

## SAFETY DATA SHEET

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### 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

#### 1.1 Product Identifier:

**BULLET**

## Maxwell Liquid Iron

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

Supplied for use as a professional use fertiliser

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

### Maxwell Amenity Ltd

Allscott Park, Allscott, Telford, TF6 5DY  
Tel: 01952 897910  
Fax: 01952 247369  
Web: [www.maxwellamenity.co.uk](http://www.maxwellamenity.co.uk)

#### 1.4 Emergency phone number

Phone number: +44 (0) 1743 860924

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### 2. HAZARDS IDENTIFICATION

#### 2.1 Classification of the substance or mixture

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

Acute Tox. 4: H302 Harmful if swallowed.  
Skin Irrit. 2; H315 Causes skin irritation.  
Eye Irrit. 2; H319 Causes serious eye irritation.

#### Primary Hazard

Harmful if swallowed. Causes skin irritation. Causes serious eye irritation.

#### 2.2 Label Elements

**Maxwell Liquid Iron**  
(contains: Iron sulphate E.C. 231-753-5)



Signal word: Warning

Hazard Statements:

H302 Harmful if swallowed.  
H315 Causes skin irritation.  
H319 Causes serious eye irritation.

### Precautionary Statements

P280 Wear protective gloves/eye protection.  
P301 + P312 IF SWALLOWED: Call a POISON Center or doctor/physician if you feel unwell.  
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.  
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.  
P362 Take off contaminated clothing and wash before reuse.

### 2.3 Other Hazards

Mixture not classed as PBT or vPvB

EUH208 Contains Reaction mass of:





5-chloro-2- methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2H -isothiazol-3- one [EC no. 220-239-6] (3:1) May produce an allergic reaction.


## 3. COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 Product Code: RL292A/B/C

### 3.2 Mixtures

#### 3.3 Hazardous components

Chemical Name	CAS-No./ EINECS-No.	Annex Index or REACH number	Pictogram(s)	H-phrase(s)	Concentrations [%]
Iron sulphate	7720-78-7/ 231-753-5	Index number 026-003-00-7  REACH Number: 01 - 2119513203 – 57	According to 1272/2008: GHS07 	According to 1272/2008: Acute tox. 4, H302 Skin irrit. 2, H315 Eye Irrit. 2, H319	25.0 – 35.0
Reaction mass of: 5-chloro-2- methyl-4- isothiazolin- 3-one [EC no. 247-500- 7] and 2- methyl-2H - isothiazol-3- one [EC no. 220-239-6] (3:1)	55965-84-9/ 611-341-5	Index number: 613-167-00-5	According to 1272/2008: GHS05   GHS06   GHS07   GHS08	According to 1272/2008: Acute Tox. 3 * - H331 Acute Tox. 3 * - H311 Acute Tox. 3 * - H301 Skin Corr. 1B – H314 Skin Sens. 1 – H317 Aquatic Acute 1 – H400 Aquatic Chronic 1 – H410	<0.001

					
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The full hazard information for individual components if not displayed in section 2 or 3 are displayed in Section 16.

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#### 4.0. FIRST AID MEASURES

##### **4.1 Description of first aid measures**

###### **4.1.1 Inhalation**

Remove from source of exposure to fresh air; seek medical attention.

###### **4.1.2 Skin & Eye exposure**

Drench immediately with water. Remove any contaminated clothing and laundry before re-use. Seek medical attention if symptoms persist or develop.

Eyes: Rinse cautiously for several minutes, Remove contact lenses, if present and easy to do, rinse with clean water for 15 minutes. Seek medical attention IMMEDIATELY.

###### **4.1.3 Ingestion**

Do not induce vomiting. Wash out mouth with water and give water to drink. Obtain medical attention IMMEDIATELY.

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

Harmful if swallowed. Causes skin irritation. Causes serious eye irritation. May produce an allergic reaction.

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

Information not available

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#### 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 should be chosen as appropriate for surrounding materials.

##### **5.2 Special Hazards arising from the substance or mixture**

Possible irritant fumes arising from combustion

##### **5.3 Advice for fire-fighters**

Cool down containers/equipment exposed to heat with a water spray. Contain spread of extinguishing fluids (these fluids may be hazardous for the environment). Wear complete protective clothing and self-contained breathing apparatus

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#### 6. ACCIDENTAL RELEASE MEASURES

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

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

Use personal protective equipment  
 -appropriate coveralls and gloves  
 -eye/face protection  
 -appropriate respirator

Avoid contact with skin and eyes

##### **6.2 Environmental Precautions**

Do not allow to enter storm drains or water courses. If this product enters a water course or a sewer (including via contaminated soil & vegetation) contact local water authority and inform the Environment Agency

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

Use soil, sand or other absorbent material. Contact specialist waste disposal contractor.

### 6.4 Reference to other sections

No reference necessary

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## 7. HANDLING AND STORAGE

### 7.1 Precaution for safe handling

Avoid contact with skin and eyes. Wash Hands thoroughly after handling

Do not eat, drink or smoke when using this product. Remove contaminated clothing and protective equipment before entering eating areas.

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

Store in a cool dry atmosphere, in original labelled containers. Refer to manufacturer for maximum safe stacking height. Keep away from heat sources, combustible materials.

### 7.3 Specific end use(s)

No specific information available

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Control Parameters

Workplace exposure Limits as defined by UK HSE in document EH40/2005 where available:

Substance	CAS number	Workplace Exposure Limit				Comments
		Long-term exposure limit (8-hr TWA reference period)		Short-term exposure limit (15 minute reference period)		
		ppm	mg.m <sup>-3</sup>	ppm	mg.m <sup>-3</sup>	
Iron salts (as Fe)	-	-	1.0	-	2.0	The Carc, Sen and Sk notations are not exhaustive. Notations have been applied to the substances identified in IOELV Directives*

\*IOELV – Indicative Occupational Exposure Limit Values (IOELV).

Sk Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.

### 8.2 Exposure controls

Goggles – Eye Protection : goggles/face shield to BS EN166.

Gloves – BS EN374 – chemical protection.

Respirators – BS approved protection device with P3 filter.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

**Appearance;** Brown liquid

**Odour;** Information not specified

**Odour threshold;** Information not specified

**pH;** 3.0 – 5.0

**Melting point/freezing;** Information not specified

**Initial boiling point and boiling range;** Information not specified

**Flash point;** Information not specified

**Evaporation rate;** Information not specified

**Flammability (solid, gas);** Information not specified

**Upper /lower flammability or explosive limits;** Information not specified

**Vapour Pressure;** Information not specified

**Vapour density;** Information not specified

**Specific gravity;** 1.20 – 1.30

**Solubility (ies);** Information not specified

**Partition coefficient: n-octanol/water;** Information not specified

**Auto ignition temperature:** Information not specified

**Decomposition temperature:** Information not specified

## 9.2 Other Information

No other relevant information available

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## 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

Unknown

### 10.2 Chemical Stability

Stable under normal conditions

### 10.3 Possibility of hazardous reactions

Information not available

### 10.4 Conditions to avoid

Extremes of temperature

### 10.5 Incompatible materials

None Known

### 10.6 Hazardous decomposition products

Possible Irritant fumes

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## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

The mixture has not been assessed for toxicological effects, the mixture classification is given in section 2 based on individual component contents. Individual component hazards are given in section 3

#### **Toxicological information on hazardous ingredients:**

##### **Iron sulphate:**

##### **Acute toxicity**

The overall pattern of oral toxicity for iron salts is that they are harmful if swallowed. The human oral lethal dose is approximately 1000 mg/kg and 500-2000 mg/kg in rats. Toxic effects may, however, be produced by much lower doses especially when administered systemically. There is limited evidence that inhaled soluble iron salts are tolerated by rats plus limited evidence that inhaled soluble iron salts do not impair lung function and the dermal lethal dose would be greater than 2000 mg/kg. The dermal limit dose of Ferrous Chloride in rats is greater than 2,000 mg/kg (>881 mg Fe/kg) and thus should be used to compare against Ferrous Sulphate. This suggests little potential for systemic toxicity in humans after dermal contact.

Dose descriptor: Oral - LD50S 300-2000 mg/kg bw

Dermal - LD50S >2000 mg/kg bw

Inhalation-No data

### **Skin corrosion / irritation**

Ferrous Sulphate is skin irritant based on (2:1 animals majority) in rabbit test and is an eye irritant. Read across from Ferrous Sulphate and Ferric Chloride, indicates that solutions have the same or a lower classification than the solid and that classification based on pH would be overly cautious. On this basis an irritant classification, Skin Irritation Cat 2. H315: Causes skin irritation should be applied to solutions based on rules for mixtures. This classification therefore applies for solutions of concentration > 10%. Ferrous Sulphate should not be seen as corrosive just as an irritant.

### **Eye damage / irritation**

Results are available for a GLP-compliant guideline study (Johnson, 2003), which showed that a 25% solution of Ferrous Sulphate Heptahydrate caused no more than mild redness and chemosis after instillation into the rabbit eye. The predicted classification based on reading across of several iron salts would be a classification between no classification and causes serious eye damage however due to the lack of test data and low pH (<2) a precautionary approach should be taken with classification as Eye Damage2.

### **Respiratory / Skin sensitisation**

Ferrous Sulphate Heptahydrate has been tested in a guideline, GLP, Local Lymph Node Assay (Stitzinger, 2010: reliability 1). In this test Ferrous Sulphate gave a clear negative result and is therefore not considered a skin sensitiser. Results of a reliable LLNA test were clearly negative for Ferrous Sulphate Heptahydrate. There are a few case studies in which human subjects showed signs of sensitisation to iron; however overall these data are poor and do not provide convincing evidence of a positive reaction in humans. There is also poor evidence in animal studies of sensitisation as a result of exposure to iron. The widespread exposure of iron and its role in biological processes, together with the extensive use of dietary supplements suggest that sensitisation is not a concern.

### **Germ cell mutagenicity**

With regard to their mutagenic properties, iron salts have been extensively tested in microbial and mammalian systems in vitro, and in mammalian and insect tests in vivo. There are inconsistencies in the in vitro findings, with a small number of studies returning positive results. This has been attributed to DNA damage following reduction of Fe(III) to Fe(II) with free radical or superoxide formation and subsequent redox recycling. This contrasts with the consistently negative results obtained in vivo where, presumably, more efficient control mechanisms exist that protect the body from iron-induced oxidative damage. It is concluded that iron salts are not genotoxic.

Due to its potential pro-oxidant effects, there has been extensive research into possible links between iron and cancer development. These include many clinical investigations into the effects of oral (dietary) iron salts in humans and links to cancer. Although iron has been implicated in the development of cancers at various sites because of its role as a pro-oxidant, the UK Scientific Advisory Committee on Nutrition concluded that there is not enough evidence to reach conclusions for any specific links (EVM, 2003).

### **Reproductive toxicity**

Results from recent guideline oral screening studies performed on Ferrous Chloride and Ferrous Sulphate gave NOAELs for reproductive and developmental effects of >500 mg/kg body weight/day or >1000 mg/kg body weight/day (no adverse effects were observed), respectively. These findings are considered to be relevant to Ferric as well as Ferrous salts, as oxidation of Ferrous to Ferric occurs in the low pH of stomach before ingested iron is absorbed into the body. In humans, iron supplementation of about 5.8 to 11.7 mg/kg bw/day (for a 60kg individual) is routinely prescribed throughout pregnancy with no adverse effects on pregnancy outcome. Evidence of adverse effects on male testes has only been observed at acutely toxic, overload doses, at which some of the experimental animals died.

Dose descriptor: Oral - LD50 >1000 mg/kg bw day

Dermal - No data

Inhalation - No data

### **Repeated dose toxicity**

No human data is available for Ferrous Sulphate and repeated dose toxicity and even though effects are shown in some animal studies the overall conclusion is that no classification should be assigned for all endpoints oral, inhalation and dermal. NOAEL 49 days -100mg/kg Ferrous Sulphate Heptahydrate, result = no effect.

### **Aspiration hazard**

No data, not an aspiration hazard.

**reaction mass of:**

**5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1)**

Oral LD50: 67 mg/Kg (rat)

Dermal LD50: >140 mg/Kg (rat)

Inhalation LC50/4hr 0.17 mg/l (rat) Aerosol THR 48/971458

Primary irritant effect:

On the skin: Caustic effect on skin and mucous membranes

On the eye: Strong caustic effect

Sensitization: Sensitization possible by skin contact

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12. ECOLOGICAL INFORMATION

**12.1 Toxicity**

**Mixture not Classified as harmful to aquatic life**

**2.2 Persistence and degradability**

Readily biodegradable

**12.3 Bioaccumulative potential**

Information not available

**12.4 Mobility in soil**

Information not available

**12.5 Results of PBT and vPvB**

Not classified

**12.6 Other adverse effects**

Information not available

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13. DISPOSAL CONSIDERATIONS

**13.1 Waste Treatment Methods**

Use only licensed waste disposal companies. Do not re-use empty containers for any purpose.

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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:** Not specified

**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 regulation 1272/2008, 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**

CSA not undertaken for this substance

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16. OTHER INFORMATION

**Reasons for revision:**

Updated in line with Regulation 1272/2008 and Regulation 1907/2006.

**Hazard Information not otherwise listed in full elsewhere:**

H301:	Toxic if swallowed
H311:	Toxic in contact with skin.
H314:	Causes severe skin burns and eye damage
H317:	May cause an allergic skin reaction.
H331:	Toxic if swallowed or if inhaled
H400:	Toxic to aquatic life.
H410:	Very toxic to aquatic life with long lasting effects.

**SDS information:**

This safety data sheet is compiled using data submitted for raw materials and practical experience. This product is intended for professional users only.

This Safety Data Sheet is prepared in compliance with Directive 1999/45/EC, 1272/2008 and Annex I of the REACH regulation 453/2010.

THE INFORMATION GIVEN HEREIN IS, TO THE BEST OF OUR KNOWLEDGE, CORRECT AND IS PRESENTED IN GOOD FAITH BUT NO WARRANTY, EXPRESSED OR IMPLIED IS GIVEN.

PRINTED : 29 MARCH 2016