

SAFETY DATA SHEET

Opti-Iron

SECTION 1: Identification of the substance/mixture and of the company/undertaking
1.1. Product identifier
Trade name

Opti-Iron

Other names / Synonyms

Opti-Jern

Unique formula identifier (UFI)

U0H5-3KAF-3H2Q-N90U

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

Use only for animal feed

Restricted to professional users.

Uses advised against

None known.

1.3. Details of the supplier of the safety data sheet
Company and address
R2 Agro A/S

Odinsvej 23

DK-8722 Hedensted

Denmark

Tel: +45 76741200

E-mail

info@r2agro.com

Revision

06/03/2025

SDS Version

9.0

Date of previous version

19/12/2024 (8.0)

1.4. Emergency telephone number

Contact the poison hotline: +45 82 12 12 12 (24 hour service)

See section 4 "First aid measures".

SECTION 2: Hazards identification

Classified according to Regulation (EC) No. 1272/2008 (CLP).

2.1. Classification of the substance or mixture

Skin Corr. 1C; H314, Causes severe skin burns and eye damage.

Eye Dam. 1; H318, Causes serious eye damage.

Aquatic Chronic 3; H412, Harmful to aquatic life with long lasting effects.

2.2. Label elements
Hazard pictogram(s)

Signal word

Danger

Hazard statement(s)

Causes severe skin burns and eye damage. (H314)

Harmful to aquatic life with long lasting effects. (H412)

Precautionary statement(s)

General

-

Prevention

Do not breathe vapour/mist. (P260)

Avoid release to the environment. (P273)

Wear eye protection/protective gloves/protective clothing. (P280)

Response

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. (P303+P361+P353)

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

Storage

-

Disposal

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

Hazardous substances

L-(+)-lactic acid; (2S)-2-hydroxypropanoic acid

Sulfuric acid, zinc salt (1:1), monohydrate

Additional labelling

UFI: U0H5-3KAF-3H2Q-N90U

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) 2023/707.

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 |
|-------------------------------------------------|---------------------------------------------------------------------------------------------|-------|--------------------------------------------------------------------------------------------------------|------|
| L-(+)-lactic acid; (2S)-2-hydroxypropanoic acid | CAS No.: 79-33-4 EC No.: 201-196-2 REACH: 01-2119474164-39 Index No.: 607-743-00-5 | 5-10% | EUH071 Skin Corr. 1C, H314 Eye Dam. 1, H318 | |
| Sulfuric acid, iron(2+) salt (1:1), monohydrate | CAS No.: 17375-41-6 EC No.: REACH: Index No.: | 5-10% | Acute Tox. 4, H302 Skin Irrit. 2, H315 Eye Irrit. 2, H319 | |
| Citric Acid Monohydrate | CAS No.: 5949-29-1 EC No.: 611-842-9 REACH: 01- 2119457026-42 Index No.: | 3-5% | Eye Irrit. 2, H319 | |
| Sulfuric acid, zinc salt (1:1), monohydrate | CAS No.: 7446-19-7 EC No.: 616-096-8 REACH: Index No.: | 1-3% | Acute Tox. 4, H302 Eye Dam. 1, H318 Aquatic Acute 1, H400 (M=1) Aquatic Chronic 1, H410 (M=1) | |

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

Flush exposed area with water for a long time - at least 30 minutes. It may be necessary to flush for several hours. Use a comfortable water temperature (20-30 °C). Contact Poison Information/doctor/hospital for further advice on follow-up and treatment.

Remove contaminated clothing and shoes immediately. Ensure to wash exposed skin thoroughly with water and soap. Skin cleanser can be used. 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

In the case of ingestion, contact a doctor immediately. If the person is conscious, give them water. DO NOT try to induce vomiting unless this is recommended by a doctor. Hold head facing down to prevent vomit from returning to the mouth and throat. Prevent shock by keeping the injured person warm and calm. Initiate immediate resuscitation if breathing stops. If unconscious, roll the injured person into recovery position. Call an ambulance.

Burns

Not applicable.

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

Tissue-damaging effects: This product contains substances with skin corrosive properties. Inhaled vapour or aerosols may produce adverse effects to lungs, irritations and burns in the respiratory organs as well as coughing. Dermal contact and contact with the eye cause irreversible effects.

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

Not applicable.

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:

- Halogenated compounds
- Carbon oxides (CO / CO₂)
- Some metal oxides

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective clothing to prevent contact. Upon direct exposure contact the chemical emergency services on 72 85 20 00 (24 h service) in order to obtain further advice.

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. In the event of leakage to the surroundings, contact local environmental authorities.

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

It is recommended to install waste collection trays in order to prevent emissions to the waste water system and surrounding environment.

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.

Recommended storage material

Always store in containers of the same material as the original container.

Storage conditions

No specific requirements

Incompatible materials

Strong acids, strong bases, strong oxidizing agents, and strong reducing agents.

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

ethanol;ethyl alcohol

Long term exposure limit (8 hours) (mg/m³): 1900

Long term exposure limit (8 hours) (ppm): 1000

Short term exposure limit (15 minutes) (mg/m³): 3800

Short term exposure limit (15 minutes) (ppm): 2000

Statutory order 1619 on exposure limits for substances and mixtures (19/12/2024)

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

In between use of the product and at the end of the working day all exposed areas of the body must be washed thoroughly. Pay special attention to hands, forearms and face.

Measures to avoid environmental exposure


Keep damming materials near the workplace. If possible, collect spillage during work.

Individual protection measures, such as personal protective equipment


Generally

Use only CE marked protective equipment.



Respiratory Equipment

| Work situation | Type | Class | Colour | Standards | |
|-------------------------------------------------|-----------------------------------------------------|-------|--------|------------------|-------------------------------------------------------------------------------------|
| | No special when used as intended. | | | | |
| When there is risk of formation of mist/aerosol | Breathing apparatus with a compressor and mask-hood | | | EN12941, EN12942 |  |



Skin protection

| Recommended | Type/Category | Standards | |
|----------------------------------------------------------------------------------------------------------------------------|---------------|-----------|-------------------------------------------------------------------------------------|
| Dedicated work clothing should be worn. Wear a protective suit in the event of prolonged periods of work with the product. | - | - |  |

Hand protection

| Material | Glove thickness (mm) | Breakthrough time (min.) | Standards | |
|---------------------|----------------------|--------------------------|-------------------------|---------------------------------------------------------------------------------------|
| Butyl | 0.5 | > 480 | EN374-2, EN374-3, EN388 |  |
| Neoprene (Neoprene) | 0,6 | > 480 | EN374-2, EN374-3, EN388 |  |

Eye protection

| Type | Standards | |
|-----------------------------------|-----------|---------------------------------------------------------------------------------------|
| Face shield | EN166 |  |
| Safety glasses with side shields. | EN166 |  |

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state

Liquid

Colour

Brown

Odour / Odour threshold

Sour

pH

1,3

Density (g/cm³)

1.2

▼ Kinematic viscosity

No data available.

Particle characteristics

Not applicable - product is a liquid

Phase changes

Melting point/Freezing point (°C)

Not applicable - product is a liquid

Softening point/range (°C)

Does not apply to liquids.

Boiling point (°C)

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

▼ Vapour pressure

No data available.

▼ Relative vapour density

No data available.

▼ Decomposition temperature (°C)

No data available.

Data on fire and explosion hazards

Flash point (°C)

No data available

▼ Flammability (°C)

No data available.

Auto-ignition temperature (°C)

No data available

▼ Lower and upper explosion limit (% v/v)

No data available.

Solubility

Solubility in water

Freely soluble

▼ n-octanol/water coefficient (LogKow)

No data available.

▼ Solubility in fat (g/L)

No data available.

9.2. Other information

Other physical and chemical parameters

No data available.

▼ Oxidizing properties

No data available.

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

Strong acids, strong bases, strong oxidizing agents, and strong reducing agents.

10.6. Hazardous decomposition products

Thermal decomposition may produce corrosive vapours.

SECTION 11: Toxicological information

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

Acute toxicity

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

Skin corrosion/irritation

Causes severe skin burns and eye damage.

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

Tissue-damaging effects: This product contains substances with skin corrosive properties. Inhaled vapour or aerosols may produce adverse effects to lungs, irritations and burns in the respiratory organs as well as coughing. Dermal contact and contact with the eye cause irreversible effects.

▼ 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

Harmful to aquatic life with long lasting effects.

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

This product contains substances that are toxic to the environment. May result in adverse effects to aquatic organisms.

This product contains substances, which may cause adverse long-term effects to the aquatic environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product is covered by the regulations on hazardous waste.

HP 8 – Corrosive

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

According to EC-Regulation 1907/2006 (REACH), annex II, including changes implemented by EC-Regulation 2020/878

Commission Regulation (EU) No 1357/2014 of 18 December 2014 on waste.

EWC code

Not applicable.


Specific labelling

Not applicable.

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) Label: 8 Classification code: C3 | 14.4 PG* | 14.5 Env** | Other informatio n: |
|------|-------------------------|---------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------|---------------------------------------------------------------------------------------------------|
| ADR | UN3265 | CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (L-+)-lactic acid; (2S)-2- hydroxypropanoic acid) | Transport hazard class: 8 Label: 8 Classification code: C3  | III | No | Limited quantities: 5 L Tunnel restriction code: (E) See below for additional information . |
| IMDG | UN3265 | CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (L-+)-lactic acid; (2S)-2- hydroxypropanoic acid) | Transport hazard class: 8 Label: 8 Classification code: C3  | III | No | Limited quantities: 5 L EmS: F-A S-B See below for additional information . |
| IATA | UN3265 | CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (L-+)-lactic acid; (2S)-2- hydroxypropanoic acid) | Transport hazard class: 8 Label: 8 Classification code: C3  | III | No | See below for additional information . |

* Packing group

** Environmental hazards

Additional information

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

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.

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.
People under the age of 18 shall not be exposed to this product.

Demands for specific education

No specific requirements.

SEVESO - Categories / dangerous substances

Not applicable.

REACH, Annex XVII

ethanol;ethyl alcohol is subject to REACH restrictions (entry 40).

▼ Product registration number

4591291

Additional information

Not applicable.

Sources

The Danish Working Environment Authority's executive order no. 1049 of 30 May 2021 on young people's work.
Based on Council Directive 94/33 / EC of 22 June 1994 on the protection of young people at work.
Commission Regulation (EU) No 1357/2014 of 18 December 2014 on waste.
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 (CLP).
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).

15.2. Chemical safety assessment

No

SECTION 16: Other information

Full text of H-phrases as mentioned in section 3

H302, Corrosive to the respiratory tract.
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.
H400, Very toxic to aquatic life.
H410, Very toxic to aquatic life with long lasting effects.

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
GWP = Global warming potential
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 mixture in regard of health hazards is in accordance with the calculation methods given by Regulation (EC) No. 1272/2008 (CLP).

The classification of the substance/mixture in regard of environmental hazards are in accordance with the calculation methods given by Regulation (EC) No. 1272/2008 (CLP).

The safety data sheet is validated by

ZCR

Other

A change (in proportion to the last essential change (first cipher in SDS version, see section 1)) is marked with a 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: DK-en