

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture
Trade name : Ferrosol Pro

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

1.2.1. Relevant identified uses

Use of the substance/mixture : Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Fertilizer

1.2.2. Uses advised against

Restrictions on use : No additional information available

1.3. Details of the supplier of the safety data sheet

Supplier

The Aquatrols Company
The Panorama Park Street
Ashford Kent, UK
T: +44 (0) 1233 633267
E-mail: SDS@aquatrols.com

1.4. Emergency telephone number

Emergency number : Chemtrec: (800) 424-9300 (United States and Canada), Chemtrec International: +1-703-527-388

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to GB CLP (SI 2019:720 as amended)

Serious eye damage/eye irritation, Category 2 H319

Full text of H- and EUH-statements: see section 16

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

Labelling according to GB CLP (SI 2019:720 as amended)

Hazard pictograms (GB CLP) :



GHS07

Signal word (GB CLP) : Warning
Hazard statements (GB CLP) : H319 - Causes serious eye irritation.
Precautionary statements (GB CLP) : P264 - Wash hands thoroughly after handling.
P280 - Wear protective gloves, protective clothing, eye protection, face protection.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313 - If eye irritation persists: Get medical advice, attention.

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According to REACH Regulation (EC) No 1907/2006, as retained and amended in UK law.

2.3. Other hazards

Component	
Substance(s) not meeting the PBT criteria of UK REACH regulation, in accordance with Annex XIII	Citric acid (77-92-9), Iron (II) sulfate (1:1) heptahydrate (7782-63-0)
Substance(s) not meeting the vPvB criteria of UK REACH regulation, in accordance with Annex XIII	Citric acid (77-92-9), Iron (II) sulfate (1:1) heptahydrate (7782-63-0)

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Classification according to GB CLP (SI 2019:720 as amended)
Citric acid	CAS-No.: 77-92-9 EC-No.: 201-069-1 UK Index-No.: 607-750-00-3	≥ 1 – ≤ 10	STOT SE 3, H335 Eye Irrit. 2, H319
Iron (II) sulfate (1:1) heptahydrate	CAS-No.: 7782-63-0 EC-No.: 231-753-5 UK Index-No.: 026-003-01-4	≥ 1 – ≤ 10	Acute Tox. 4 (Oral), H302 Eye Irrit. 2, H319 Skin Irrit. 2, H315

Specific concentration limits:

Name	Product identifier	Specific concentration limits (%)
Iron (II) sulfate (1:1) heptahydrate	CAS-No.: 7782-63-0 EC-No.: 231-753-5 UK Index-No.: 026-003-01-4	(25 ≤ C ≤ 100) Skin Irrit. 2; H315

Full text of H- and EUH-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation	: If inhaled and if breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. If you feel unwell, seek medical advice.
First-aid measures after skin contact	: Wash skin thoroughly with mild soap and water. Take off contaminated clothing and wash it before reuse. Get medical attention if symptoms occur.
First-aid measures after eye contact	: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
First-aid measures after ingestion	: Do not induce vomiting. Rinse mouth out with water. Get medical advice/attention if you feel unwell.

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

Symptoms/effects after inhalation	: At high concentrations, the vapours can be irritating to the respiratory system.
Symptoms/effects after skin contact	: Rednesses. Itching. Swelling.
Symptoms/effects after eye contact	: Causes serious eye irritation. Blurred vision. Redness, itching, tears.
Symptoms/effects after ingestion	: Abdominal pain, nausea.

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

Treat symptomatically.

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According to REACH Regulation (EC) No 1907/2006, as retained and amended in UK law.

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Dry powder. Carbon dioxide. Water spray. Foam. Use extinguishing agent suitable for surrounding fire.
- Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : Presents no particular fire or explosion hazard. Burning produces stinking and toxic fumes. In case of fire and/or explosion do not breathe fumes.
- Hazardous decomposition products in case of fire : Toxic fumes may be released. Carbon dioxide. Carbon monoxide.

5.3. Advice for firefighters

- Firefighting instructions : Evacuate the danger area. Move containers from fire area if it can be done without personal risk. Use water spray or fog for cooling exposed containers. Fight fire from safe distance and protected location. Use extinguishing media appropriate for surrounding fire. Prevent fire fighting water from entering the environment.
- Protection during firefighting : Wear a self contained breathing apparatus. Wear fire/flammable resistant/retardant clothing. Do not attempt to take action without suitable protective equipment.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Avoid all contact with skin, eyes, or clothing.

6.1.1. For non-emergency personnel

- Protective equipment : Wear recommended personal protective equipment.
- Emergency procedures : Evacuate unnecessary personnel. Ventilate spillage area. Avoid contact with skin and eyes. Avoid breathing vapours. Do not touch or walk on the spilled product. No action shall be taken without appropriate training or involving any personal risk.

6.1.2. For emergency responders

- Protective equipment : Do not attempt to take action without suitable protective equipment.
- Emergency procedures : Evacuate unnecessary personnel. Ventilate area.

6.2. Environmental precautions

Avoid release to the environment. Notify authorities if product enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

- For containment : Stop leak without risks if possible. Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Caution : this product can cause the floor to be slippery.
- Methods for cleaning up : Move containers from spill area. Recover small spills with a suitable absorbent, like diatomaceous earth. For large spills, confine the spill in a dike and charge it with wet sand or earth for subsequent safe disposal. Ventilate spillage area. Clean contaminated surfaces with an excess of water. Prevent entry to sewers and public waters.
- Other information : Dispose of via an authorised person/ licensed waste disposal contractor or by other suitable waste treatment techniques. Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13. For further information refer to section 8: "Exposure controls/personal protection".

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SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Take all necessary technical measures to avoid or minimize the release of the product on the workplace. Ensure good ventilation of the work station. Provide local exhaust or general room ventilation. Do not breathe vapours. Wear personal protective equipment. Do not get in eyes, on skin, or on clothing.
- Hygiene measures : Handle in accordance with good industrial hygiene and safety procedures. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Do not eat, drink or smoke when using this product. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

- Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Direct sunlight, Strong oxidizers, Store in a dry place. Keep away from food, drink and animal feedingstuffs. Keep container tightly closed. Containers which are opened should be properly resealed and kept upright to prevent leakage. Store in accordance with local, regional, national or international regulation.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 National occupational exposure and biological limit values

No additional information available

8.1.2. Recommended monitoring procedures

Monitoring methods

Monitoring methods	Refer to all applicable national, international and local regulations or provisions. Workplace exposure - General requirements for the performance of procedures for the measurement of chemical agents. Workplace atmospheres. Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy. Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents.
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8.1.3. Air contaminants formed

No additional information available

8.1.4. DNEL and PNEC

No additional information available

8.1.5. Control banding

No additional information available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Appropriate engineering controls:

Provide local exhaust or general room ventilation. Ensure exposure is below occupational exposure limits (where available). Handle in accordance with good industrial hygiene and safety procedures. Avoid all unnecessary exposure.

8.2.2. Personal protection equipment

Personal protective equipment:

Wear recommended personal protective equipment. Personal protective equipment should be chosen according to the CEN standards and in discussion with the supplier of the protective equipment.

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8.2.2.1. Eye and face protection

Eye protection:

Chemical goggles or safety glasses. ISO 16321-1

8.2.2.2. Skin protection

Skin and body protection:

Wear suitable protective clothing. Skin protection appropriate to the conditions of use should be provided

Hand protection:

Chemical resistant gloves (according to European standard ISO 374-1 or equivalent). Please follow the instructions related to the permeability and the penetration time provided by the manufacturer

8.2.2.3. Respiratory protection

Respiratory protection:

No respiratory protection needed under normal use conditions. Where excessive vapour, mist, or dust may result, use approved respiratory protection equipment. EN 149

8.2.2.4. Thermal hazards

No additional information available

8.2.3. Environmental exposure controls

Environmental exposure controls:

Avoid release to the environment. Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Colour	: Brown. green.
Odour	: slight.
Odour threshold	: Not available
pH	: 2 – 3.5
Melting point	: Not available
Freezing point	: $\approx -2\text{ }^{\circ}\text{C}$
Boiling point	: $> 100\text{ }^{\circ}\text{C}$
Flash point	: Not available
Explosive limits	: Not available
Vapour pressure	: Not available
Vapour pressure at 50°C	: Not available
Relative vapour density at 20°C	: Not available
Relative density	: 1.18 – 1.22 (H ₂ O = 1; 20 °C)
Density	: 1.18 – 1.22 g/cm ³
Solubility	: soluble in water.
Partition coefficient n-octanol/water (Log Kow)	: Not available
Auto-ignition temperature	: Not available
Decomposition temperature	: Not available
Viscosity, kinematic	: Not available
Explosive properties	: Not available

9.2. Other information

Particle characteristics	: Not applicable
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SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport. No dangerous reactions known.

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According to REACH Regulation (EC) No 1907/2006, as retained and amended in UK law.

10.2. Chemical stability

Stable under normal conditions of use.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use. Hazardous polymerisation: Will not occur.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7). Protect from sunlight. Overheating. Extremely high or low temperatures.

10.5. Incompatible materials

Oxidising agents.

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	: Not classified (Based on available data, the classification criteria are not met)
Acute toxicity (dermal)	: Not classified (Based on available data, the classification criteria are not met)
Acute toxicity (inhalation)	: Not classified (Based on available data, the classification criteria are not met)

Iron (II) sulfate (1:1) heptahydrate (7782-63-0)

LD50 oral rat	300 – 2000 mg/kg
LD50 oral	1.52 mg/kg mouse
LD50 dermal rat	> 2000 mg/kg

Skin corrosion/irritation	: Not classified (Based on available data, the classification criteria are not met) pH: 2 – 3.5
Serious eye damage/irritation	: Causes serious eye irritation. pH: 2 – 3.5
Respiratory or skin sensitisation	: Not classified (Based on available data, the classification criteria are not met)
Germ cell mutagenicity	: Not classified (Based on available data, the classification criteria are not met)
Carcinogenicity	: Not classified (Based on available data, the classification criteria are not met)
Reproductive toxicity	: Not classified (Based on available data, the classification criteria are not met)
STOT-single exposure	: Not classified (Based on available data, the classification criteria are not met)

Citric acid (77-92-9)

STOT-single exposure	May cause respiratory irritation.
STOT-repeated exposure	: Not classified (Based on available data, the classification criteria are not met)
Aspiration hazard	: Not classified (Based on available data, the classification criteria are not met)

Other information

Endocrine disrupting properties

No additional information available

Other information

Other information	: No experimental study on the product is available. The information given is based on our knowledge of the components and the classification of the product is determined by calculation
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According to REACH Regulation (EC) No 1907/2006, as retained and amended in UK law.

SECTION 12: Ecological information

12.1. Toxicity

Hazardous to the aquatic environment, short-term (acute)	: Not classified (Based on available data, the classification criteria are not met)
Hazardous to the aquatic environment, long-term (chronic)	: Not classified (Based on available data, the classification criteria are not met)
Additional information	: No experimental study on the product is available. The information given is based on our knowledge of the components and the classification of the product is determined by calculation.

12.2. Persistence and degradability

Ferrosol Pro

Persistence and degradability	Biodegradability in water: no data available.
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12.3. Bioaccumulative potential

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Bioaccumulative potential	No data available concerning bioaccumulation.
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12.4. Mobility in soil

Ferrosol Pro

Ecology - soil	No additional information available.
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12.5. Results of PBT and vPvB assessment

Component

Citric acid (77-92-9)	This product does not contain substances at $\geq 0.1\%$ that meet the PBT criteria of UK REACH regulation, annex XIII This product does not contain substances at $\geq 0.1\%$ that meet the vPvB criteria of UK REACH regulation, annex XIII
Iron (II) sulfate (1:1) heptahydrate (7782-63-0)	This product does not contain substances at $\geq 0.1\%$ that meet the PBT criteria of UK REACH regulation, annex XIII This product does not contain substances at $\geq 0.1\%$ that meet the vPvB criteria of UK REACH regulation, annex XIII

12.6. Other adverse effects

Other adverse effects	: No additional information available.
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SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods	: Dispose of contents/container in accordance with licensed collector's sorting instructions.
Sewage disposal recommendations	: Do not dispose of waste into sewer.
Product/Packaging disposal recommendations	: Dispose in a safe manner in accordance with local/national regulations.
Ecological waste information	: Avoid release to the environment.
European List of Waste (LoW, EC 2000/532)	: Disposal must be carried out using appropriate EWC code

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / ADN / RID

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According to REACH Regulation (EC) No 1907/2006, as retained and amended in UK law.

ADR	IMDG	IATA	ADN	RID
14.1. UN number				
Not regulated for transport				
14.2. UN proper shipping name				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.3. Transport hazard class(es)				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.4. Packing group				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.5. Environmental hazards				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
No supplementary information available				

14.6. Special precautions for user

Overland transport

Not regulated

Transport by sea

Not regulated

Air transport

Not regulated

Inland waterway transport

Not regulated

Rail transport

Not regulated

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

SECTION 15: Regulatory information

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

15.1.1. National regulations

UK REACH Annex XVII (Restriction List)

This product contains no substance(s) listed on UK REACH Annex XVII (Restriction List) equal to or above the level of SDS disclosure

UK REACH Annex XIV (Authorisation List)

This product contains no substance(s) listed on UK REACH Annex XIV (Authorisation List) equal to or above the 0.1% level of disclosure

UK REACH Candidate List (SVHC)

This product contains no substance(s) listed on the UK REACH Candidate List (SVHC) above the 0.1% level of disclosure

GB PIC regulation (Prior Informed Consent)

This product contains no substance(s) listed on the GB PIC List equal to or above the level of SDS disclosure

POP Regulation (Persistent Organic Pollutants)

This product contains no substance(s) listed on the GB POP List equal to or above the level of SDS disclosure

Ozone Regulation (S.I. No. 168 of 2015)

This product contains no substance(s) listed on the GB Ozone Depletion List equal to or above the level of SDS disclosure

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According to REACH Regulation (EC) No 1907/2006, as retained and amended in UK law.

Control of Poisons and Explosives Precursors Act

This product contains no substance(s) listed as a reportable poison on the Control of Poisons and Explosives Precursors Regulations equal to or above the level of SDS disclosure

This product contains no substance(s) listed as a regulated poison on the Control of Poisons and Explosives Precursors Regulations equal to or above the level of SDS disclosure

This product contains no substance(s) listed as a reportable explosive precursor on the Control of Poisons and Explosives Precursors Regulations equal to or above the level of SDS disclosure

This substance is not listed as a regulated poison on the Control of Poisons and Explosives Precursors Regulations

Drug Precursors Regulation (273/2004)

This product contains no substance(s) listed on the GB Drug Precursors List equal to or above the level of SDS disclosure

15.1.2. Other information

15.2. Chemical safety assessment

No additional information available

SECTION 16: Other information

Data sources : ECHA (European Chemicals Agency). CLP Regulation (EC) No 1272/2008, as retained and amended in UK law. Supplier's safety documents.

Training advice : Training staff on good practice.

Full text of H- and EUH-statements:	
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Skin Irrit. 2	Skin corrosion/irritation, Category 2
STOT SE 3	Specific target organ toxicity – Single exposure, Category 3, Respiratory tract irritation
H302	Harmful if swallowed.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:		
Eye Irrit. 2	H319	Calculation method

Safety Data Sheet (SDS), UK

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.