SAFETY DATA SHEET

Section 1. Identification of the material and the supplier

Product:	**Floranid Twin Turf 20-5-8**
Item Code:	
Product Use:	Fertiliser
Restriction of Use:	Refer to Section 15
New Zealand Supplier:	Horticentre Ltd
Address:	10 Firth Street Drury, 2113
Telephone:	+64 9 294 8453
Fax Number:	+64 9 294 7272
New Zealand:	**0800 764 766 (National Poison Centre)**
Date of SDS Preparation:	23 August 2022 v2

Section 2. Hazards Identification

NOT classified as hazardous according to Regulation (EC) No. 1272/2008 [CLP] which meets New Zealand jurisdiction criteria as per EPA Hazardous Substances (Safety Data Sheets) Notice 2017.

Section 3. Composition / Information on Ingredients

Ingredients	Wt%	CAS NUMBER.
Ammonium Nitrate	>10-<45	6484-52-2
Iron Sulphate	<3	7720-78-7
Borates, tetra sodium salts, pentahydrate	<0.2	12179-04-3
Zinc sulphate	<0.05	7733-02-0
disodium [[N,N'-ethylenebis[N-(carboxymethyl)glycinato]](4-)-N,N',O,O',ON,ON']cuprate(2-)	<0.5	14025-15-1

Section 4. First Aid Measures

Routes of Exposure:

If in Eyes	Rinse cautiously with water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice.
If on Skin	Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation or rash occurs: get medical advice/attention.

If Swallowed	Clean mouth with water and drink afterwards plenty of water. Call a POISON CENTER or doctor/physician if you feel unwell.
If Inhaled	Remove person to fresh air. Remove contaminated clothing and loosen remaining clothing. Allow person to assume most comfortable position and keep warm. Keep at rest until fully recovered. Get medical advice if breathing becomes difficult. In case of lung irritation, first treatment with dexametason aerosol (spray).

Most important symptoms and effects, both acute and delayed

Symptoms:	Ingestion may provoke the following symptoms: Methaemoglobinemia
Risk:	Later control for pneumonia and lung oedema.

Indication of any immediate medical attention and special treatment needed

Treatment	Treat symptomatically. There is no specific antidote available.

Section 5. Fire Fighting Measures

Hazard Type	Non-combustible substance with oxidizing ingredient
Hazards from combustion products	Thermal decomposition can lead to release of irritating gases and vapours. Nitrogen oxides (NOx) and ammonia
Suitable Extinguishing media	Water Unsuitable: Foam, Dry chemical, Carbon dioxide (CO_2), Sand
Precautions for firefighters and special protective clothing	Self-contained breathing apparatus. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
HAZCHEM CODE	**None Allocated**

Section 6. Accidental Release Measures

Wear protective equipment as detailed in Section 8. Clear area of any unprotected personnel.

For cleanup use mechanical handling equipment.

Do not empty into drains. Retain and dispose of contaminated wash water.

Section 7. Handling and Storage

Precautions for Handling:

- Keep away from direct sunlight, heat and sources of ignition.
- Keep away from heat.
- Protect from contamination.
- Protect from moisture.
- Wash hands before breaks and at the end of workday.

Precautions for Storage:

- Store away from combustible materials, strong acids and strong bases.
- Keep away from heat or sources of ignition.
- Protect from contamination.
- When stored loose do not mix with other fertilizers.
- Protect from moisture.
- Keep in a dry place.

Section 8 Exposure Controls / Personal Protection

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Borates, tetra sodium salts, pentahydrate			3 mg/m3	DE TRGS 900
iron sulphate	7720-78-7	TWA	1 mg/m3 (Iron)	GB EH40
Peak-limit: excursion factor (category)	8;(II)			
Further information	Commission for dangerous substances, The threshold value is based on the element content of the corresponding metal., When there is compliance with the OEL and biological tolerance values, there is no risk of harming the un-born child			

		AGW	0,5 mg/m3 (Borate)	DE TRGS 900
Peak-limit: excursion factor (category)	2;(I)			
Further information	Commission for dangerous substances, The threshold value is based on the element content of the corresponding metal., When there is compliance with the OEL and biological tolerance values, there is no risk of harming the un-born child			
			1 mg/m3	ACGIHTLV
		TWA	1 mg/m3	GB EH40
disodium [[N,N'-ethylenebis[N-(carboxyme-thyl)glycinato]](4-)-N,N',O,O',ON,ON'] cuprate(2-)	14025-15-1	TWA	1 mg/m3 (Copper)	GB EH40

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

Substance name	End Use	Exposure routes	Potential health effects	Value
ammonium nitrate	Workers	Inhalation	Long-term systemic effects	36 mg/m3
	Workers	Skin contact	Long-term systemic effects	5,12 mg/kg bw/day
	Consumers	Ingestion	Long-term systemic effects	2,56 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	8,9 mg/m3
	Consumers	Skin contact, Ingestion	Long-term systemic effects	2,56 mg/kg bw/day
iron sulphate	Workers	Skin contact	Acute effects, systemic effects	2,8 mg/kg
Remarks:	Exposure time: 24 h			
	Workers	Inhalation	Acute effects, systemic effects	9,9 mg/m3
	Workers	Skin contact	Chronic effects, systemic effects	2,8 mg/kg

Remarks:	Exposure time: 24 h			
	Workers	Inhalation	Chronic effects, systemic effects	9,9 mg/m3
	Consumers	Ingestion	Acute effects, systemic effects	1,4 mg/kg
Remarks:	Exposure time: 24 h			
	Consumers	Skin contact	Acute effects, systemic effects	1,4 mg/kg
Remarks:	Exposure time: 24 h			
	Consumers	Inhalation	Acute effects, systemic effects	2,5 mg/m3
	Consumers	Ingestion	systemic effects, Chronic effects	1,4 mg/kg
Remarks:	Exposure time: 24 h			
	Consumers	Skin contact	Chronic effects, systemic effects	1,4 mg/kg
Remarks:	Exposure time: 24 h			
	Consumers	Inhalation	Chronic effects, systemic effects	2,5 mg/m3
Borates, tetra sodium salts, pentahydrate	Workers	Inhalation	Long-term exposure	6,7 mg/m3
	Consumers	Inhalation	Long-term exposure	3,4 mg/m3
	Workers	Skin contact	Long-term exposure	316,4 mg/kg bw/day
	Consumers	Skin contact	Long-term exposure	159,5 mg/kg bw/day
	Consumers	Ingestion	Long-term exposure,	0,79 mg/kg

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

Substance name	Environmental Compartment	Value
ammonium nitrate	Sewage treatment plant	18 mg/l
iron sulphate	Water	
Remarks: This product has no known ecotoxicological effects.		
	Behaviour in waste water treatment plants	2483 mg/l
	Fresh water sediment	246000 mg/kg
	Marine sediment	246000 mg/kg
	Soil	276000 mg/kg
Borates, tetra sodium salts, pentahydrate	Fresh water	2,9 mg/l
	Marine water	2,9 mg/l
	Soil	5,7 mg/kg
	Intermittent use/release	13,7 mg/l
	Sewage treatment plant	10 mg/l

Engineering Controls

No specific controls are needed.

Personal Protection Equipment:

Eyes	In case of dust formation: Safety glasses with side shields.
Hands and Skin	Normal clean work clothing and rubber gloves.
Respiratory	Breathing apparatus only if aerosol or dust is formed. Respirator with a particle filter (EN 143) P1 filter

Section 9 Physical and Chemical Properties

Appearance	Solid – Various colours
Odour	Odourless
Odour Threshold	Not available
pH	ca. 5, Concentration: 100 g/l (20 °C)
Boiling Point	Not available
Melting Point	Not available
Freezing Point	Not available
Flash Point	Not available
Flammability	The product is not flammable.
Upper and Lower Explosive Limits	Not available
Vapour Pressure	Not available
Vapour Density	Not available
Relative Density	Not available
Bulk Density	ca. 1.150 kg/m^3
Solubilities	Soluble
Partition Coefficient:	Not available
Auto-ignition Temperature	Not available
Decomposition Temperature	>130^{0}C To avoid thermal decomposition, do not overheat.
Kinematic Viscosity	Not available
Particle Size	Not available

Section 10. Stability and Reactivity

Stability of Substance	This product is stable under normal conditions.
Hazardous reactions	Evolution of ammonia under influence of alkalies.
Conditions to Avoid	Keep away from heat and sources of ignition.
Incompatible Materials	Sulphur, chlorites, chloride, chlorates, Hypochlorites, acid or alkaline reacting substances, flammable oxidizable substances, nitrites, metallic salts, metallic powder, herbicide, chlorinated hydrocarbons, organic compounds.
Hazardous Decomposition Products	Nitrogen oxides (NOx), Ammonia.

Section 11 Toxicological Information

Acute Effects:

Swallowed	Not applicable.
Dermal	Not applicable.

Inhalation	Not applicable.
Eye	Not applicable.
Skin	Not applicable.

Chronic Effects:

Carcinogenicity	Not applicable.
Reproductive Toxicity	Not applicable.
Germ Cell Mutagenicity	Not applicable.
Aspiration	Not applicable.
STOT/SE	Not applicable.
STOT/RE	Not applicable.

Components:

ammonium nitrate:

Acute oral toxicity : LD50 (Rat): > 2.950 mg/kg
Method: OECD Test Guideline 401

Acute inhalation toxicity : > 88,8 mg/l
Method: No information available.

Acute dermal toxicity : LD50 (Rat): > 5.000 mg/kg

iron sulphate:

Acute oral toxicity : LD50 (Rat): > 2.000 mg/kg
Method: OECD Test Guideline 401
:LD50 (Rat): 657 - 4.390 mg/kg
Method: Calculation method

Acute toxicity estimate: 500 mg/kg
Method: Converted acute toxicity point estimate

Acute inhalation toxicity : Remarks: This information is not available.

Acute dermal toxicity : LD50 (Rat): > 1.992 mg/kg
Method: Converted acute toxicity point estimate

Borates, tetra sodium salts, pentahydrate:

Acute oral toxicity : LD50 (Rat): 3.200 - 3.400 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 2,0 mg/l
Method: OECD Test Guideline 403

Acute dermal toxicity : LD50 (Rabbit): > 2.000 mg/kg

zinc sulphate:

Acute oral toxicity : LD50 (Rat): 862 - 4.429 mg/kg

Acute dermal toxicity : LD50 Dermal (Rat): > 2.000 mg/kg

disodium [[N,N'-ethylenebis[N-(carboxymethyl)glycinato]](4-)-N,N',O,O',ON,ON']cuprate(2-)

Acute oral toxicity : LD50 Oral (Rat): > 1.750 mg/kg

Section 12. Ecotoxicological Information

This product is not hazardous to the environment.

Components:

ammonium nitrate:

Toxicity to fish : LC50 (Fish): > 100 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia (water flea)): 490 mg/l
Exposure time: 48 h

LC50 : 490 mg/l

Toxicity to algae : EC50 (Selenastrum capricornutum (green algae)): 1.700 mg/l
Exposure time: 10 d

iron sulphate:
Ecotoxicology Assessment
Acute aquatic toxicity : This product has no known ecotoxicological effects.

Borates, tetra sodium salts, pentahydrate:

Toxicity to fish : LC50 (dab): 74 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 242 mg/l
Exposure time: 24 h

Toxicity to algae : EC10 (Scenedesmus subspicatus): 24 mg/l
Exposure time: 96 h

zinc sulphate:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 0,43 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 1,86 mg/l
Exposure time: 48 h

Toxicity to algae : EC50 (Scenedesmus quadricauda (Green algae)): 0,52 mg/l
Exposure time: 120 h

Toxicity to bacteria : EC50 (Bacteria): 22,75 mg/l
Exposure time: 0,5 h

disodium [[N,N'-ethylenebis[N-(carboxymethyl)glycinato]](4-)-N,N',O,O',ON,ON']cuprate(2-):

Toxicity to fish : LC50 (Fish): > 100 mg/l

Toxicity to algae : EC50 : 30 mg/l
Exposure time: 96 h

Persistence and degradability	The methods for determining the biological degradability are not applicable to inorganic substances.
Bioaccumulation	Bioaccumulation is unlikely.
Mobility in Soil	Groundwater contamination is unlikely.
Other adverse effects	No data available.

Section 13. Disposal Considerations

Disposal Method: Contaminated packaging should be emptied as far as possible; then it can be passed on for recycling after being thoroughly cleaned.

Disposal methods to avoid: None known.

Section 14 Transport Information

This product is NOT classified as a Dangerous Good for transport in NZ ; NZS 5433:2012

Section 15 Regulatory Information

NOT classified as hazardous according to Regulation (EC) No. 1272/2008 [CLP] which meets New Zealand jurisdiction criteria as per EPA Hazardous Substances (Safety Data Sheets) Notice 2017.

Section 16 Other Information

Glossary

Cat	Category
EC_{50}	Median effective concentration.
EEL	Environmental Exposure Limit.
EPA	Environmental Protection Authority
HSNO	Hazardous Substances and New Organisms.
LC_{50}	Lethal concentration that will kill 50% of the test organisms inhaling or ingesting it.
LD_{50}	Lethal dose to kill 50% of test animals/organisms.
LEL	Lower explosive level.
OSHA	American Occupational Safety and Health Administration.
TEL	Tolerable Exposure Limit.
TLV	Threshold Limit Value-an exposure limit set by responsible authority.
UEL	Upper Explosive Level
WES	Workplace Exposure Limit

References:

1. EPA Hazardous Substances (Safety Data Sheets) Notice 2017
2. Workplace Exposure Standards and Biological Exposure Indices Nov 2022 edition.
3. Assigning a hazardous substance to a HSNO Approval (Aug 2013).
4. Transport of Dangerous goods on land NZS 5433:2020
5. HSW (Hazardous Substances) Regulations 2017

Disclaimer

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Please contact the New Zealand distributor, if further information is required.

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