

Ferro-Min

Creation date	25th August 2022	Version	2
Revision date	19th January 2026		

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

1.1. Product identifier

Substance / mixture	Ferro-Min mixture
UFI	N820-K06F-N00A-113J

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

Mixture's intended use

Liquid supplementary feed. For professional use only. The product is not intended for private use or for use in the household.

Mixture uses advised against

The product should not be used in ways other than those referred in Section 1.

1.3. Details of the supplier of the safety data sheet

Manufacturer

Name or trade name	Jorenku A/S
Address	Teglværksvej 11, Tappernøje, 4733 Denmark
VAT number	DK38474669
Phone	+45 56 21 40 70
Email	jorenku@jorenku.dk
Web address	www.jorenku.dk

Competent person responsible for the safety data sheet

Name	Jorenku A/S
Email	jorenku@jorenku.dk

1.4. Emergency telephone number

European emergency number: 112

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification of the mixture in accordance with Regulation (EC) No 1272/2008

The mixture is classified as dangerous.

Skin Corr. 1, H314
Eye Dam. 1, H318
Aquatic Chronic 3, H412

Ferro-Min

Creation date	25th August 2022	Version	2
Revision date	19th January 2026		

Most serious adverse effects on human health and the environment

Causes severe skin burns and eye damage. Causes serious eye damage.
Harmful to aquatic life with long lasting effects.

2.2. Label elements

Hazard pictogram



Signal word

Danger

Hazard statements

H314 Causes severe skin burns and eye damage.
H412 Harmful to aquatic life with long lasting effects.

Precautionary statements

P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with 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.
P310 Immediately call a doctor.

2.3. Other hazards

The mixture does not contain substances with endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605. Mixture does not contain any substance meet the criteria for PBT or vPvB in accordance with Annex XIII of Regulation (EC) No. 1907/2006 (REACH) as amended. Does not contain any PMT or vPvM components.

Ferro-Min

Creation date	25th August 2022	Version	2
Revision date	19th January 2026		

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Mixture contains these hazardous substances and substances with the highest permissible concentration in the working environment

Identification numbers	Substance name	Content in % weight	Classification according to Regulation (EC) No 1272/2008	Note
Index: 026-003-01-4 CAS: 7782-63-0 EC: 231-753-5	ferrous sulfate heptahydrate	10-<20	Acute Tox. 4, H302 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Specific concentration limit: Skin Irrit. 2, H315: C ≥ 25 %	
Index: 017-002-01-X EC: 231-595-7	hydrochloric acid ... %	<5	Skin Corr. 1B, H314 STOT SE 3, H335 Specific concentration limit: Skin Corr. 1B, H314: C ≥ 25 % STOT SE 3, H335: C ≥ 10 % Skin Irrit. 2, H315: 10 % ≤ C < 25 % Eye Irrit. 2, H319: 10 % ≤ C < 25 %	1, 2
Index: 607-089-00-0 CAS: 79-09-4 EC: 201-176-3	propionic acid ... %	<5	Skin Corr. 1B, H314 Specific concentration limit: Skin Corr. 1B, H314: C ≥ 25 % STOT SE 3, H335: C ≥ 10 % Eye Irrit. 2, H319: 10 % ≤ C < 25 % Skin Irrit. 2, H315: 10 % ≤ C < 25 %	1, 2

Ferro-Min

Creation date	25th August 2022	Version	2
Revision date	19th January 2026		

Identification numbers	Substance name	Content in % weight	Classification according to Regulation (EC) No 1272/2008	Note
Index: 607-750-00-3 CAS: 77-92-9 EC: 201-069-1	citric acid	<5	Eye Irrit. 2, H319 STOT SE 3, H335	
Index: 030-013-00-7 CAS: 1314-13-2 EC: 215-222-5	zinc oxide	<1	Aquatic Acute 1, H400 (M=1) Aquatic Chronic 1, H410 (M=1)	
Index: 029-023-00-4 CAS: 7758-99-8 EC: 231-847-6	copper sulphate pentahydrate	<0.25	Acute Tox. 4, H302 Eye Dam. 1, H318 Aquatic Acute 1, H400 (M=10) Aquatic Chronic 1, H410 (M=1) Specific concentration limit: ATE Oral = 481 mg/kg bw	

Notes

- Note B: Some substances (acids, bases, etc.) are placed on the market in aqueous solutions at various concentrations and, therefore, these solutions require different classification and labelling since the hazards vary at different concentrations. In Part 3 entries with Note B have a general designation of the following type: 'nitric acid ... %'. In this case the supplier must state the percentage concentration of the solution on the label. Unless otherwise stated, it is assumed that the percentage concentration is calculated on a weight/weight basis.*
- A substance for which exposure limits are set.*

Full text of all classifications and hazard statements is given in the section 16.

Ferro-Min

Creation date	25th August 2022	Version	2
Revision date	19th January 2026		

SECTION 4: First aid measures

4.1. Description of first aid measures

Take care of your own safety. If any health problems are manifested or if in doubt, inform a doctor and show him information from this safety data sheet. If unconscious, put the person in the stabilized (recovery) position on his side with his head slightly bent backwards and make sure that airways are free; never induce vomiting. If the person vomits by himself, make sure that the vomit is not inhaled. In life threatening conditions first of all provide resuscitation of the affected person and ensure medical assistance. Respiratory arrest - provide artificial respiration immediately. Cardiac arrest - provide indirect cardiac massage immediately.

If inhaled

Terminate the exposure immediately; move the affected person to fresh air. Take care of your own safety, do not let the affected person walk! Beware of the contaminated clothes. Depending on the situation, call the medical rescue service and ensure medical treatment considering the frequent need of further observation for at least 24 hours.

If on skin

Remove contaminated clothes. Take off any rings, watches, bracelets before or during washing if worn in the contaminated areas of the skin. Rinse contaminated areas with a flow of water, lukewarm at best, for 10-30 minutes; do not use any brush, soap or neutralizers. Depending on the situation, call the medical rescue service and always ensure medical treatment.

If in eyes

Rinse eyes immediately with a flow of running water, open the eyelids (also using force if needed); remove contact lenses immediately if worn by the affected person. No neutralization should be performed in any case! Rinsing should be continued for 10-30 minutes from the inner to the outer eye corner to make sure that the other eye is not involved. Depending on the situation, call medical rescue service or ensure medical treatment as promptly as possible. Everyone must be referred for treatment even if affected only a little.

Ferro-Min

Creation date	25th August 2022	Version	2
Revision date	19th January 2026		

If swallowed

RINSE THE MOUTH WITH WATER IMMEDIATELY AND LET THE PERSON DRINK 0.2-0.5 l of cold water to reduce the heating effect of the corrosive substance. Consuming larger amounts of liquid is not advisable as it may induce vomiting and potential inhaling of the corrosive substances in the lungs. The affected person must not be forced to drink, particularly if already feeling pain in the mouth or throat. In this case let the affected person only rinse the mouth with water. DO NOT PROVIDE ACTIVATED CARBON! Depending on the situation, call medical rescue service or ensure medical treatment as promptly as possible.

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

If inhaled

Inhaling vapours can cause corrosion of the breathing system.

If on skin

Causes severe skin burns.

If in eyes

Causes serious eye damage.

If swallowed

Corrosion of the digestion system can occur.

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

Symptomatic treatment.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Alcohol-resistant foam, carbon dioxide, powder, water spray jet, water mist.

Unsuitable extinguishing media

Water - full jet.

5.2. Special hazards arising from the substance or mixture

In the event of fire, carbon monoxide, carbon dioxide and other toxic gases may arise. Inhalation of hazardous degradation (pyrolysis) products may cause serious health damage.

Ferro-Min

Creation date	25th August 2022	Version	2
Revision date	19th January 2026		

5.3. Advice for firefighters

Self-Contained Breathing Apparatus (SCBA) with a chemical protection suit only where personal (close) contact is likely. Use a self-contained breathing apparatus and full-body protective clothing. Do not allow run-off of contaminated fire extinguishing material to enter drains or surface and ground water.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment for work. Follow the instructions in the Sections 7 and 8. Do not inhale mist/vapours/spray. Prevent contact with skin and eyes.

6.2. Environmental precautions

Prevent contamination of the soil and entering surface or ground water.

6.3. Methods and material for containment and cleaning up

Spilled product should be covered with suitable (non-flammable) absorbing material (sand, diatomaceous earth, earth and other suitable absorption materials); to be contained in well closed containers and removed as per the Section 13. In the event of leakage of the substantial amount of the product, inform fire brigade and other competent bodies. After removal of the product, wash the contaminated site with plenty of water. Do not use solvents.

6.4. Reference to other sections

See the Section 7, 8 and 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Prevent formation of gases and vapours in concentrations exceeding the occupational exposure limits. Do not inhale mist/vapours/spray. Prevent contact with skin and eyes. Wash hands and exposed parts of the body thoroughly after handling. Use personal protective equipment as per Section 8. Observe valid legal regulations on safety and health protection. Avoid release to the environment.

7.2. Conditions for safe storage, including any incompatibilities

Store in tightly closed containers in cold, dry and well ventilated areas designated for this purpose. Store locked up.

7.3. Specific end use(s)

not available

Ferro-Min

Creation date	25th August 2022	Version	2
Revision date	19th January 2026		

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

The mixture contains substances for which occupational exposure limits are set.

European Union

Commission Directive 2000/39/EC

Substance name (component)	Type	Value
Hydrogen chlorid	OEL 8 hours	8 mg/m ³
	OEL 8 hours	5 ppm
	OEL 15 minutes	15 mg/m ³
	OEL 15 minutes	10 ppm
propionic acid ... % (CAS: 79-09-4)	OEL 8 hours	31 mg/m ³
	OEL 8 hours	10 ppm
	OEL 15 minutes	62 mg/m ³
	OEL 15 minutes	20 ppm

8.2. Exposure controls

Take off contaminated clothing and wash before reuse. Follow the usual measures intended for health protection at work and especially for good ventilation. This can be achieved only by local suction or efficient general ventilation. Do not eat, drink and smoke during work. Wash your hands thoroughly with water and soap after work and before breaks for a meal and rest.

Eye/face protection

Protective goggles or face shield (based on the nature of the work performed).

Skin protection

Hand protection: Protective gloves resistant to the product. When choosing appropriate thickness, material and permeability of the gloves, observe recommendations of their particular manufacturer. When selecting gloves, consider the properties of the product and the duration of exposure. Replace gloves at the first signs of wear or damage. Other protection: protective workwear. Contaminated skin should be washed thoroughly.

Ferro-Min

Creation date	25th August 2022	Version	2
Revision date	19th January 2026		

Glove material	Thickness	Breakthrough time	Class	Exposure time
Nitrile (NBR)	≥ 0.3 mm	>30 min	2	Short-term
Nitrile (NBR)	≥ 0.7 mm	>480 min	6	Repeated, Long-term

Respiratory protection

Mask with a filter in a poorly ventilated environment.

Thermal hazard

Not available.

Environmental exposure controls

Observe usual measures for protection of the environment, see Section 6.2.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	liquid
Colour	data not available
Odour	data not available
Melting point/freezing point	data not available
Boiling point or initial boiling point and boiling range	data not available
Flammability	data not available
Lower and upper explosion limit	data not available
Flash point	not applicable
Auto-ignition temperature	data not available
Decomposition temperature	not applicable
pH	1.5 (undiluted)
Kinematic viscosity	data not available
Solubility in water	soluble in water
Partition coefficient n-octanol/water (log value)	not applicable
Vapour pressure	data not available
Density and/or relative density	data not available
Relative vapour density	data not available
Particle characteristics	not applicable
Form	liquid - liquid: emulsion

9.2. Other information

Ferro-Min

Creation date	25th August 2022	Version	2
Revision date	19th January 2026		

not available

SECTION 10: Stability and reactivity

10.1 Reactivity

- not available

10.2 Chemical stability

- The product is stable under normal conditions.

10.3 Possibility of hazardous reactions

- Unknown.

10.4 Conditions to avoid

- The product is stable and no degradation occurs under normal use. Protect against flames, sparks, overheating and against frost.

10.5 Incompatible materials

- Protect against strong acids, bases and oxidizing agents.

10.6 Hazardous decomposition products

- Not developed under normal uses. Dangerous outcomes such as carbon monoxide and carbon dioxide are formed at high temperature and in fire.

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

- Hazardous substances in concentrations exceeding exposure limits may cause acute inhalation poisoning, depending on the concentration and duration of exposure. No toxicological data is available for the mixture.

Ferro-Min

Creation date	25th August 2022	Version	2
Revision date	19th January 2026		

Acute toxicity

Based on the available data, the criteria for classification of the mixture are not met. Data for the components of the mixture are not available.

Ferro-Min						
Route of exposure	Parameter	Value	Exposure time	Species	Sex	Value determination
Oral	ATE	2468 mg/kg				Calculation of value

copper sulphate pentahydrate						
Route of exposure	Parameter	Value	Exposure time	Species	Sex	Value determination
Oral	ATE	481 mg/kg bw				

Skin corrosion/irritation

Causes severe skin burns and eye damage. Data for the components of the mixture are not available.

Serious eye damage/irritation

Causes severe skin burns and eye damage. Causes serious eye damage. Data for the components of the mixture are not available.

Respiratory or skin sensitisation

No data are available for either the mixture or the components. Based on the available data, the criteria for classification of the mixture are not met.

Germ cell mutagenicity

No data are available for either the mixture or the components. Based on the available data, the criteria for classification of the mixture are not met.

Carcinogenicity

No data are available for either the mixture or the components. Based on the available data, the criteria for classification of the mixture are not met.

Reproductive toxicity

No data are available for either the mixture or the components. Based on the available data, the criteria for classification of the mixture are not met.

Ferro-Min

Creation date	25th August 2022	Version	2
Revision date	19th January 2026		

Toxicity for specific target organ - single exposure

No data are available for either the mixture or the components. Based on the available data, the criteria for classification of the mixture are not met.

Toxicity for specific target organ - repeated exposure

No data are available for either the mixture or the components. Based on the available data, the criteria for classification of the mixture are not met.

Aspiration hazard

No data are available for either the mixture or the components. Based on the available data, the criteria for classification of the mixture are not met.

11.2 Information on other hazards

▪

Endocrine disrupting properties

Based on the available data, the criteria for classification of the mixture are not met. Does not contain any components that may cause endocrine disruption for humans.

Other information

not available

SECTION 12: Ecological information

12.1 Toxicity

▪

Harmful to aquatic life with long lasting effects. Data for the components of the mixture are not available.

12.2 Persistence and degradability

▪

No data are available for either the mixture or the components.

12.3 Bioaccumulative potential

▪

No data are available for either the mixture or the components.

12.4 Mobility in soil

▪

Based on the available data, the criteria for classification of the mixture are not met. Does not contain any PMT or vPvM components.

12.5 Results of PBT and vPvB assessment

▪

Ferro-Min

Creation date	25th August 2022	Version	2
Revision date	19th January 2026		

Based on the available data, the criteria for classification of the mixture are not met. Does not contain any PBT or vPvB components.

12.6 Endocrine disrupting properties

- Based on the available data, the criteria for classification of the mixture are not met. Does not contain any components that may cause endocrine disruption in the environment.

12.7 Other adverse effects

- Not available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

- Hazard of environmental contamination; dispose of the waste in accordance with the local and/or national regulations. Any unused product and contaminated packaging should be put in labelled containers for waste collection and submitted for disposal to a person authorised for waste removal (a specialized company) that is entitled for such activity. Do not empty unused product in drainage systems. The product must not be disposed of with municipal waste. Perfectly cleaned containers can be submitted for recycling.

Waste management legislation

Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste, as amended. Decision 2000/532/EC establishing a list of wastes, as amended.

Waste type code

02 01 06 animal faeces, urine and manure (including spoiled straw), effluent, collected separately and treated Off-site

SECTION 14: Transport information

14.1 UN number or ID number

- UN 1760

14.2 UN proper shipping name

- CORROSIVE LIQUID, N.O.S. (Hydrochloric acid, propionic acid)

Ferro-Min

Creation date	25th August 2022	Version	2
Revision date	19th January 2026		

14.3 Transport hazard class(es)

- 8 Corrosive substances

14.4 Packing group

- III

14.5 Environmental hazards

- not relevant

14.6 Special precautions for user

- Reference in the Sections 4 to 8.

14.7 Maritime transport in bulk according to IMO instruments

- not relevant

Additional information

Hazard identification No.	80
UN number	1760
Classification code	C9
Safety signs	8



Tunnel restriction code	(E)
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Air transport - ICAO/IATA

Packaging instructions passenger	852
Cargo packaging instructions	856

Marine transport - IMDG

EmS (emergency plan)	F-A, S-B
MFAG	760

Ferro-Min

Creation date	25th August 2022	Version	2
Revision date	19th January 2026		

SECTION 15: Regulatory information

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

Regulation (EC) No. 1907/2006 of the European Parliament and of the Council of 18th December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing the 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, as amended. REGULATION (EC) No. 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL as amended. Commission Regulation (EU) 2020/878 of 18 June 2020 amending Annex II to Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

15.2 Chemical safety assessment

not available

SECTION 16: Other information

A list of standard risk phrases used in the safety data sheet

- H302 Harmful if swallowed.
- H314 Causes severe skin burns and eye damage.
- H315 Causes skin irritation.
- H318 Causes serious eye damage.
- H319 Causes serious eye irritation.
- H335 May cause respiratory irritation.
- H400 Very toxic to aquatic life.
- H410 Very toxic to aquatic life with long lasting effects.
- H412 Harmful to aquatic life with long lasting effects.

Guidelines for safe handling used in the safety data sheet

- P260 Do not breathe dust/fume/gas/mist/vapours/spray.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.
- P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
- P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.

Ferro-Min

Creation date	25th August 2022	Version	2
Revision date	19th January 2026		

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

P310 Immediately call a doctor.

Other important information about human health protection

The product must not be - unless specifically approved by the manufacturer/importer - used for purposes other than as per the Section 1. The user is responsible for adherence to all related health protection regulations.

Key to abbreviations and acronyms used in the safety data sheet

Acute Tox.	Acute toxicity
ADR	Agreement concerning the international carriage of dangerous goods by road
Aquatic Acute	Hazardous to the aquatic environment
Aquatic Chronic	Hazardous to the aquatic environment (chronic)
ATE	Acute toxicity estimate
BCF	Bioconcentration Factor
CAS	Chemical Abstracts Service
CLP	Regulation (EC) No 1272/2008 on classification, labelling and packaging of substance and mixtures
EC	Identification code for each substance listed in EINECS
EINECS	European Inventory of Existing Commercial Chemical Substances
EmS	Emergency Response Procedures for Ships Carrying Dangerous Goods
EU	European Union
EuPCS	European Product Categorisation System
Eye Dam.	Serious eye damage
Eye Irrit.	Eye irritation
IATA	International Air Transport Association
IBC	International Code For The Construction And Equipment of Ships Carrying Dangerous Chemicals
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods
IMO	International Maritime Organization
INCI	International Nomenclature of Cosmetic Ingredients
ISO	International Organization for Standardization
IUPAC	International Union of Pure and Applied Chemistry

Ferro-Min

Creation date	25th August 2022	Version	2
Revision date	19th January 2026		

log Kow	Octanol-water partition coefficient
OEL	Occupational Exposure Limits
PBT	Persistent, bioaccumulative and toxic
PMT	Persistent, mobile and toxic
ppm	Parts per million
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Regulation concerning the International Carriage of Dangerous Goods by Rail
Skin Corr.	Skin corrosion
Skin Irrit.	Skin irritation
STOT SE	Specific target organ toxicity - single exposure
UN number	Four-figure identification number of the substance or article taken from the UN Model Regulations
UVCB	Substances of unknown or variable composition, complex reaction products or biological materials
VOC	Volatile organic compounds
vPvB	Very persistent and very bioaccumulative
vPvM	Very persistent and very mobile

Training guidelines

Inform the personnel about the recommended ways of use, mandatory protective equipment, first aid and prohibited ways of handling the product.

Recommended restrictions of use

not available

Information about data sources used to compile the Safety Data Sheet

REGULATION (EC) No. 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL (REACH) as amended. REGULATION (EC) No. 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL as amended. Data from the manufacturer of the substance / mixture, if available - information from registration dossiers.

More information

Classification procedure - calculation method.

Statement

Ferro-Min

Creation date	25th August 2022	Version	2
Revision date	19th January 2026		

The safety data sheet provides information aimed at ensuring safety and health protection at work and environmental protection. The provided information corresponds to the current status of knowledge and experience and complies with valid legal regulations. The information should not be understood as guaranteeing the suitability and usability of the product for a particular application.