

**Section 1: Identification of the substance/mixture and of the company/undertaking**

**1.1. Product identifier**

**Product name:** FORTALIS

**1.2. Relevant identified uses of the substance or mixture and uses advised against**

**1.3. Details of the supplier of the safety data sheet**

**Company name:** PI Bioscience Limited

Rothamsted

West Common

Harpenden

Hertfordshire

AL5 2JQ

United Kingdom

**Tel:** 01582 465 540

**Fax:** Not Applicable

**Email:** info@plantimpact.com

**1.4. Emergency telephone number**

**Emergency tel:** 01582 465 540

(office hours only)

**Section 2: Hazards identification**

**2.1. Classification of the substance or mixture**

**Classification under OSHA GHS:** Acute Tox Oral. 4; Eye Dam. 1; Skin Irrit. 2

**Most important adverse effects:** Harmful if swallowed. Causes serious eye damage. Causes skin irritation.

**2.2. Label elements**

**GHS Label elements:**

**Hazard statements:** Harmful if swallowed.

Causes skin irritation.

Causes serious eye damage.

**Hazard pictograms:**



**Signal words:** Danger

**Precautionary statements:** Wear protective gloves/protective clothing/eye protection/face protection.

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Wash exposed areas thoroughly after handling. Do not eat, drink or smoke when using this product.

IF SWALLOWED: Call a POISON CENTER/doctor/ if you feel unwell. Rinse mouth.

IF ON SKIN: Wash with plenty of water.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Immediately call a POISON CENTER/doctor.

Take off contaminated clothing and wash it before reuse.

Specific treatment (see instructions on this label).

Dispose of contents/container in accordance with all applicable regulations.

## 2.3. Other hazards

**PBT:** This product is not identified as a PBT/vPvB substance.

## Section 3: Composition/information on ingredients

### 3.2. Mixtures

#### Hazardous ingredients:

CALCIUM NITRATE

CAS	Percent
15245-12-2	50-70%

NITRIC ACID 60%

7697-37-2	1-10%
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ETHOXYLATED ALCOHOL

78330-21-9	1-10%
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ZINC OXIDE

1314-13-2	<1%
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The specific concentrations of ingredients have been withheld as trade secrets.

## Section 4: First aid measures

### 4.1. Description of first aid measures

**Skin contact:** Wash immediately with plenty of soap and water.

**Eye contact:** Bathe the eye with running water for 15 minutes.

**Ingestion:** Do not induce vomiting. Wash out mouth with water.

**Inhalation:** Move to fresh air in case of accidental inhalation of vapours.

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

**Skin contact:** No data available.

**Eye contact:** No data available.

**Ingestion:** No data available.

**Inhalation:** No data available.

**Delayed / immediate effects:** No data available.

[cont...]

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

**Immediate / special treatment:** Show this safety data sheet to the doctor in attendance.

## Section 5: Fire-fighting measures

### 5.1. Extinguishing media

**Extinguishing media:** Suitable extinguishing media for the surrounding fire should be used.

### 5.2. Special hazards arising from the substance or mixture

**Exposure hazards:** Not applicable.

### 5.3. Advice for fire-fighters

**Advice for fire-fighters:** Wear protective clothing to prevent contact with skin and eyes.

## Section 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

**Personal precautions:** Refer to section 8 of SDS for personal protection details.

### 6.2. Environmental precautions

**Environmental precautions:** Do not discharge into drains or rivers.

### 6.3. Methods and material for containment and cleaning up

**Clean-up procedures:** Absorb into dry earth or sand.

### 6.4. Reference to other sections

**Reference to other sections:** Refer to section 8 of SDS. Refer to section 13 of SDS.

## Section 7: Handling and storage

### 7.1. Precautions for safe handling

**Handling requirements:** Not applicable.

### 7.2. Conditions for safe storage, including any incompatibilities

**Storage conditions:** Store in a cool, well ventilated area. Keep container tightly closed. Keep away from direct sunlight.

**Suitable packaging:** Must only be kept in original packaging.

### 7.3. Specific end use(s)

**Specific end use(s):** Fertilisers.

## Section 8: Exposure controls/personal protection

### 8.1. Control parameters

[cont...]

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## Hazardous ingredients:

**NITRIC ACID 60%**

## Workplace exposure limits:

State	ACGIH 8 hour TWA	ACGIH 15 min. STEL	OSHA PEL	OSHA PEL
US	2 ppm	4 ppm	2 ppm	5 mg/m3

## ZINC OXIDE

US	2 mg/m3	10 mg/m3	5 mg/m3 (respirable dust)	15 mg/m3 (total dust)
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## DNEL/PNEC Values

**DNEL / PNEC** No data available.

## 8.2. Exposure controls

**Engineering measures:** Ensure all engineering measures mentioned in section 7 of SDS are in place.

**Respiratory protection:** Not required under normal conditions of use.

**Hand protection:** Protective gloves.

**Eye protection:** Safety glasses.

**Skin protection:** Protective clothing.

**Environmental:** Not applicable.

## Section 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

**State:** Liquid

**Odor:** No data available.

**Colour:** Brown

**Odor threshold:** No data available.

**Evaporation rate:** No data available.

**Decomposition temperature:** Liquid

**Oxidising:** No data available.

**Melting point/range°C:** No data available.

**Solubility in water:** No data available.

**upper:** No data available.

**Viscosity:** No data available.

**Part.coeff. n-octanol/water:** No data available.

**Boiling point/range°C:** No data available.

**Vapour pressure:** No data available.

**Flammability limits %: lower:** No data available.

**pH:** 2.3

**Flash point°C:** No data available.

**Autoflammability°C:** No data available.

**Relative density:** 1.4-1.5

**VOC g/l:** No data available.

### 9.2. Other information

**Other information:** No data available.

## Section 10: Stability and reactivity

[cont...]

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## 10.1. Reactivity

**Reactivity:** No data available.

## 10.2. Chemical stability

**Chemical stability:** No data available.

## 10.3. Possibility of hazardous reactions

**Hazardous reactions:** No data available.

## 10.4. Conditions to avoid

**Conditions to avoid:** Direct sunlight. Extremes of temperature.

## 10.5. Incompatible materials

**Materials to avoid:** No data available.

## 10.6. Hazardous decomposition products

**Haz. decomp. products:** No data available.

## Section 11: Toxicological information

### 11.1. Information on toxicological effects

**Hazardous ingredients:**

#### CALCIUM NITRATE

DERMAL	RAT	LD50	>2000	mg/kg
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#### ZINC OXIDE

IPR	RAT	LD50	240	mg/kg
ORL	MUS	LD50	7950	mg/kg

**Relevant hazards for product:**

Hazard	Route	Basis
Acute toxicity (ac. tox. 4)	ING	Hazardous: calculated
Skin corrosion/irritation	DRM	Hazardous: calculated
Serious eye damage/irritation	OPT	Hazardous: calculated

### Symptoms / routes of exposure

**Skin contact:** No data available.

**Eye contact:** No data available.

**Ingestion:** No data available.

**Inhalation:** No data available.

**Delayed / immediate effects:** No data available.

**Other information:** Not applicable.

[cont...]

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## Section 12: Ecological information

### 12.1. Toxicity

**Hazardous ingredients:**

**NITRIC ACID 60%**

RAINBOW TROUT ( <i>Oncorhynchus mykiss</i> )	96H LC50	12.5	mg/l
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### 12.2. Persistence and degradability

**Persistence and degradability:** No data available.

### 12.3. Bioaccumulative potential

**Bioaccumulative potential:** No data available.

### 12.4. Mobility in soil

**Mobility:** No data available.

### 12.5. Results of PBT and vPvB assessment

**PBT identification:** This product is not identified as a PBT/vPvB substance.

### 12.6. Other adverse effects

**Other adverse effects:** No data available.

## Section 13: Disposal considerations

### 13.1. Waste treatment methods

**Disposal operations:** Dispose of waste and residues in accordance with local authority requirements.

**Recovery operations:** Dispose of in compliance with all local and national requirements.

**Disposal of packaging:** Empty containers should be disposed of in accordance with local and national regulations.

**NB:** The user's attention is drawn to the possible existence of regional or national regulations regarding disposal.

## Section 14: Transport information

**Transport class:** This product does not require a classification for transport.

## Section 15: Regulatory information

### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

**Specific regulations:** Classified and labelled in accordance with OSHA GHS 29 CFR 1910.1200.

### 15.2. Chemical Safety Assessment

**Chemical safety assessment:** A chemical safety assessment has not been carried out for the substance or the mixture by the supplier.

[cont...]

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## Section 16: Other information

### Other information

**Other information:** This safety data sheet is prepared in accordance with OSHA HCS 29 CFR 1910.1200.

**Date of preparation:** 06/01/2017

**Legal disclaimer:** The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. This company shall not be held liable for any damage resulting from handling or from contact with the above product.