

Fusion

Liquid Fe

Material Safety Data Sheet

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

1.1 Product Identifier Fusion Liquid Fe

1.2. Relevant identified uses of the substance or mixture and uses advised against
Relevant uses: Use as a professional use fertiliser.

1.3. Details of the supplier of the safety data sheet

Company: Indigrow Ltd, The Old Bakery, Hyde End Lane, Brimpton, Berkshire, RG7 4RH. UK.
Phone: +44 (0) 1189 710 995
Email: growth@indigrow.com

1.4. Emergency telephone number +44 (0) 7725 962 366

SECTION 2: Hazards Identification

2.1. Classification of the substance or mixture

Directive 67/548/EC and Directive 1999/45/EC:

This product was classified in accordance with Directive 67/548/EC and Directive 1999/45/EC, adapting the requirements to Regulation (EC) n°1907/2006 (REACH regulation).

Xi: R36/38 - Irritating to eyes and skin

Xn: R22 - Harmful if swallowed

CLP Regulation (EC) n° 1272/2008:

Classification of this product has been carried out in accordance with CLP Regulation (EC) n° 1272/2008.

Acute Tox. 4: Acute toxicity if swallowed, Category 4

Eye Irrit. 2: Eye irritation, Category 2

Skin Irrit. 2: Skin irritation, Category 2

2.2. Label elements

CLP Regulation (EC) n° 1272/2008:

Warning



Hazard Statements:

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

Precautionary Statements

P264: Wash thoroughly after use
P280: Wear protective gloves/protective clothing/eye protection/face 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
P321: Specific treatment is urgently needed (go to see a doctor with the Safety data sheet for this product)
P362: Take off contaminated clothing and wash before reuse
P501: Dispose of the contents/containers in accordance with the current legislation on waste treatment

Substances that contribute to the classification:

Ferrous sulfate heptahydrate

2.3. Other hazards

Mixture not classed as PBT or vPvB.

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SECTION 3: Composition/Information on Ingredients

Chemical description: Miscellaneous products

Components: In accordance with Annex II of Regulation (EC) n°1907/2006 (point 3), the product contains:

Identification	Chemical Name/Classification		Concentration
CAS: 7782-63-0 EC: 231-753-5 Index: Non-applicable REACH: 01-2119513203-57-XXXX	Ferrous Sulfate Heptahydrate (Self-classified)		25-<50%
	Directive 67/548/EC	Xi: R36/38; Xn: R22 	
	Regulation 1272/2008	Acute Tox. 4: H302; Eye Irrit. 2: H319; Skin Irrit. 2: H315 - Warning 	
CAS: 7664-93-9 EC: 231-639-5 Index: 016-020-00-8 REACH: 01-2119458838-20-XXXX	Sulphuric Acid (ATP CLP00)		1-<2.5%
	Directive 67/548/EC	C: R35 	
	Regulation 1272/2008	Skin Corr. 1A: H314 - Danger 	
CAS: 119345-04-9 EC: Non-applicable Index: Non-applicable REACH: Non-applicable	Sodium dodecyl diphenyl ether disulfonate (Self-classified)		<1%
	Directive 67/548/EC	N: R51/53; Xi: R36  	
	Regulation 1272/2008	Aquatic Chronic 2: H411; Eye Irrit. 2: H319 - Warning  	

To obtain more information on the risk of the substances consult sections 8, 11, 12 and 16.

SECTION 4: First-Aid Measures

4.1. Description of first aid measures

The symptoms resulting from intoxication can appear after exposure, therefore, in case of doubt, seek medical attention for direct exposure to the chemical product or persistent discomfort, showing the MSDS of this product.

By inhalation:	This product does not contain substances classified as dangerous for inhalation, however, in case of symptoms of intoxication remove the person affected from the exposure area and provide with fresh air. Seek medical attention if the symptoms get worse or persist.
By skin contact:	Remove contaminated clothing and footwear, rinse skin or shower the person affected if appropriate with plenty of cold water and neutral soap. In serious cases see a doctor. If the product causes burns or freezing, clothing should not be removed as this could worsen the injury caused if it is stuck to the skin. If blisters form on the skin, these should never be burst as this will increase the risk of infection.
By eye contact:	Rinse eyes thoroughly with luke warm water for at least 15 minutes. Do not allow the person affected to rub or close their eyes. If the injured person uses contact lenses, these should be removed unless they are stuck to the eyes, as this could cause further damage. In all cases, after cleaning, a doctor should be consulted as quickly as possible with the MSDS of the product.
By consumption:	Do not induce vomiting, but if it does happen keep the head up to avoid inhalation. Keep the person affected at rest. Rinse out the mouth and throat, as they may have been affected during ingestion.

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

Acute and delayed effects are indicated in sections 2 and 11.

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

Information not available.



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SECTION 5: Fire-Fighting Measures

5.1. Extinguishing media

Product is non-flammable under normal conditions of storage, manipulation and use. In the case of inflammation as a result of improper manipulation, storage or use preferably use polyvalent powder extinguishers (ABC powder), in accordance with the Regulation on fire protection systems. IT IS NOT RECOMMENDED to use tap water as an extinguishing agent.

5.2. Special hazards arising from the substance or mixture

As a result of combustion or thermal decomposition reactive subproducts are created that can become highly toxic and, consequently, can present a serious health risk.

5.3. Advice for fire-fighters

Depending on the magnitude of the fire it may be necessary to use full protective clothing and individual respiratory equipment. Minimum emergency facilities and equipment should be available (fire blankets, portable first aid kit,...) in accordance with Directive 89/654/EC.

Additional Provisions:

Act in accordance with the Internal Emergency Plan and the Information Sheets on actions to take after an accident or other emergencies. Destroy any source of ignition. In case of fire, refrigerate the storage containers and tanks for products susceptible to inflammation, explosion or BLEVE as a result of high temperatures. Avoid spillage of the products used to extinguish the fire into an aqueous medium.

SECTION 6: Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Isolate leaks provided that there is no additional risk for the people performing this task. Personal protection equipment must be used against potential contact with the spilt product (See section 8). Evacuate the area and keep out those who do not have protection.

6.2. Environmental precautions

Avoid spillage into an aqueous medium as it contains substances potentially dangerous for this. Contain the product absorbed in hermetically sealed containers. In the case of serious spillage into an aqueous medium notify the relevant authority.

6.3. Methods and material for containment and cleaning up

Absorb the spillage using sand or inert absorbent and move it to a safe place. Do not absorb in sawdust or other combustible absorbents. For any concern related to disposal consult section 13.

6.4. Reference to other sections

See sections 8 and 13.

SECTION 7: Handling and Storage

7.1. Precautions for safe handling

Precautions for safe manipulation:

Comply with the current legislation concerning the prevention of industrial risks. Keep containers hermetically sealed. Control spills and residues, destroying them with safe methods (section 6). Avoid leakages from the container. Maintain order and cleanliness where dangerous products are used.

Technical recommendations for the prevention of fires and explosions:

Product is non-flammable under normal conditions of storage, manipulation and use. It is recommended to transfer at slow speeds to avoid the generation of electrostatic charges that can affect flammable products. Consult section 10 for information on conditions and materials that should be avoided.



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Technical recommendations to prevent ergonomic and toxicological risks:
Do not eat or drink during the process, washing hands afterwards with suitable cleaning products.

Technical recommendations to prevent environmental risks:
It is recommended to have absorbent material available at close proximity to the product (See subsection 6.3).

7.2. Conditions for safe storage, including any incompatibilities

Technical measures for storage: Minimum Temp: 0°C
Maximum Temp: 40°C
Maximum Time: 36 Months

General conditions for storage: Avoid sources of heat, radiation, static electricity and contact with food. For additional information see subsection 10.5.

7.3. Specific end use(s)

Except for the instructions already specified it is not necessary to provide any special recommendation regarding the uses of this product.

SECTION 8: Exposure Controls/Personal Protection

8.1. Control parameters

Substances whose occupational exposure limits have to be monitored in the work environment

Identification	Environmental Limits	
Sulphuric Acid CAS: 7664-93-9 EC: 231-639-5	IOELV (8 h)	0.05 mg/m ³
	IOELV (STEL)	-
	Year	2014

DNEL (Workers):

Identification		Short Exposure		Long Exposure	
		Systemic	Local	Systemic	Local
Sulphuric Acid CAS: 7664-93-9 EC: 231-639-5	Oral	Non-applicable	Non-applicable	Non-applicable	Non-applicable
	Dermal	Non-applicable	Non-applicable	Non-applicable	Non-applicable
	Inhalation	Non-applicable	0.1 mg/m ³	Non-applicable	0.5 mg/m ³

DNEL (Population): Non-applicable

PNEC:

Identification				
Sulphuric Acid CAS: 7664-93-9 EC: 231-639-5	STP	8.8 mg/l	Fresh Water	0.0025 mg/l
	Soil	Non-applicable	Marine Water	0.0025 mg/l
	Intermittent	Non-applicable	Sediment (Fresh Water)	0.002 mg/kg
	Oral	Non-applicable	Sediment (Marine Water)	0.002 mg/kg



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8.2. Exposure controls

General security and hygiene measures in the work place:

As a preventative measure it is recommended to use basic Personal Protection Equipment, with the corresponding "CE marking" in accordance with Directive 89/686/EC. For more information on Personal Protection Equipment (storage, use, cleaning, maintenance, class of protection,...) consult the information leaflet provided by the manufacturer. For more information see subsection 7.1. All information contained herein is a recommendation which needs some specification from the labour risk prevention services as it is not known whether the company has additional measures at its disposal.

Respiratory Protection:	LRP Pictogram:	Compulsory use of face mask
	PPE:	Filter mask for particles
	Labelling:	CE CAT III
	CEN Standard:	EN 149:2001+A1:2009
	Remarks:	Replace when an increase in resistance to breathing is observed.
Specific protection for the hands:	LRP Pictogram:	Mandatory hand protection
	PPE:	Chemical protective gloves
	Labelling:	CE CAT I
	CEN Standard:	EN 374-1:2003; EN 374-3:2003/AC:2006; EN 420:2003+A1:2009
	Remarks:	Replace the gloves at any sign of deterioration.
Ocular and facial protection:	LRP Pictogram:	Mandatory face protection
	PPE:	Panoramic glasses against liquid splash
	Labelling:	CE CAT II
	CEN Standard:	EN 166:2001; EN 172:1994/A1:2000; EN 172:1994/A2:2001; EN 165:2005
	Remarks:	Clean daily and disinfect periodically according to the manufacturer's instructions. Use if there is a risk of splashing.
Bodily protection:	PPE:	Work clothing
	Labelling:	CE CAT I
	CEN Standard:	EN ISO 13688:2013
	Remarks:	For professional use only.
	PPE:	Anti-slip work shoes
	Labelling:	CE CAT II
	CEN Standard:	EN ISO 20347:2012; EN ISO 20344:2011
	Remarks:	None.
Additional emergency measures:	Emergency Shower:	ANSI Z358-1; ISO 3864-1:2002
	Eyewash stations:	DIN 12 899; ISO 3864-1:2002

Environmental exposure controls:

In accordance with the community legislation for the protection of the environment it is recommended to avoid environmental spillage of both the product and its container. For additional information see subsection 7.1.D.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Physical state at 20 °C:	Liquid
Appearance:	Characteristic
Color:	Red
Odor:	Characteristic
Density at 20 °C:	1300 - 1320 kg/m ³ (ISO 649-2)
Relative density at 20 °C:	1.302 - 1.322
pH:	2 - 3 to 100% (ASTM D3838-05)
Solubility property:	Miscible
Flash Point:	Non Flammable (>60 °C)

9.2. Other information

No other relevant information available.



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SECTION 10: Stability and Reactivity

10.1. Reactivity

No hazardous reactions are expected if the following technical instructions storage of chemicals. See section 7.

10.2. Chemical stability

Chemically stable under the conditions of storage, handling and use.

10.3. Possibility of hazardous reactions

Under the specified conditions, hazardous reactions that lead to excessive temperatures or pressure are not expected.

10.4. Conditions to avoid

Applicable for handling and storage at room temperature:

Shock and friction:	Not applicable
Contact with air:	Not applicable
Increase in temperature:	Not applicable
Sunlight:	Not applicable
Humidity:	Not applicable

10.5. Incompatible materials

Acids:	Not applicable
Water:	Not applicable
Combustive materials:	Not applicable
Combustible materials:	Not applicable
Others:	Not applicable

10.6. Hazardous decomposition products

See subsection 10.3, 10.4 and 10.5 to find out the specific decomposition products. Depending on the decomposition conditions, complex mixtures of chemical substances can be released: carbon dioxide (CO₂), carbon monoxide and other organic compounds.

SECTION 11: Toxicological Information

11.1. Information on toxicological effects

No experimental information is available on the product itself in relation to the toxicological properties. When performing the danger classification on corrosive or irritant effects the recommendations included in section 3.2.5 of Annex VI of Directive 67/548/EC, in paragraphs b) and c) of section 3 of article 6 of Directive 1999/45/EC and in section 3.2.3.3.5. of Annex I of CLP Regulation were taken into account.

Dangerous health implications:

In case of exposure that is repetitive, prolonged or at concentrations higher than recommended by the occupational exposure limits, it may result in adverse effects on health depending on the means of exposure:

Ingestion:	The consumption of a considerable dose can cause irritation in the throat, abdominal pain, nausea and vomiting.
Inhalation:	Based on available data, the classification criteria are not met
Contact with the skin and the eyes:	Produces skin inflammation.
CMR effects (carcinogenicity, mutagenicity and toxicity to reproduction):	Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for the effects mentioned. For more information see section 3.
Sensitizing effects:	Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous with sensitizing effects. For more information see section 3.



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Specific target organ toxicity (STOT)-time exposure: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

Specific target organ toxicity (STOT)-repeated exposure: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

Aspiration hazard: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

Other information: Non-applicable

Specific toxicology information on the substances:

Identification	Acute Toxicity		Genus
Ferrous Sulfate Heptahydrate CAS: 7782-63-0 EC: 231-753-5	LD50 oral	500 mg/kg (ATEi)	
	LD50 dermal	Non-applicable	
	LC50 inhalation	Non-applicable	
Sulphuric Acid CAS: 7664-93-9 EC:231-639-5	LD50 oral	2140 mg/kg	Rat
	LD50 dermal	Non-applicable	
	LC50 inhalation	510 mg/l (4 h)	Rat

SECTION 12: Ecological Information

12.1. Toxicity

Identification	Acute Toxicity		Specie	Genus
Sodium dodecyl diphenyl ether disulfonate CAS: 119345-04-9 EC: Non-applicable	LC50	1 - 10 mg/l (96 h)		Fish
	EC50	1 - 10 mg/l		Crustacean
	EC50	1 - 10 mg/l		Alga

12.2. Persistence and degradability

Information not available

12.3. Bioaccumulative potential

Information not available

12.4. Mobility in soil

Information not available

12.5. Results of PBT and vPvB assessment

Not classified

12.6. Other adverse effects

Not described



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SECTION 13: Disposal Considerations

13.1. Waste treatment methods

Code	Description	Waste Class (Directive 2008/98/EC)
	It is not possible to assign a specific code, as it depends on the intended use by the user	Dangerous

Waste management (disposal and evaluation):

Consult the authorized waste service manager on the assessment and disposal operations in accordance with Annex 1 and Annex 2 (Directive 2008/98/EC). As under 15 01 (2000/532/EC) of the code and in case the container has been in direct contact with the product, it will be processed the same way as the actual product. Otherwise, it will be processed as non-dangerous residue. We do not recommended disposal down the drain. See paragraph 6.2.

Regulations related to waste management:

In accordance with Annex II of Regulation (EC) n°1907/2006 (REACH) the community or state provisions related to waste management are stated

Community legislation: Directive 2008/98/EC, 2000/532/EC: Commission Decision of 3 May 2000

SECTION 14: Transport Information

This product is not regulated for transport (ADR/RID,IMDG,IATA)

SECTION 15: Regulatory Information

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

Candidate substances for authorisation under the Regulation (EC) 1907/2006 (REACH): Non-applicable

Regulation (EC) 1005/2009, about substances that deplete the ozone layer: Non-applicable

Active substances for which a decision of non-inclusion onto Annex I (Regulation (EU) No 528/2012): Non-applicable

Regulation (EC) 649/2012, in relation to the import and export of hazardous chemical products: Non-applicable

Limitations to commercialisation and the use of certain dangerous substances and mixtures (Annex XVII, REACH): Non-applicable

Specific provisions in terms of protecting people or the environment:

It is recommended to use the information included in this safety data sheet as data used in a risk evaluation of the local circumstances in order to establish the necessary risk prevention measures for the manipulation, use, storage and disposal of this product.

15.2. Chemical Safety Assessment

The supplier has not carried out evaluation of chemical safety.

16. OTHER INFORMATION

The information contained herein relates only to the designated formulation and may not be valid if product is used in combination with other substances. The information is to the best of our knowledge, belief and understanding, true, accurate and reliable at the date of issue. However, the information may neither be exhaustive or complete, and no warranty, guarantee or liability concerning the accuracy or completeness of the information is expressed or implied. It is the user's risk and sole responsibility to verify and satisfy their own criteria and duty of care concerning the validity of the information in relation to their application of the product.