

## SAFETY DATA SHEET

### Section 1. Identification of the material and the supplier

Product: Enforce® High-N 20-5-8  
 Product No:  
 Product Use: Fertilizer  
 Restrictions of Use: Refer to Section 15

New Zealand Supplier: Horticulture 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: 28 October 2022

### Section 2. Hazards Identification

**Classified as NON hazardous according to Regulation (EC) No. 1272/2008 [CLP] which meets New Zealand jurisdiction criteria as per EPA Hazardous Substances (Safety Data Sheets) Notice 2020.**

### Section 3. Composition / Information on Ingredients

Ingredients	Wt%	CAS NUMBER.
Ammonium Nitrate	≥10 - ≤45	6484-52-2
Iron Sulphate	≥1 - ≤3	7720-78-7
Zinc Sulphate	≥0.001 - ≤0.01	7733-02-0
Borates, tetra sodium salts, pentahydrate	≥0.01 - ≤0.05	12179-04-3

### Section 4. First Aid Measures

Routes of Exposure:

If in Eyes Rinse cautiously with water for several minutes. If eye irritation persists: Get medical advice.

If on Skin Wash with plenty of soap and water. If skin irritation occurs: get medical advice/attention.

If Swallowed Clean mouth with water and drink afterwards plenty of water. Call a physician immediately

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.

### Most important symptoms and effects, both acute and delayed

Symptoms: Ingestion may provoke the following symptoms: Methaemoglobinemia  
Inhalation of decomposition products in high concentration may cause shortness of breath (lung oedema).

### Indication of any immediate medical attention and special treatment needed

Treatment Treat symptomatically.

## Section 5. Fire Fighting Measures

<b>Hazard Type</b>	Non Flammable
<b>Hazards from combustion products</b>	Can decompose at above 100 °C. Thermal decomposition products: Nitrogen monoxide, nitrogen dioxide, dinitrogen oxide, ammonia, Isobutyraldehyd
<b>Suitable Extinguishing media</b>	Water Do not use: Carbon dioxide (CO <sub>2</sub> ), foam, sand and dry chemical.
<b>Precautions for firefighters and special protective clothing</b>	In the event of fire, wear self-contained breathing apparatus. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
<b>HAZCHEM CODE</b>	<b>None allocated</b>

## Section 6. Accidental Release Measures

Wear appropriate PPE as detailed in Section 8.

Use mechanical handling equipment for cleanup. Dispose of according to Section 13.

Do not allow to enter into surface water or drains.

## Section 7. Handling and Storage

### Handling

- Read label before use.
- Protect from contamination.
- Keep away from direct sunlight.
- Protect against heat.
- Protect from moisture.
- The product is not flammable. Keep away from sources of ignition - No smoking.
- Keep away from combustible materials.
- Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- Risk of explosion if heated under confinement.

### Storage

- When stored loose do not mix with other fertilizers.
- Keep away from direct sunlight.
- Protect against heat.
- Protect from contamination.
- Protect from moisture.
- Store away from incompatible materials listed in Section 10.

## Section 8 Exposure Controls / Personal Protection

## WORKPLACE EXPOSURE STANDARDS (provided for guidance only)

Substance	TWA		STEL	
	ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>
Borates, tetra, sodium salts (Pentahydrate) [12179-04-3]	-	1	-	-

Workplace Exposure Standard – Time Weighted Average (WES-TWA). The time-weighted average exposure standard designed to protect the worker from the effects of long-term exposure. Workplace Exposure Standard – Short-Term Exposure Limit (WESSTEL). The 15-minute average exposure standard. Applies to any 15- Minute period in the working day and is designed to protect the worker against adverse effects of irritation, chronic or irreversible tissue change, or narcosis that may increase the likelihood of accidents. The WES-STEL is not an alternative to the WES-TWA; both the short-term and time-weighted average exposures apply. Workplace Exposure Standards and Biological Exposure Indices APRIL 2022 13TH EDITION.

### Control parameters

#### 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/m <sup>3</sup>
	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/m <sup>3</sup>
	Consumers	Skin contact, ingestion	Long-term Systemic effects	2.56 mg/kg/bw/day
	Iron Sulphate	Workers	Skin contact	Acute effects, systemic effects
Remarks:	Exposure time: 24 h			
	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/m <sup>3</sup>
	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/m <sup>3</sup>
	Consumers	Ingestion	Chronic effects, systemic 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 hrs			
	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 Short term exposure	0.79 mg/kg/bw/day

**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	Behaviour in waste water treatment plants	2483 mg/l
	Fresh water sediment	246000 mg/kg
	Marine sediment	246000 mg/kg
	Soil	246000 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**

Ensure adequate ventilation is available.

<b>Eyes</b>	In case of dust formation: Tightly fitting safety goggles.
<b>Hands and Skin</b>	Wearing of gloves is recommended.
<b>Respiratory</b>	Breathing apparatus only if aerosol or dust is formed.

**Section 9 Physical and Chemical Properties**

<b>Appearance</b>	Granular
<b>Colour</b>	various
<b>Odour</b>	Odourless
<b>Odour Threshold</b>	Not available
<b>pH @ 20°C</b>	ca. 6.2 Concentration: 100 g/l, 20 °C

<b>Boiling Point</b>	Not available
<b>Melting Point</b>	Not available
<b>Freezing Point</b>	Not available
<b>Flash Point</b>	Not available
<b>Flammability</b>	The product is not flammable.
<b>Upper and Lower Explosive Limits</b>	Not available
<b>Vapour Pressure</b>	Not available
<b>Bulk Density</b>	ca. 860 kg/m <sup>3</sup>
<b>Solubilities</b>	soluble
<b>Partition Coefficient:</b>	Not available
<b>Auto-ignition Temperature</b>	Not available
<b>Decomposition Temperature</b>	ca. 130 °C, To avoid thermal decomposition, do not overheat.
<b>Kinematic Viscosity</b>	Not available
<b>Particle Characteristics</b>	Not applicable

### Section 10. Stability and Reactivity

<b>Stability of Substance</b>	This product is stable under normal conditions.
<b>Conditions to Avoid</b>	Keep away from heat and sources of ignition.
<b>Hazardous Reactions</b>	Evolution of ammonia under influence of alkalies.
<b>Incompatible Materials</b>	Oxidizable substances Strong acids and strong bases
<b>Hazardous Decomposition Products</b>	Nitrogen monoxide, nitrogen dioxide, dinitrogenoxide, ammonia Isobutyraldehyd

### Section 11 Toxicological Information

#### Acute Effects:

<b>Swallowed</b>	Not classified.
<b>Dermal</b>	Not classified.
<b>Inhalation</b>	Not classified.
<b>Eye</b>	Not classified.
<b>Skin</b>	Not classified.

#### Chronic Effects:

<b>Carcinogenicity</b>	Not classified.
<b>Reproductive Toxicity</b>	Not classified.
<b>Germ Cell Mutagenicity</b>	Not classified.
<b>Aspiration</b>	Not classified.
<b>STOT/SE</b>	Not classified.
<b>STOT/RE</b>	Not classified.

#### Individual component information:

##### Acute Toxicity:

<b>Chemical Name</b>	<b>Oral – LD50</b>	<b>Dermal – LD50</b>	<b>Inhalation – LC50</b>
ammonium nitrate	2950 mg/kg (rat)	>5000mg/kg (Rat)	>88.8mg/L
iron sulphate	>200mg/kg (rat)	>1992 mg/kg (rat)	-
zinc sulphate	862 - 4429mg/kg(Rat)	>2000 mg/kg (rat)	-
borates, tetra sodium salts, pentahydrate	3200 - 3400mg/kg (Rat)	>2000 mg/kg(Rabbit)	>2.0mg/l (Rat)

## Section 12. Ecotoxicological Information

Not hazardous to the environment

<b>Persistence and degradability</b>	No data available.
<b>Bioaccumulation</b>	No data available.
<b>Mobility in Soil</b>	No data available.
<b>Other adverse effects</b>	No data available.

## Section 13. Disposal Considerations

### Disposal Method:

Triple rinse container. Cleaned packaging maybe offered for recycling or landfill in accordance with local regulations. Dispose of unwanted product according to Local Regulations.

**Precautions and methods to avoid:** None known.

## Section 14 Transport Information

**This product is NOT classified as a Dangerous Good for transport in NZ ; NZS 5433:2020**

## 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 2020.**

## Section 16 Other Information

### Glossary

Cat	Category
EC <sub>50</sub>	Median effective concentration.
EEL	Environmental Exposure Limit.
EPA	Environmental Protection Authority
HSNO	Hazardous Substances and New Organisms.
LC <sub>50</sub>	Lethal concentration that will kill 50% of the test organisms inhaling or ingesting it.
LD <sub>50</sub>	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 APRIL 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

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

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