

SAFETY DATA SHEET

Ferric sulphate solution 11% - 14%

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

1.1. Product identifier

Trade name

Ferric sulphate solution 11% - 14%

Other names / Synonyms

Iron (III) sulfate solution - REACH registered as the pure (dry) substance

Unique formula identifier (UFI)

MMPO-V0MJ-2008-RRKC

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

Relevant identified uses of the substance or mixture

Treatment of drinking water, European Committee Approval , Laboratory use, Treatment of waste water, Fertiliser ingredient, Adhesive, Catalyst support material, Use of iron salts as precursors to pigments and other iron compounds Intermediate
Restricted to professional users.

Uses advised against

None known.

1.3. Details of the supplier of the safety data sheet

Company and address

Industrial Chemicals Limited

Jupiter House,
Warley Hill Business Park,
The Drive,
Warley,
Brentwood,
Essex,
CM13 3BE
United Kingdom
+44 (0)1375 389000
+44 (0)1375 389110
www.icgl.co.uk

Only representative

Reach Monitor

Orient 78-84, 5^o, 2^a. 08172 Sant Cugat del Vallès.
Barcelona
Spain

E-mail

sds@icgl.co.uk

Revision

15/02/2024

SDS Version

7.0

Date of previous version

08/02/2024 (7.0)

1.4. Emergency telephone number

Contact The National Poisons Information Service (dial 111, 24 h service).
See section 4 "First aid measures".

SECTION 2: Hazards identification

Classified according to Regulation (EC) No. 1272/2008 (CLP) as retained and amended in UK law.

2.1. Classification of the substance or mixture

Met. Corr. 1; H290, May be corrosive to metals.
 Acute Tox. 4; H302, Harmful if swallowed.
 Skin Irrit. 2; H315, Causes skin irritation.
 Eye Dam. 1; H318, Causes serious eye damage.

2.2. Label elements

Hazard pictogram(s)



Signal word

Danger

Hazard statement(s)

May be corrosive to metals. (H290)
 Harmful if swallowed. (H302)
 Causes skin irritation. (H315)
 Causes serious eye damage. (H318)

Precautionary statement(s)

General

-

Prevention

Wash hands and exposed skin thoroughly after handling. (P264)
 Wear face protection/protective gloves/protective clothing. (P280)

Response

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
 Continue rinsing. (P305+P351+P338)
 Absorb spillage to prevent material damage. (P390)

Storage

Store in a container with a resistant inner liner. (P406)

Disposal

Dispose of contents/container in accordance with local regulation (P501)

Hazardous substances

Diiron tris(sulphate)

Additional labelling

UFI: MMP0-V0MJ-2008-RRKC

2.3. Other hazards

Additional warnings

This mixture/product does not contain any substances known to fulfil the criteria for PBT and vPvB classification.
 This product does not contain any substances considered to be endocrine disruptors in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605.

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable. This product is a mixture.

3.2. Mixtures

Product/substance	Identifiers	% w/w	Classification	Note
Diiron tris(sulphate)	CAS No.: 10028-22-5 EC No.: 233-072-9 UK-REACH: 01-1016512107-9-0002 Index No.:	30-60%	Met. Corr. 1, H290 Acute Tox. 4, H302 Skin Irrit. 2, H315 Eye Dam. 1, H318	
Water	CAS No.: 7732-18-5 EC No.: 231-791-2 UK-REACH: Index No.:	10-40%		

See full text of H-phrases in section 16. Occupational exposure limits are listed in section 8, if these are available.

Other information

-

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

In the case of accident: Contact a doctor or casualty department – take the label or this safety data sheet. Contact a doctor if in doubt about the injured person's condition or if the symptoms persist. Never give an unconscious person water or other drink.

Inhalation

Upon breathing difficulties or irritation of the respiratory tract: Bring the person into fresh air and stay with him/her.

Skin contact

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

Remove contaminated clothing and shoes. Ensure to wash exposed skin thoroughly with water and soap. DO NOT use solvents or thinners.

If skin irritation occurs: Get medical advice/attention.

Eye contact

If in eyes: Flush eyes with plenty of water or salt water (20-30 °C) for at least 30 minutes and continue until irritation stops. Remove contact lenses. Make sure you flush under the upper and lower eyelids. Seek medical assistance immediately and continue flushing during transport.

Ingestion

IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.

Burns

Not applicable.

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

The product contains substances that cause serious eye damage. Contact with these substances can cause irreversible effects on the eye / serious eye damage.

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

IF exposed or concerned:

Get immediate medical advice/attention.

Information to medics

Bring this safety data sheet or the label from this product.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media: Alcohol-resistant foam, carbon dioxide, powder, water mist.

Unsuitable extinguishing media: Waterjets should not be used, since they can spread the fire.

5.2. Special hazards arising from the substance or mixture

Fire will result in dense smoke. Exposure to combustion products may harm your health. Closed containers, which are exposed to fire, should be cooled with water. Do not allow fire-extinguishing water to enter the sewage system and nearby surface waters.

If the product is exposed to high temperatures, e.g. in the event of fire, dangerous decomposition compounds are produced. These are:

Sulphur oxides

Some metal oxides

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective clothing to prevent contact. Upon direct exposure contact The National Poisons Information Service (dial 111, 24 h service) in order to obtain further advice.

Hazchem Code: 2X

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Avoid direct contact with spilled substances.

Ensure adequate ventilation, especially in confined areas.

Contaminated areas may be slippery.

6.2. Environmental precautions

Avoid discharge to lakes, streams, sewers, etc.
Keep unauthorized persons away from the spill

6.3. Methods and material for containment and cleaning up

Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations.

Wherever possible cleaning should be performed with normal cleaning agents. Avoid use of solvents.

6.4. Reference to other sections

See section 13 "Disposal considerations" on handling of waste.

See section 8 "Exposure controls/personal protection" for protective measures.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Avoid direct contact with the product.

Smoking, drinking and consumption of food is not allowed in the work area.

See section 8 "Exposure controls/personal protection" for information on personal protection.

7.2. ▼ Conditions for safe storage, including any incompatibilities

Containers that have been opened must be carefully resealed and kept upright to prevent leakage.

Store in a container with a resistant inner liner.

Recommended storage material

Storage tanks and day tanks must be vented to the outside atmosphere, using suitable piping so all containers must have a venting device suitable for substances of low pH

▼ Storage temperature

Avoid contact with oxidising agents. Ensure adequate ventilation to avoid build up of NO_x gasses Storage tanks and day tanks must be vented to the outside atmosphere, using suitable piping. Store away from the following materials: Store in vessels suitable for substances of low pH. Store away from the following materials: Alkalis.

Avoid contact with metals (except 316 and 304 stainless steel).

N.B. Product produced by oxidation of ferrous sulfate with nitric acid. Some small quantities of residual nitrogen oxides may be given off (clearly visible reddish brown, and acrid odour) O: Oxidising, T+: very toxic, C: corrosive.

Not believed to be carcinogenic or mutagenic. Do not store near sources of heat If diluted to <~1% in water, ferric hydroxide is formed and flocculates out. In the event of release to the aquatic environment, this process counteracts the potential hazards of the substance, and does not add significantly to the ubiquitous iron in the environment. Dilution to < ~ 1% results in ferric hydroxide formation In contact with some metals can generate hydrogen gas, which can form explosive mixtures with air.

Dry, cool and well ventilated

Some sedimentation can occur in this product. Even after filtering, slow sedimentation will occur. To avoid problems caused by this sedimentation, storage tanks should be cleaned every 1 to 2 years.

Incompatible materials

Alkali

Strong oxidizing agents

Powdered Metal

Metal

7.3. Specific end use(s)

This product should only be used for applications quoted in section 1.2.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Diiron tris(sulphate)

Long term exposure limit (8 hours) (ppm): 2

Long term exposure limit (8 hours) (mg/m³): 1

The Control of Substances Hazardous to Health Regulations 2002. SI 2002/2677 The Stationery Office 2002. EH40/2005 Workplace exposure limits (Fourth Edition 2020).

DNEL

No data available.

PNEC

No data available.

8.2. Exposure controls

Compliance with the given occupational exposure limits values should be controlled on a regular basis.

General recommendations

Smoking, drinking and consumption of food is not allowed in the work area.

Exposure scenarios

There are no exposure scenarios implemented for this product.

Exposure limits

Professional users are subjected to the legally set maximum concentrations for occupational exposure. See occupational hygiene limit values above.

Appropriate technical measures

The formation of vapours must be kept at a minimum and below current limit values (see above). Installation of a local exhaust system if normal air flow in the work room is not sufficient is recommended. Ensure eyewash and emergency showers are clearly marked.

Ensure that eyewash stations and safety showers are located within easy reach.

Apply standard precautions during use of the product. Avoid inhalation of vapours.

Hygiene measures

Take off contaminated clothing and wash it before reuse.

Measures to avoid environmental exposure

No specific requirements.

Individual protection measures, such as personal protective equipment

Generally

Use only UKCA marked protective equipment.

Respiratory Equipment

Type	Class	Colour	Standards
------	-------	--------	-----------

Skin protection

Recommended	Type/Category	Standards
-------------	---------------	-----------

Plastic apron, sleeves, boots - if handling large quantities, full body suit.

Hand protection

Material	Glove thickness (mm)	Breakthrough time (min.)	Standards
----------	----------------------	--------------------------	-----------

Vinyl/PVC	-	> 120	EN374-3, EN388
-----------	---	-------	----------------



Latex	0.08	-	-
-------	------	---	---



Eye protection

Type	Standards
------	-----------

Face shield	EN166
-------------	-------



Chemical splash goggles

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state

Liquid

Colour

Brown

Odour / Odour threshold

Testing not relevant or not possible due to the nature of the product.

pH

0.5-1.0

Density (g/cm³)

-

Relative density

1.45 - 1.65 (20 °C)

Kinematic viscosity

45 cP @ 20°C 90 cP at 5°C

Particle characteristics

Does not apply to liquids.

Phase changes

Melting point/Freezing point (°C)

< -20

Softening point/range (waxes and pastes) (°C)

Does not apply to liquids.

Boiling point (°C)

120

Vapour pressure

Testing not relevant or not possible due to the nature of the product.

Relative vapour density

1.04 (nitric oxide) & 1.58 (nitrogen dioxide)

Decomposition temperature (°C)

Testing not relevant or not possible due to the nature of the product.

Data on fire and explosion hazards

Flash point (°C)

Testing not relevant or not possible due to the nature of the product.

Flammability (°C)

Testing not relevant or not possible due to the nature of the product.

Auto-ignition temperature (°C)

Testing not relevant or not possible due to the nature of the product.

Lower and upper explosion limit (% v/v)

Testing not relevant or not possible due to the nature of the product.

Solubility

Solubility in water

(Of nitric oxide) 46ml/l at 20°C (62g/ton of water)

n-octanol/water coefficient (LogKow)

Testing not relevant or not possible due to the nature of the product.

Solubility in fat (g/L)

Testing not relevant or not possible due to the nature of the product.

9.2. Other information

Sensitivity to shock

N.B. Product produced by oxidation of ferrous sulfate with nitric acid. Some small quantities of residual nitrogen oxides may be given off (clearly visible reddish brown, and acrid odour) O: Oxidising, T+: very toxic, C: corrosive. Not believed to be carcinogenic or mutagenic

Thermal stability

Do not store near sources of heat If diluted to <~1% in water, ferric hydroxide is formed and flocculates out. In the event of release to the aquatic environment, this process counteracts the potential hazards of the substance, and does not add significantly to the ubiquitous iron in the environment

Oxidizing properties

Testing not relevant or not possible due to the nature of the product.

Other physical and chemical parameters

Avoid Dilution to < ~ 1% results in ferric hydroxide formation In contact with some metals can generate hydrogen gas, which can form explosive mixtures with air.

SECTION 10: Stability and reactivity

10.1. Reactivity

No data available.

10.2. Chemical stability

The product is stable under the conditions, noted in section 7 "Handling and storage".

10.3. Possibility of hazardous reactions

None known.

10.4. Conditions to avoid

None known.

10.5. Incompatible materials

Alkali

Strong oxidizing agents

Powdered Metal

Metal

10.6. Hazardous decomposition products

The product is not degraded when used as specified in section 1.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008 as retained and amended in UK law

Acute toxicity

Harmful if swallowed.

Skin corrosion/irritation

Causes skin irritation.

Serious eye damage/irritation

Causes serious eye damage.

Respiratory sensitisation

Based on available data, the classification criteria are not met.

Skin sensitisation

Based on available data, the classification criteria are not met.

Germ cell mutagenicity

Based on available data, the classification criteria are not met.

Carcinogenicity

Based on available data, the classification criteria are not met.

Reproductive toxicity

Based on available data, the classification criteria are not met.

STOT-single exposure

Based on available data, the classification criteria are not met.

STOT-repeated exposure

Based on available data, the classification criteria are not met.

Aspiration hazard

Based on available data, the classification criteria are not met.

11.2. Information on other hazards

Long term effects

The product contains substances that cause serious eye damage. Contact with these substances can cause irreversible effects on the eye / serious eye damage.

Endocrine disrupting properties

This mixture/product does not contain any substances known to have hormone-disrupting properties in relation to health.

Other information

None known.

SECTION 12: Ecological information

12.1. Toxicity

No data available.

12.2. Persistence and degradability

Based on available data, the classification criteria are not met.

12.3. Bioaccumulative potential

Based on available data, the classification criteria are not met.

12.4. Mobility in soil

No data available.

12.5. Results of PBT and vPvB assessment

This mixture/product does not contain any substances known to fulfil the criteria for PBT and vPvB classification.

12.6. Endocrine disrupting properties

This mixture/product does not contain any substances considered to have endocrine-disrupting properties in relation to the environment.

12.7. Other adverse effects

None known.

SECTION 13: Disposal considerations

Waste treatment methods

Product is covered by the regulations on hazardous waste.

HP 4 - Irritant (skin irritation and eye damage)

HP 6 - Acute toxicity

Dispose of contents/container to an approved waste disposal plant.

Regulation (EU) No 1357/2014 of 18 December 2014 on waste as retained and amended in UK law.

EWC code




Not applicable.

Specific labelling

Contaminated packing

Packaging containing residues of the product must be disposed of similarly to the product.

SECTION 14: Transport information

	14.1 UN / ID	14.2 UN proper shipping name	14.3 Hazard class(es)	14.4 PG*	14.5 Env**	Other information:
ADR	UN1760	CORROSIVE LIQUID, N.O.S. (Diiron tris(sulphate))	Transport hazard class: 8 Label: 8 Classification code: C9 	III	No	Limited quantities: 5 L Tunnel restriction code: (E) See below for additional information.
IMDG	UN1760	CORROSIVE LIQUID, N.O.S. (Diiron tris(sulphate))	Transport hazard class: 8 Label: 8 Classification code: C9 	III	No	Limited quantities: 5 L EmS: F-A S-B See below for additional information.
IATA	UN1760	CORROSIVE LIQUID, N.O.S. (Diiron tris(sulphate))	Transport hazard class: 8 Label: 8 Classification code: C9 	III	No	See below for additional information.

* Packing group

** Environmental hazards

Additional information

ADR / See Table A, section 3.2.1 for any information on special provisions, requirements, or warnings in connection with transport. See section 5.4.3, for instructions in writing regarding mitigation of damages in relation to incidents or accidents during transport.

IMDG / See section 3.2.1, for any information on special provisions, requirements, or warnings in connection with transport.

IATA / See Table 4.2 for any information on special provisions, requirements, or warnings in connection with

transport.

This product is within scope of the regulations of transport of dangerous goods.

Hazchem Code: 2X

14.6. Special precautions for user

Not applicable.

14.7. Maritime transport in bulk according to IMO instruments

No data available.

SECTION 15: Regulatory information

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

Restrictions for application

Restricted to professional users.

Demands for specific education

No specific requirements.

SEVESO - Categories / dangerous substances

Not applicable.

Additional information

Not applicable.

Sources

The Management of Health and Safety at Work Regulations 1999.

Regulation (EU) No 1357/2014 of 18 December 2014 on waste as retained and amended in UK law.

Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures (CLP) as retained and amended in UK law.

Regulation (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) as retained and amended in UK law.

15.2. Chemical safety assessment

No

SECTION 16: Other information

Full text of H-phrases as mentioned in section 3

H290, May be corrosive to metals.

H302, Harmful if swallowed.

H315, Causes skin irritation.

H318, Causes serious eye damage.

Abbreviations and acronyms

ADN = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway

ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road

ATE = Acute Toxicity Estimate

BCF = Bioconcentration Factor

CAS = Chemical Abstracts Service

CE = Conformité Européenne (European conformity)

CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]

CSA = Chemical Safety Assessment

CSR = Chemical Safety Report

DMEL = Derived Minimal Effect Level

DNEL = Derived No Effect Level

EINECS = European Inventory of Existing Commercial chemical Substances

ES = Exposure Scenario

EUH statement = CLP-specific Hazard statement

EuPCS = European Product Categorisation System

EWC = European Waste Catalogue

GHS = Globally Harmonized System of Classification and Labelling of Chemicals

IARC = International Agency for Research on Cancer (IARC)

IATA = International Air Transport Association

IBC = Intermediate Bulk Container

IMDG = International Maritime Dangerous Goods

LogPow = logarithm of the octanol/water partition coefficient

MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)

OECD = Organisation for Economic Co-operation and Development
PBT = Persistent, Bioaccumulative and Toxic
PNEC = Predicted No Effect Concentration
RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail
RRN = REACH Registration Number
SCL = A specific concentration limit
SVHC = Substances of Very High Concern
STOT-RE = Specific Target Organ Toxicity - Repeated Exposure
STOT-SE = Specific Target Organ Toxicity - Single Exposure
TWA = Time weighted average
UN = United Nations
UVBC = Unknown or variable composition, complex reaction products or of biological materials
VOC = Volatile Organic Compound
vPvB = Very Persistent and Very Bioaccumulative

Additional information

The classification of the substance/mixture in regard of health hazards are in accordance with the calculation methods given by Regulation (EC) No. 1272/2008 (CLP) as retained and amended in UK law.

▼ The safety data sheet is validated by

M Bartlett

Other

A change (in proportion to the last essential change (first cipher in SDS version, see section 1)) is marked with a blue triangle.

The information in this safety data sheet applies only to this specific product (mentioned in section 1) and is not necessarily correct for use with other chemicals/products.

It is recommended to hand over this safety data sheet to the actual user of the product. Information in this safety data sheet cannot be used as a product specification.

Country-language: GB-en