



## SAFETY DATA SHEET

### SYMBIO TURF HARDENER 3.0.3+2.9%Fe+1.5%Mg

SDS COMPLETED 20<sup>TH</sup> NOVEMBER 2015

VERSION 01

REVISION NUMBER: N/A

#### 1. Identification of the Substance and the Company

##### 1.1. Product identifier

SYMBIO TURF HARDENER 3:0:3+2.9%Fe+1.5%Mg

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

Identified uses Fertiliser

##### 1.3 Details of the supplier of the safety data sheet

###### Company name:

Eco Solutions (C&R) Ltd T/a Symbio  
Unit 8  
Coopers Place  
Combe Lane  
Wormley  
Surrey  
GU8 5SZ

**Tel:** +44 (0) 1428 685762

**Fax:** +44 (0)1428 685702

**Email:** [info@symbio.co.uk](mailto:info@symbio.co.uk)

##### 1.4 Emergency Telephone No. :

Emergency telephone +44 (0) 1428 685762

#### 2. Hazards Identification

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

not classified.

##### 2.2 Label elements:

**Signal Word:** none

**Hazard Statements:** none

###### Precautionary statement(s) (prevention):

P261: avoid breathing dust

P285: in case of inadequate ventilation, wear respiratory protection

P264: Wash hands thoroughly after handling.

P402+404: Store in a dry place. Store in a closed container.

###### Precautionary statement(s) (response):

P304+P341: IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.

P342+P311: If experiencing respiratory symptoms call a doctor/physician.

###### Precautionary statement(s) (disposal):

P501: Dispose of contents/container in accordance with local regulations

##### 2.3 Other hazards:

This substance is not classified as PBT or vPvB according to current EU criteria.

This product contains less than 1% quartz (respirable). Depending on the type of handling and use (e.g.grinding, drying), airborne respirable crystalline silica (quartz cristobalite) may be generated. Prolonged and/or massive inhalation of respirable crystalline silica dust may cause lung fibrosis, commonly referred to as silicosis. Principal symptoms of silicosis are cough and breathlessness. Occupational exposure to respirable crystalline silica dust should be monitored and controlled.

This product should be handled with care to avoid dust generation.



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#### 3. Composition/Information on Ingredients

##### 3.2. Mixtures

Compound mineral fertiliser containing 3% nitrogen, 3% potassium 2.9% Iron

Chemical Name	CAS-No./ EINECS-No.	Symbol(s) and phrases	Precautionary statements:	Concentration
Ferrous Sulphate monohydrate	17375-41-6/ 231-753-5	GHS07 Acute Tox. 4 H302: Harmful if swallowed Skin Irrit. 2 H315: Causes skin irritation Eye Irrit. 2 H319: Causes serious eye irritation	P273 P280 P301/312 P302/352 P305/351/338 P313	>5% C <10%

#### 4. First Aid Measures

##### 4.1. Description of first aid measures

**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.

**Skin contact** – Wash with plenty of soap and water. Take off contaminated clothing and wash before reuse.

**Ingestion** – wash out mouth with water and seek medical advice.

**Inhalation** – remove to fresh air.

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

**Skin Contact:** Repeated and/or prolonged contact may cause irritation.

**Eye Contact:** Dusty/gritty material expected to cause irritation to eyes.

**Ingestion:** May cause irritation of gastro intestinal tract leading to nausea, vomiting, abdominal pain and diarrhoea.

**Inhalation:** High concentration of dust may be irritating to trachea and lungs.

##### 4.3 Indication of immediate medical attention and special treatment needed:

none

#### 5. Fire-Fighting Measures

Non Flammable

##### 5.1. Extinguishing media

If involved in a fire use water spray, CO<sub>2</sub> or dry powder.

##### 5.1 Special hazards arising from substance or mixture:

In intense heat, product decomposition will release toxic nitrogen and sulphur oxide fumes.

##### 5.2 Advice for firefighters:

Wear self-contained breathing apparatus in confined spaces. Contain contaminated run-off.

#### 6. Accidental Release Measures

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

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



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#### 6.2 Environmental precautions:

Do not allow to enter drains or sewers.

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

Sweep up and shovel product or other means and place in container for reuse (preferred) or disposal.

### 7. Handling and 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.

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

Store in original containers, tightly closed in a secure, well ventilated, cool but frost-free, dry area. Store clear of foodstuffs and in a separate stack from herbicides.

#### 7.3 Specific end use:

Fertiliser.

### 8. Exposure controls/ Personal protection

#### 8.1. Control parameters Occupational exposure limits

Follow workplace regulatory exposure limits for all types of airborne dust (e.g. total dust, respirable dust, respirable crystalline silica dust) The OEL (Occupational Exposure Limit) for respirable crystalline silica dust is 0.1mg/m<sup>3</sup> in the United Kingdom, measured as an 8 hour TWA (Time Weighted Average). Nuisance dust: Inhalable dust 10 mg/m<sup>3</sup> // Respirable dust 4 mg/m<sup>3</sup>

**DNELs** Figures stated are for ferrous sulphate.7H<sub>2</sub>O

##### Worker

Acute systemic effects, dermal:	(FeSO <sub>4</sub> *7H <sub>2</sub> O) 2.8 mg/kg/d
Acute systemic effects, inhalative:	(FeSO <sub>4</sub> *7H <sub>2</sub> O) 9.9 mg/m <sup>3</sup>
Systemic long-term effects, dermal:	(FeSO <sub>4</sub> *7H <sub>2</sub> O) 2.8 mg/kg/d
Systemic long-term effects, inhalative:	(FeSO <sub>4</sub> *7H <sub>2</sub> O) 9.9 mg/m <sup>3</sup>

##### Consumer

Acute systemic effects, oral:	(FeSO <sub>4</sub> *7H <sub>2</sub> O) 1.4 mg/kg/d
Acute systemic effects, dermal:	(FeSO <sub>4</sub> *7H <sub>2</sub> O) 1.4 mg/kg/d
Acute systemic effects, inhalative:	(FeSO <sub>4</sub> *7H <sub>2</sub> O) 2.5 mg/m <sup>3</sup>
Systemic long-term effects, oral:	(FeSO <sub>4</sub> *7H <sub>2</sub> O) 1.4 mg/kg/d
Systemic long-term effects, dermal:	(FeSO <sub>4</sub> *7H <sub>2</sub> O) 1.4 mg/kg/d
Systemic long-term effects, inhalative:	(FeSO <sub>4</sub> *7H <sub>2</sub> O) 2.5 mg/m <sup>3</sup>

##### PNECs

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 (STP)

PNEC STP Fe: 500 mg/l;

##### Sediment

PNEC Sediment (freshwater): Fe: 49.5 g/kg;

PNEC Sediment (marine water): Fe: 49.5 g/kg;

Soil PNEC soil: Fe: 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



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#### 8.2 Exposure Controls:

##### General protective and hygienic measures:

the general personal protection measures of the chemical industry apply. The usual precautionary measures should be adhered to in the handling of the chemicals. Wear protective gloves and eye protection. Take off contaminated clothing and wash before reuse. Do not eat, drink or smoke when handling this product.

##### Breathing equipment:

Dust Mask FFP2 Not required if all workplace limits are observed and good ventilation is ensured.

##### Protection of hands:

Requirements according to EN 420. Check protective gloves prior to each use for their proper condition. Preventive skin protection by use of skin protecting agents is recommended.

##### Material of gloves:

Polychloroprene recommended.

##### Penetration time of glove material:

Protective gloves should be replaced at first sign of wear

##### Eye protection:

Tightly sealed safety glasses.

##### Body protection:

Protective work clothing.

#### 9. Physical and Chemical properties

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

Appearance	grey/ brown microgranule
Odour	slight metallic
pH	3.9 - 1% Dilution in water (CIPAC Method MT75.3)
Boiling point	decomposes above 200-250°C
Melting point	N/A
Flash point	N/A
Flammability	Mixture is not classed as flammable (EEC A10)
Autoflammability	N/A
Explosivity	Explosive properties are not expected (EEC A14)
Oxidising properties	Oxidising properties are not expected (EEC A17)
Vapour Pressure	N/A
Density	Pour Density – ca. 1.09 g/ml, Tap Density ca.1.19mg/ml (CIPAC 186)
Solubility	contains >50% insoluble material none

##### 9.1 Other information

Other information No information required.

#### 10. Stability and Reactivity

##### 10.1 Reactivity

no data

##### 10.2 Chemical stability

Stable under normal conditions.

##### 10.3 Possibility of hazardous reactions

Reacts with strong alkalis to release ammonia

##### 10.4 Conditions to Avoid:

Store away from heat



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#### 10.5 Incompatible materials:

strong oxidising agents.

#### 10.6 Hazardous Decomposition Products:

Decomposes at high temperatures producing toxic nitrogen and sulphur oxide fumes.

#### 11. Toxicological information

Not classified as harmful by inhalation, ingestion or in contact with skin. Ingestion of large quantities may cause gastric disturbance.

##### Acute toxicity

##### LD/LC50 values that are relevant for classification:

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

Oral LD50 132 - 881 mg Fe/kg (rat) (OECD 423)

Dermal LD50 >400 mg Fe/kg (rat) (OECD 402)

Inhalative LC50 no relevant data available

Data for ferrous sulphate heptahydrate:

Oral LD50 1185 mg/kg (rat)

LD50 >2000 mg/kg (rat) (OECD 401)

Dermal LD50 >1992 mg/kg (rat) derived)

Inhalative LC50 no relevant data available

Primary irritant effect: by calculation

on the skin: not an irritant. on the eye:

not an irritant. Sensitization: not a sensitizer.

##### Subacute to chronic toxicity:

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

Oral NOAEL 57 - 65 mg Fe/kg/d (rat, 90 days) (not according to OECD)

Dermal NOAEL no relevant data available

Inhalative NOAEC no relevant data available

Data for ferrous sulphate heptahydrate

Oral NOAEL 284 - 324 mg/kg/d (rat, 90 days) (derived)

NOAEL 100 mg/kg/d (rat, 49 days)

Dermal NOAEC no relevant data available

Inhalative NOELL 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.

#### 12. Ecological information

##### 12.1. Toxicity

Iron sulphate

Species	Time scale	Endpoint
Rat	Acute	1185mg FeSO <sub>4</sub> ·7H <sub>2</sub> O/kg bw
<i>Colin virginianus</i>	Acute	>1230.75 mg FeSO <sub>4</sub> /kg bw/day
<i>Anas platyrhynchos</i>	Short-term	>683.1 mg FeSO <sub>4</sub> /kg bw/day
<i>Oncorhynchus mykiss</i>	96 hr (flow-through)	45.1 mg FeSO <sub>4</sub> /L
<i>Oncorhynchus mykiss</i>	21 d (semi static)	3.4 mg FeSO <sub>4</sub> /L
<i>Daphnia magna</i>	48-hour (semi-static)	31.2 3.4 mg FeSO <sub>4</sub> /L
<i>Daphnia magna</i>	21d (semi-static)	Less than 1.08 3.4 mg FeSO <sub>4</sub> /L
Earthworm	Acute 14 days	4376 mg FeSO <sub>4</sub> /kg soil > LC50 > 3829 mg FeSO <sub>4</sub> /kg soil



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Endpoints taken from EFSA peer review of Iron Sulphate (2012;10(1)2521)

#### 12.2. Persistence and degradability:

Iron sulphate is an inorganic salt that dissociates in the soil solution to iron- and sulphate-ions. Both iron and sulphate-ions are naturally occurring components of terrestrial ecosystems

#### 12.3. Bioaccumulative potential:

no data

#### 12.4. Mobility in soil:

Iron sulphate - Mobile in soils and readily leached (Kf 2.6 – 21.1) Under typical aerobic environmental conditions (pH 5 – pH 9), the highly soluble Fe (II) salts will be rapidly oxidised to less soluble Fe (III) oxides and hydroxides. Due to the low solubility of the oxide/hydroxide forms, the concentration of dissolved Fe in the soil solution is rather low (< 0.01 - 0.5 mg/L).

#### 12.5. Results of PBT and vPvB:

not classified.

#### 12.6. Other adverse data:

no data

### 13. Disposal considerations

Disposal route should not permit contamination of groundwater.

#### 13.1. Waste treatment methods

Dispose of waste through a reputable waste disposal contractor in accordance with the Environmental Protection Act 1990.

### 14. Transport information

#### 14.1 UN number:

Product is unclassified for transport

#### 14.2 UN proper shipping name:

Product is unclassified for transport

#### 14.3 Transport hazard:

Product is unclassified for transport

#### 14.4 Packing group:

Product is unclassified for transport

#### 14.5 Environmental hazards:

Product is unclassified for transport

#### 14.6 Special precautions for user:

No information available

#### 14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code

Applicable for Maritime bulk transport only. Check with carrier.



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#### 15. Regulatory information

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

This substance is classified and labelled in accordance with EU legislation Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended). 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) (as amended) and the EC Fertiliser Regulations 2003.

##### 15.2 Chemical Safety Assessment

not undertaken for this material

#### 16. Other information

**Hazard statements in full:**  
H302: Harmful if swallowed  
H315: Causes skin irritation  
H319: Causes serious eye irritation

##### Disclaimer

The information in this SDS was obtained from sources which we believe to be reliable. Symbio provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate handling of the product by properly trained and qualified personnel. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose.

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