hazards arising from the substrate or mixture

Fire Incompatibility	• Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result

Advice for firefighters

Fire Fighting	• Alert Fire Brigade and tell them location and nature of hazard. • Wear breathing apparatus plus protective gloves in the event of a fire. • Prevent, by any means available, spillage from entering drains or water courses. • Use fire fighting procedures suitable for surrounding area. • **DO NOT** approach containers suspected to be hot. • Cool fire exposed containers with water spray from a protected location. • If safe to do so, remove containers from path of fire. • Equipment should be thoroughly decontaminated after use.
Fire/Explosion Hazard	• Combustible solid which burns but propagates flame with difficulty; it is estimated that most organic dusts are combustible (circa 70%) - according to the circumstances under which the combustion process occurs, such materials may cause fires and / or dust explosions. • Organic powders when finely divided over a range of concentrations regardless of particulate size or shape and suspended in air or some other oxidizing medium may form explosive dust-air mixtures and result in a fire or dust explosion (including secondary explosions). • Avoid generating dust, particularly clouds of dust in a confined or unventilated space as dusts may form an explosive mixture with air, and any source of ignition, i.e. flame or spark, will cause fire or explosion. Dust clouds generated by the fine grinding of the solid are a particular hazard; accumulations of fine dust (420 micron or less) may burn rapidly and fiercely if ignited - particles exceeding this limit will generally not form flammable dust clouds; once initiated, however, larger particles up to 1400 microns diameter will contribute to the propagation of an explosion. • In the same way as gases and vapours, dusts in the form of a cloud are only ignitable over a range of concentrations; in principle, the concepts of lower explosive limit (LEL) and upper explosive limit (UEL) are applicable to dust clouds but only the LEL is of practical use; - this is because of the inherent difficulty of achieving homogeneous dust clouds at high temperatures (for dusts the LEL is often called the "Minimum Explosible Concentration", MEC). • When processed with flammable liquids/vapors/mists,ignitable (hybrid) mixtures may be formed with combustible dusts. Ignitable mixtures will increase the rate of explosion pressure rise and the Minimum Ignition Energy (the minimum amount of energy required to ignite dust clouds - MIE) will be lower than the pure dust in air mixture. The Lower Explosive Limit (LEL) of the vapour/dust mixture will be lower than the individual LELs for the vapors/mists or dusts. • A dust explosion may release of large quantities of gaseous products; this in turn creates a subsequent pressure rise of explosive force capable of damaging plant and buildings and injuring people. • Usually the initial or primary explosion takes place in a confined space such as plant or machinery, and can be of sufficient force to damage or rupture the plant. If the shock wave from the primary explosion enters the surrounding area, it will disturb any settled dust layers, forming a second dust cloud, and often initiate a much larger secondary explosion. All large scale explosions have resulted from chain reactions of this type. • Dry dust can be charged electrostatically by turbulence, pneumatic transport, pouring, in exhaust ducts and during transport. • Build-up of electrostatic charge may be prevented by bonding and grounding. • Powder handling equipment such as dust collectors, dryers and mills may require additional protection measures such as explosion venting. • All movable parts coming in contact with this material should have a speed of less than 1-meter/sec. • A sudden release of statically charged materials from storage or process equipment, particularly at elevated temperatures and/ or pressure, may result in ignition especially in the absence of an apparent ignition source. • One important effect of the particulate nature of powders is that the surface area and surface structure (and often moisture content) can vary widely from sample to sample, depending of how the powder was manufactured and handled; this means that it is virtually impossible to use flammability data published in the literature for dusts (in contrast to that published for gases and vapours). • Autoignition temperatures are often quoted for dust clouds (minimum ignition temperature (MIT)) and dust layers (layer ignition temperature (LIT)); LIT generally falls as the thickness of the layer increases. Combustion products include: carbon monoxide (CO) carbon dioxide (CO_2) nitrogen oxides (NOx) phosphorus oxides (POx) sulfur oxides (SOx) other pyrolysis products typical of burning organic material. In fire situation urea melts and flows, on further heating it decomposes giving off ammonia gas. Thermal and oxidative degradation products can include ammonia, biuret, and cyanuric acid,. May emit poisonous fumes. May emit corrosive fumes.

6: Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

See section 12

6: Accidental Release Measures (continued)

Methods and material for containment and cleaning up

Minor Spills	• Remove all ignition sources. • Clean up all spills immediately. • Avoid contact with skin and eyes. • Control personal contact with the substance, by using protective equipment. • Use dry clean up procedures and avoid generating dust. • Place in a suitable, labelled container for waste disposal.
Major Spills	Moderate hazard. • **CAUTION**: Advise personnel in area. • Alert Emergency Services and tell them location and nature of hazard. • Control personal contact by wearing protective clothing. • Prevent, by any means available, spillage from entering drains or water courses. • Recover product wherever possible. • **IF DRY:** Use dry clean up procedures and avoid generating dust. Collect residues and place in sealed plastic bags or other containers for disposal. **IF WET:** Vacuum/shovel up and place in labelled containers for disposal. • **ALWAYS:** Wash area down with large amounts of water and prevent runoff into drains. • If contamination of drains or waterways occurs, advise Emergency Services.

Personal Protective Equipment advice is contained in Section 8 of the SDS.

7: Storage, Handling and Use

Precautions for safe handling

Safe handling	• Avoid all personal contact, including inhalation. • Wear protective clothing when risk of exposure occurs. • Use in a well-ventilated area. • Prevent concentration in hollows and sumps. • **DO NOT** enter confined spaces until atmosphere has been checked. • **DO NOT** allow material to contact humans, exposed food or food utensils. • Avoid contact with incompatible materials. • When handling, **DO NOT** eat, drink or smoke. • Keep containers securely sealed when not in use. • Avoid physical damage to containers. • Always wash hands with soap and water after handling. • Work clothes should be laundered separately. Launder contaminated clothing before re-use. • Use good occupational work practice. • Observe manufacturer's storage and handling recommendations contained within this SDS. • Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained. • Organic powders when finely divided over a range of concentrations regardless of particulate size or shape and suspended in air or some other oxidizing medium may form explosive dust-air mixtures and result in a fire or dust explosion (including secondary explosions) • Minimise airborne dust and eliminate all ignition sources. Keep away from heat, hot surfaces, sparks, and flame. • Establish good housekeeping practices. • Remove dust accumulations on a regular basis by vacuuming or gentle sweeping to avoid creating dust clouds. • Use continuous suction at points of dust generation to capture and minimise the accumulation of dusts. Particular attention should be given to overhead and hidden horizontal surfaces to minimise the probability of a "secondary" explosion. According to NFPA Standard 654, dust layers 1/32 in.(0.8 mm) thick can be sufficient to warrant immediate cleaning of the area. • Do not use air hoses for cleaning. • Minimise dry sweeping to avoid generation of dust clouds. Vacuum dust-accumulating surfaces and remove to a chemical disposal area. Vacuums with explosion-proof motors should be used. • Control sources of static electricity. Dusts or their packages may accumulate static charges, and static discharge can be a source of ignition. • Solids handling systems must be designed in accordance with applicable standards (e.g. NFPA including 654 and 77) and other national guidance. • Do not empty directly into flammable solvents or in the presence of flammable vapors. • The operator, the packaging container and all equipment must be grounded with electrical bonding and grounding systems. Plastic bags and plastics cannot be grounded, and antistatic bags do not completely protect against development of static charges. Empty containers may contain residual dust which has the potential to accumulate following settling. Such dusts may explode in the presence of an appropriate ignition source. • Do NOT cut, drill, grind or weld such containers. • In addition ensure such activity is not performed near full, partially empty or empty containers without appropriate workplace safety authorisation or permit.
Other information	• Store in original containers. • Keep containers securely sealed. • Store in a cool, dry area protected from environmental extremes. • Store away from incompatible materials and foodstuff containers. • Protect containers against physical damage and check regularly for leaks. • Observe manufacturer's storage and handling recommendations contained within this SDS. For major quantities: • Consider storage in bunded areas - ensure storage areas are isolated from sources of community water (including stormwater, ground water, lakes and streams}. • Ensure that accidental discharge to air or water is the subject of a contingency disaster management plan; this may require consultation with local authorities.

Conditions for safe storage, including any incompatibilities

Suitable container	• Glass container is suitable for laboratory quantities • Polyethylene or polypropylene container. • Check all containers are clearly labelled and free from leaks.
Storage incompatibility	• Avoid reaction with oxidising agents

8: Exposure Control / Personal Protection

Control parameters

OCCUPATIONAL EXPOSURE LIMITS (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
New Zealand Workplace Exposure Standards (WES)	propylene glycol	Propane-1,2-diol: Vapour and particulates	150 ppm / 474 mg/m3	Not Available	Not Available	Not Available
New Zealand Workplace Exposure Standards (WES)	propylene glycol	Propane-1,2-diol: Particulates only	10 mg/m3	Not Available	Not Available	Not Available
New Zealand Workplace Exposure Standards (WES)	N-methyl-2-pyrrolidone	1-Methyl-2-pyrrolidone	25 ppm / 103 mg/m3	309 mg/m3 / 75 ppm	Not Available	skin-Skin absorption

EMERGENCY LIMITS

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
urea	Urea	30 mg/m3	280 mg/m3	1,700 mg/m3
propylene glycol	Polypropylene glycols	30 mg/m3	330 mg/m3	2,000 mg/m3
propylene glycol	Propylene glycol: (1,2-Propanediol)	30 mg/m3	1,300 mg/m3	7,900 mg/m3
N-methyl-2-pyrrolidone	Methyl 2-pyrrolidinone, 1-; (N-Methylpyrrolidone)	30 ppm	32 ppm	190 ppm
diammonium phosphate	Ammonium phosphate dibasic; (Diammonium phosphate)	30 mg/m3	330 mg/m3	2,000 mg/m3
potassium chloride		N/A	N/A	N/A

Engineering Controls:	Handle in well-ventilated area. If dust generated use local extraction to control. Avoid inhalation of dust.
Protective Equipment:	Overalls, safety glasses and gloves. If dust is present wear dust mask and goggles. Eye wash facilities should be available.
Hygiene Precautions:	Remove protective clothing and wash hands and face before meals and after work.

9: Physical and Chemical Properties

Information on basic physical and chemical properties

Appearance	**Mix of** Pale green,grey/brown granules and white to red/brown crystals
Odour	Slight ammonia odour.
Boiling/Melting point (°C)	133
Flashpoint	N/A
Flammability	N/A
Vapour pressure (kPa)	Not Applicable
Specific Gravity	1.33
Combustibility	Not Applicable
Solubility in water	Very Soluble
Volatility	Not Volatile
pH	7-9.8
Corrosiveness	Not Available

10: Stability and Reactivity

Reactivity	See section 7
Chemical stability	• Unstable in the presence of incompatible materials. • Product is considered stable. • Hazardous polymerisation will not occur.
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

11: Toxicological Information

HSNO Classification(s)

6.1D	Harmful if swallowed.
6.3B	Causes mild skin irritation.
6.4A	Causes serious eye irritation.
6.5B	May cause an allergic skin reaction.
6.8B	Suspected of damaging fertility or the unborn child.
Ingestion:	Urea has diuretic effect. Ingestion of large quantities may lead to nausea and vomiting.
Inhalation:	Slight irritant. Elevated exposure may result in mucous membrane irritation (nose & throat).
Skin:	Irritant. Prolonged may result in irritation itching and possible skin rash.
Eye:	Irritant. May cause lachrymation, irritation, pain & redness.
Chronic Effects:	Not anticipated
Other Information:	No adverse health effects expected under normal conditions.
Toxicity Data:	• Urea LD50 (oral, rat) 8471 mg.kg-1 (RTECS) • Urea LD50 (dermal, rat) 8200 mg.kg-1(IUCLID)

12: Ecotoxicity Information

HSNO Classification(s)

9.1A	May cause long lasting harmful effects to aquatic life.
9.3C	Harmful to terrestrial vertebrates.
Ecotoxicity:	Avoid unintended release into streams and waterways
Environmental Exposure Limit (EEL):	Not assigned.

DO NOT discharge into sewer or waterways.

13: Disposal Considerations

Product Disposal:	Observe any local authority restrictions that may apply. Collection into sealable containers and dispose of in an approved land fill. If practicable apply excess fertiliser at recommended rates to appropriate land. Disposal method not to be used include (but not limited to) burning and burying.
Container Disposal:	Rinse containers thoroughly prior to reuse. Otherwise render unusable and dispose of as waste.

14: Transport Information

UN Number:	None Allocated
Proper Shipping Name:	Urea
DG Class:	None Allocated
Other information:	No special transport requirements necessary

15: Regulatory Information

HSNO Approval Number	HSR002571

EPA Approved pursuant to the HSNO Act 1996
See www.epa.govt.nz for approval controls.

16: Other Information

Users must ensure that the most up to date version of this safety data sheet is used.
This Safety Data Sheet summarises information on this product, and how to safely handle and use the product. Each user should familiarise themselves with the product label, Safety Note and Safety Data Sheet, and consider the information in the context of how the product will be handled and used, including in conjunction with other products. Turfgrass Specialists Ltd assumes no responsibility for the accuracy, completeness or suitability of this information. The user is responsible for determining the suitability and accuracy of this information for their particular purposes.
If clarification or further information is needed to ensure that an appropriate risk assessment can be made, the user should contact this company.