

Sulphate of Iron

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1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY/UNDERTAKING

1.1 Name of Product

Sulphate of Iron

1.2 Use of the Substance/Preparation

Fertiliser

1.3 Manufacturer/Distributor

Thomas Elliott (Fertilisers)
Selby Place
Stanley Industrial Estate
Skelmersdale
WN8 8EF
Tel: 01695 51875
Email: info@thomas-elliott.co.uk

1.4 Emergency Contact

Tel: 01695 51875 (Office Hours)

2. HAZARDS IDENTIFICATION

2.1 Classification

Classification according to Directive EC 1272/2008 Classification, Labelling and Packaging.

Physical hazards

Not Classified

Health hazards

Acute Tox. 4 – H302

Skin Irrit. 2 - H315

Eye Irrit. 2 - H319

Environmental hazards

Not Classified

2.2 Label elements

Pictogram



Signal Word

Warning

Hazard statements

H302 Harmful if swallowed

H315 Causes skin irritation

H319 Causes serious eye irritation

Precautionary statements

P273 Avoid release to the environment.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P301+P312 IF SWALLOWED: Call a POISON CENTRE or doctor/physician if you feel unwell.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P313 Get medical advice/attention.

2.3 Other hazards

None

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	CAS/EINECS	Classification
Ferrous Sulphate Heptahydrate	7782-63-0	Acute tox 4 H302
	231-753-5	Skin irr 2 H315
		Eye irr 2 H319

4. FIRST AID MEASURES

4.1 Description of First Aid Measures

Eye contact – Rinse immediately, with plenty of lukewarm water, also under the eyelids, for several minutes, consult a doctor/physician. Remove contact lenses, if present and easy to do so. Continue rinsing.

Skin contact – Wash off with water, if symptoms develop or persist, call a doctor/physician.

Ingestion – Call a doctor/physician immediately. Do not induce vomiting. Rinse mouth, with water, drink 1 or 2 glasses of water or milk. Never give anything by mouth to unconscious person.

Inhalation – Remove to fresh air. Rinse mouth and nose with water, if symptoms develop or persist, call a doctor/physician.

4.2 Most important symptoms and effects, both acute and delayed

Can be acutely toxic but main symptoms will be irritation to the eye.

4.3 Indication of immediate medical attention and special treatment needed

Seek medical attention if symptoms develop or persist.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing Media

Use foam, carbon dioxide, dry powder, sand. The mixture is not classified as flammable. As such extinguishing media appropriate for surrounding materials should be chosen.

5.2 Special hazards arising from substance or mixture

Sulphur Dioxide (SO₂)

5.3 Advice for firefighters

Wear self-contained breathing apparatus in confined spaces.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal Precautions

Ensure adequate ventilation. Wear protective gloves and eye protection. Wash hands and exposed skin after handling.

6.2 Environmental precautions

Do not allow to enter drains or sewers. Spillages or uncontrolled discharges into watercourses must be alerted to the appropriate regulatory body.

6.3 Methods and material for containment and cleaning up:

Sweep up and shovel product or use other means and place in container for reuse (preferred) or disposal. Dilute residues from larger spillages with water and neutralise with lime or limestone powder.

7. HANDLING & STORAGE

7.1 Precautions for Safe Handling

Ensure good ventilation at workplace. Ensure good hygiene practices are observed. Do not eat, drink or smoke when handling this product. Do not breathe dust. Avoid contact with skin and eyes. Ensure workplace exposure limits are observed. Do not block stack pallets. Wear gloves in a suitable material such as PVC, neoprene or natural rubber. Please observe the instructions regarding permeability and breakthrough time, which are provided by the supplier of the gloves. Also consider the specific local conditions under which the product is used, such as danger of cuts, abrasion and contact time. Tightly fitting safety goggles must be worn.

7.2 Conditions for Safe Storage

Requirements to be met by storerooms and containers

Plastic material (PE, PP, PVC), reinforced polyester, epoxy-coated concrete, titanium, acid-proof or rubber-coated steel.

Materials to avoid

Non acid-proof metals - such as aluminium, copper and iron – bases, unalloyed steel, galvanised surfaces.

Information about storage in one common storage facility

Not required.

Further information about storage conditions

Keep away from incompatible materials. Avoid freezing. Protect from heat and direct sunlight. Store under dry conditions. Storage temperature <30°C.

7.3 Specific end use

Fertiliser

8. EXPOSURE CONTROLS/ PERSONAL PROTECTION

8.1 Control parameters

Ferrous Sulphate Heptahydrate (CAS 7782-63-0), Desired No Effect Level (DNEL)

Worker

Acute systemic effects dermal:	2.8 mg/kg/day
Acute systemic effects inhalative:	9.9 mg/m ³
Systemic long-term effects dermal:	2.8 mg/kg/day
Systemic long-term effects inhalative:	9.9 mg/m ³

General Population

Acute systemic effects oral:	1.4 mg/kg/day
Acute systemic effects dermal:	1.4 mg/kg/day
Acute systemic effects inhalative:	2.5 mg/m ³
Systemic long-term effects oral:	1.4 mg/kg/day
Systemic long-term effects dermal:	1.4 mg/kg/day
Systemic long-term effects inhalative:	2.5 mg/m ³

Ferrous Sulphate Heptahydrate (CAS 7782-63-0), Predicted No Effect Concentration (PNEC)

The PNECs given in this section were derived based on the concentration which would cause a 10% increase above typical natural background levels of iron in soil and sediment. Thus the respective PNEC is equal to 110% of the typical natural background level of iron.

Water

Iron is an essential trace element for fish, aquatic invertebrates and plants. A direct toxicity could not be demonstrated in tests. Therefore no PNEC was derived.

Sewage Treatment Plants, Sediment and Soil

STP	500 mg/L
Sediment (Fresh Water)	49.5 g/kg
Sediment (Marine Water)	49.5 g/kg
Soil	55.5 g/kg

Oral (food chain)

Iron is an essential trace element for fish, aquatic invertebrates and plants. A direct toxicity could not be demonstrated in tests, therefore no PNEC was derived.

8.2 Exposure Controls:

The following precautions are considered to be good practice when using any chemicals irrespective of their classification unless otherwise specified. Primary Hazard considered as handling of concentrate.

Eye protection: tightly sealed safety glasses.

Gloves: to BS EN374 of gauntlet type in Natural Rubber/PVC/Neoprene recommended for acid resistance.

Clothing: Coveralls/apron to BS EN465/466/4679.

9. PHYSICAL & CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties:

Appearance	Greenish, crystalline solid
Odour	Odourless
pH	Approx. 3.6 (400g/L)
Boiling point	n/a
Melting point	64°C
Flash point	n/a
Flammability	n/a
Autoflammability	n/a
Explosivity	n/a
Oxidising properties	n/a
Vapour Pressure	n/a
Bulk density	1.89g/cm ³
Solubility	365g/L at 10°C
Decomposition temperature	n/a

9.2 Other Information:

None

10. STABILITY & REACTIVITY

10.1 Reactivity

The substance is stable under normal use.

10.2 Stability

No decomposition if used and stored away from oxidising agents.

10.4 Conditions to Avoid

Avoid contact with oxidising agents.

10.5 Incompatible materials

Oxidising agents

10.6 Hazardous Decomposition Products

No dangerous decomposition products known.

11. TOXICOLOGICAL INFORMATION

11.1 Information on Toxicological Effects

Acute toxicity, data for iron sulphates and iron chlorides

LD/LC50 values that are relevant for classification:

Oral LD50	132-881	mg/kg (rat) (OECD 423)
Dermal LD50	>400	mg/kg (rat) (OECD 402)
Inhalative LC50		no relevant data available

Acute toxicity, data for Ferrous Sulphate Heptahydrate (7720-78-7)

LD/LC50 values that are relevant for classification:

Oral LD50	657 - 4390	mg/kg (rat) (derived)
Oral LD50	>2000	mg/kg (rat) (OECD 401)
Dermal LD50	>1992	mg/kg (rat) (derived)
Inhalative LC50		no relevant data available

Primary irritant effect for Ferrous Sulphate Heptahydrate (7720-78-7)

On the skin	OECD 404	Irritant for skin and mucous membranes
On the eye	OECD 405	Irritant effect
Sensitization	OECD 429 (LLNA-test)	No sensitizing effects

Subacute to chronic toxicity

Data of the Key Studies for iron sulphates and iron chlorides:

Oral NOAEL	57-65	mg Fe/kg/day (rat, 90 days) (not according to OECD)
Dermal NOAEL		no relevant data available
Inhalative NOAEC		no relevant data available

CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)

There are no indications of CMR effects.

Specific target organ toxicity (STOT)

No specific target organ toxicity according to the criteria defined in Regulation (EC) No. 1272/2008.

Aspiration hazard

No data, not an aspiration hazard.

Specific target organ toxicity - single exposure

STOT - single exposure

Not classified as a specific target organ toxicant after a single exposure.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure

Not classified as a specific target organ toxicant after repeated exposure.

Aspiration hazard

Not anticipated to present an aspiration hazard, based on chemical structure.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Data is experimentally not accessible.

Under standard test conditions, the ferrous ion, Fe²⁺, is unstable and is oxidised to the ferric, Fe³⁺, ion. Ferric iron salts have a high rate of conversion to insoluble ferric hydroxide, in consequence, Fe²⁺ is to a great extent removed from the test system.

Furthermore, iron plays an important role in biological processes, with iron homeostasis being under strict control. In conclusion, iron is not considered to be toxic to the aquatic environment under normal conditions.

12.2 Persistence and degradability

No relevant for inorganic substances.

12.3 Bioaccumulative potential

Iron is a bioessential trace element for organisms and plays an important role in biological processes. The uptake of iron is strictly controlled by homeostatic process. In conclusion, bioaccumulation poses no concern.

12.4 Mobility in soil

The substance is immobile in soil.

Additional ecological information:

AOX-indication: <2mg/kg

12.5 Results of PBT and vPvB

The product does not contain any substances classified as PBT or vPvB.

12.6 Other adverse data

No further relevant information available.

13. DISPOSAL CONSIDERATIONS

Disposal route should not permit contamination of groundwater.

13.1 Waste treatment methods

This product is classified as hazardous waste and as such is covered by local waste legislation.

P273 Avoid release to the environment.

Do not discharge directly into watercourse or any other controlled watercourse.

P501 Waste disposal according to EC-regulations 2006/12/EC and 91/689/EEC in the corresponding versions, covering waste and dangerous waste.

14. TRANSPORT INFORMATION

14.1 UN-Number

ADR, IMDG, IATA Not applicable

14.2 UN proper shipping name

ADR, IMDG, IATA Not applicable

14.3 Transport hazard class(es)

ADR, IMDG, IATA Not applicable

14.4 Packaging Group

ADR, IMDG, IATA Not applicable

14.5 Environmental hazards

Not an environmentally hazardous substance.

14.6 Special precautions for user

None

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Listed

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific to this substance:

This substance is classified and labelled in accordance with regulation 1999/45/EC, 1272/2008, the statutory instrument No.716 2009 Chemicals (Hazard Information and Packaging) regulations and the EC Fertiliser Regulations 2003, Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No

1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments.

15.2 Chemical Safety Assessment

Not undertaken for this material

16. OTHER INFORMATION

Text of the hazard statements mentioned in Section 3:

H302: Harmful if swallowed

H315: Causes skin irritation

H319: Causes serious eye irritation

Reason for revision

MSDS re-formatted in-line with regulation 453/2010 all sections affected.

Liability

The product label provides information on the use of the product: do not use otherwise, unless you have assessed any potential hazard involved and the safety measures required. Prepared by Thomas Elliott (Fertilisers), for Health and Safety purposes from the best knowledge available at the time of printing.