

MATERIAL SAFETY DATA SHEET

Product name: Terraform™ Plant Establisher

IMPORTANT NOTICE: This Material Safety Data Sheet (MSDS) is issued by All Stake Supply Pty Ltd in accordance with National Occupational Health and Safety Commission (NOHSC) Australia guidelines. As such, the information contained herein must not be altered, deleted or added to. All Stake Supply Pty Ltd will issue a new MSDS when there is a change in product specifications. All Stake Supply Pty Ltd will not accept any responsibility for any changes made to its MSDS in content by any other person or organisation.

1. IDENTIFICATION OF MATERIAL AND SUPPLIER

Product name: Terraform™ Plant Establisher

Synonyms: none allocated

UN number: none allocated

Dangerous goods class: none allocated

Subsidiary risk: none allocated

Hazchem code: none allocated

Poisons schedule: not scheduled

Use: Growing media amendment/fertiliser used for general horticultural purposes.

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2. HAZARD IDENTIFICATION

The product is non-hazardous according to the criteria of NOHSC Australia.

Not classified as a dangerous good according to the criteria of Australian Dangerous Goods (ADG) code.

Risk phrases:

Skin: May cause skin irritation, especially with prolonged or repeated exposure.

Eyes: The dust may be irritating to the eyes.

Inhalation: Inhalation of dust may irritate, inflame or sensitise the respiratory system and aggravate pre-existing conditions such as asthma and bronchitis.

Ingestion: Some ingredients are highly absorbent and will expand with water addition causing abdominal discomfort and possible dehydration.

Chronic health effects: No long-term health effects are known for this product when used as intended. However, repeated exposure to this product (or its dust) may result in irritation, inflammation or sensitisation.

Safety phrases:

Skin: Avoid repeated contact with skin.

Eyes: Avoid contact with eyes.

Inhalation: Avoid dust inhalation.

Ingestion: Avoid swallowing the product.

General safety: May be slippery when wet. Spillage on hard surfaces may be hazardous to walk on due to the spherical nature of some of the ingredients.

3. COMPOSITION AND INFORMATION ON INGREDIENTS

Ingredients:

Chemical Name & Synonyms	C.A.S. No.	Chemical Formula	Hazardous? % by weight	TLV (Threshold Limit Value)	PEL*
Complex -crosslinked acrylic copolymer (Water Storage Granules, WSG)	None	Complex nitro-hydrocarbon	Non-hazardous 35-40%	Not indicated	Non-specific 10 mg/m ³
Clinoptilolite	None	Na/K/Ca aluminosilicates	Non-hazardous 20-25%	Not indicated	Non-specific 10 mg/m ³
IBDU (isobutylidenediurea)	6104-30-9	Complex nitro-hydrocarbon	Non-hazardous 15-20%	Not indicated	120 g/m ³
Potassium Sulphate (Sulphate of Potash)	7778-80-5	K ₂ SO ₄	Non-hazardous 10-15%	Not indicated	Non-specific 10 mg/m ³
Double superphosphate	None	Calcium phosphates & sulphate	Non-hazardous 5-10%	Not indicated	Non-specific 10 mg/m ³
Ligno-cellulose granules/powder	None	Complex carbohydrate	Non-hazardous <5%	Not indicated	Non-specific 10 mg/m ³
Propylene oxide-ethylene oxide block polymer	9003-11-6	Complex hydrocarbon	Non-hazardous <5%	Not indicated	Non-specific 10 mg/m ³
Iron Oxide	1309-37-1	Fe ₂ O ₃	Non-hazardous <1%	5 mg/m ³	Non-specific 10 mg/m ³
Iron Sulphate	7720-78-7	FeSO ₄	Non-hazardous <1%	Not indicated	1 mg/m ³
Iron EDTA (Ferric salt of ethylenediaminetetraacetic acid)	15708-41-5	Fe EDTA	Non-hazardous <0.5%	Not indicated	Non-specific 10 mg/m ³

*PEL=Permissible Exposure Limit (where non-hazardous, non-specified dust, NOHSC exposure standard is 10 mg/M3)

4. FIRST AID MEASURES

Skin:

Wash thoroughly with mild soap and water, and apply suitable skin protection cream. Contaminated clothing should be washed before reuse. If irritation persists seek medical attention.

Eyes:

Flush eyes thoroughly for at least 15 minutes with plenty of water. If irritation persists seek medical attention.

Inhalation:

Remove patient from affected area. Clear blocked airways. If affected person feels unwell, seek medical advice.

Ingestion:

If swallowed, do not induce vomiting. Give nothing by mouth in cases of unconsciousness or convulsion. Check for breathing and pulse, if present, place in recovery position and obtain medical attention. If conscious, rinse out mouth with water. Give 600ml water to drink immediately, and repeated drinks of water at a rate of 200ml every 10 minutes. Call a physician immediately.

Advice to Physician:

Treat symptomatically.

Product expands in water, and can have a dehydrating affect if large amounts are ingested rapidly.

When swallowed, some ingredients hydrolyse to urea and isobutyraldehyde. (The Acute Toxicity of isobutyraldehyde Oral LD₅₀ (rat) 3700 mg/kg)

5. FIRE FIGHTING MEASURES

Flammability:

Non-flammable. May evolve toxic sulphur, nitrogen and phosphorus oxides when heated to decomposition.

Fire and explosion:

Non-flammable. Evacuate area and call emergency services. Toxic gases may be evolved when heated in a fire situation. Remain upwind and notify those downwind of hazard.

Suitable extinguishing media:

Foam, dry powder, Carbon dioxide (CO₂), in preference to water spray/fog.

Extinguishing media which must not be used for safety reasons:

Preferably non-aqueous, or surfaces may become slippery as gel expands. Otherwise none known.

Protective equipment for fire fighters:

Wear full protective equipment including and Self-Contained Breathing Apparatus (SCBA), chemical protection suit, suitable gloves and boots when combating fire.

Combustion products:

Oxides of carbon, nitrogen, phosphorus and sulphur.

Further information:

Very slippery when wet

Hazchem code:

non-allocated

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:

Avoid dust formation. Use suitable protective equipment. Effective dust mask.

Environmental precautions:

Do not flush into surface water, sanitary sewer, or ground water system.

Methods for clean-up:

Sweep up and shovel into suitable storage containers for disposal. Residues or small spillages should be hosed away completely with plenty of water. Contain the wash water and dispose of accordance with local regulations. Spilled product which becomes wet, or spilled aqueous solutions create a hazard because of their slippery nature. This type of spillage should be contained with earth or sand and removed for disposal making sure that no residue remains.

7. HANDLING AND STORAGE

Handling:

As with many organic powders, flammable dust clouds may be formed. Avoid dust formation and ignition sources. Ensure good local exhaust ventilation.

Do not eat, drink or smoke at the workplace

Remove contaminated clothing immediately and launder before reuse.

Wash hands before breaks and immediately after handling the product.

Use suitable skin protection cream if necessary.

Storage:

Protect from wet and humid conditions. Keep in a dry, cool place. Avoid extremes of temperature.

Very slippery when wet.

Avoid contact with incompatible materials that support combustion – such as strong oxidising agents

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure limits:

No exposure standards have been established for this material. However, the Time-weighted Average (TWA) NOHSC exposure standard for dust not otherwise specified is 10 mg/m³.

Technical measure/precautions:

Ensure adequate ventilation, especially in confined spaces. Provide appropriate exhaust ventilation at places where dust is formed.

Respiratory protection:

If dust is created and inhalation risk exists, wear Class 1 (Particulate) respirator conforming with AS/NZS 1715 and AS/NZS 1716. These Standards should be followed in the selection, fit-testing, use, storage and maintenance of the respirators.

Skin protection:

Wear standard duty gloves (AS 2161) of PVC or other plastic or rubber; loose comfortable clothing and boots. Long-sleeved shirts and long trousers are recommended if skin irritation occurs.

Wash skin with mild soap and water immediately after working with these materials.

Launder work clothes regularly.

Eye protection:

Non-fogging dust resistant goggles or safety glasses (AS/NZS1336) should be worn if there is a risk of dust and/or liquid mist getting into the eyes.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	mixture of variously coloured (brown, cream, green, grey, pink and white) granules/powder
Odour:	little or no odour
pH:	3 to 9
Vapour pressure @ 20°C:	not tested
Vapour density:	not tested
Boiling point/range:	not applicable
Melting point:	from 205°C to >1000°C (with decomposition to some ingredients)
Softening point:	not applicable
Density:	not tested
Flammability:	non flammable
Flash point:	400°C for ingredient
Ignition temperature (IgT):	not applicable
Assessment for IgT:	as with many organic powders, flammable dust clouds may be formed.
Explosive properties	not explosive
Lower explosion limit (LEL)	not applicable
Upper explosion limit (UEL)	not applicable
Decomposition temperature:	not tested
Oxidising properties:	not applicable
Solubility in water:	mixture of soluble (110 g/L), partly soluble (2 g/L) and insoluble materials.
Assessment for solubility:	some ingredients will swell in water
Partition co-efficient (Log Pow):	not applicable
Dynamic viscosity:	not tested
Evaporation rate:	not tested
Molecular weight:	not applicable

10. STABILITY AND REACTIVITY

Conditions to avoid:

No special precautions other than good housekeeping of chemicals.
Avoid wet or humid conditions.
Avoid extremes of temperature.

Materials to avoid:

Reactive chemicals (eg hydrofluoric acid, strong oxidising agents)

Hazardous decomposition products:

Combustion may result in:
Oxides of carbon, nitrogen, phosphorus and sulphur.

11. TOXICOLOGICAL INFORMATION

Acute oral toxicity (Rat)	LD ₅₀ > 2000-6600 mg/kg	By analogy to similar products
Acute dermal toxicity	not tested	
Acute inhalation toxicity	not tested	
Acute eye irritation/corrosion	not irritant	Conventional method
Acute dermal irritation/corrosion	not irritant	Conventional method
Acute skin sensitisation	not tested	

12. ECOLOGICAL INFORMATION

This product is not anticipated to cause adverse affects to animal or plant life if released to the environment in small quantities.

Based on individual ingredients:

Acute toxicity to fish (96h) Zebra fish – <i>Brachydanio rerio</i>	LC ₅₀ 357 mg/L From tests on ingredient range	OECD 203 / EEC C1
Acute toxicity to daphnia (48h) <i>Daphnia magna</i>	EC ₅₀ 212 mg/L From tests on ingredient range	OECD 202 / EEC C2
Acute toxicity to bacteria (24h) <i>Pseudomonas putida</i>	EC ₅₀ 892 mg/L From tests on ingredient range	OECD 203 / EEC C1
Acute toxicity to algae (72h) <i>Chlorella vulgaris</i>	LC ₅₀ 357 mg/L From tests on ingredient range	OECD 203 / EEC C1

Biodegradability:

On contact with water, the soluble ingredients will readily hydrolyse to biologically degradable products.

Biodegradability of the insoluble ingredients has not been determined

13. DISPOSAL CONSIDERATIONS

Waste from residues/unused products:

Local regulations must be observed

Contaminated packaging:

Contaminated packaging material should be treated equivalent to residual chemical. Clean packaging material should be subjected to waste management schemes (recovery, recycling, reuse) according to local legislation.

14. TRANSPORT INFORMATION

UN no. not applicable
Dangerous Goods class: not classified as Dangerous Good by ADG Code
Subsidiary risk: none allocated
Packing Group: none allocated
Special precaution for user: contact with water will cause expansion to produce slippery gel type material.
Hazchem code: none allocated
Flash point: not applicable

15. REGULATORY INFORMATION

Classification: Classification not required
Poisons schedule no.: none allocated

16. OTHER INFORMATION

MSDS History:
Created: 18/09/08
Revisions: none

References:

NOHSC, "National Code of Practice for the Preparation of Material Safety Data Sheets" 2nd Edition [NOHSC:2011(2003)], Australian Government Publishing Service, Canberra, April 2003. <<http://www.ascc.gov.au/NR/rdonlyres/6AA1E55D-D444-4909-B18B-812688B49A7F/0/MSDSCodeNOHSC20112003.pdf>>

Office of the Australian Safety and Compensation Council (OASCC), "Hazardous Substances Information System – Consolidated lists", Australian Government Publishing Service, Canberra, March 2007 <<http://hsis.ascc.gov.au/TheList.aspx>>

Abbreviations used:

ADG	Australian Dangerous Goods code
AS	Australian Standard
BH	Business hours (normally 8:30 am to 5:00 pm)
CAS	Chemical Abstracts Service
mg/m ³ & mg/L	milligrams per cubic metre and per Litre respectively
MSDS	Material Safety Data Sheet
NZS	New Zealand Standard

Further information:

may be obtained from All Stake Supply Pty Ltd sales offices:

**60 PRINCES ST
RIVERSTONE NSW 2765
Telephone: (02) 9627 3699
Facsimile: (02) 9627 1521**

Emergency Telephone:

Poisons Information Centre: **131 126**

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End of MSDS