

Safety data sheet

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BASF Safety data sheet according to UN GHS 4th rev.
Date / Revised: 05.05.2017
Product: **Libfer® SP**

Version: 1.0

(ID no. 30483218/SDS_GEN_IL/EN)

Date of print 02.07.2019

(A) 0008935 (K) 000581 (B) 2/8
(C) 0000000361743105 2/0/0/



1. Identification

Product identifier

Libfer® SP

Chemical name: Acetic acid, oxo-, sodium salt, reaction products with ethylenediamine and phenol, iron sodium salts
CAS Number: 16455-61-1

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

Relevant identified uses: Micronutrient

Details of the supplier of the safety data sheet

Company:
BASF SE
67056 Ludwigshafen
GERMANY

Telephone: +49 621 60-0

Emergency telephone number

International emergency number:
Telephone: +49 180 2273-112

2. Hazards Identification

Classification of the substance or mixture

According to UN GHS criteria

No need for classification according to GHS criteria for this product.

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Label elements

Globally Harmonized System (GHS)

The product does not require a hazard warning label in accordance with GHS criteria.

Labeling of special preparations (GHS):

May produce an allergic reaction. Contains: ETHYLENEDIAMINE

Other hazards

According to UN GHS criteria

No specific dangers known, if the regulations/notes for storage and handling are considered.

3. Composition/Information on Ingredients

Substances

Chemical nature

Sodium [[.alpha.,.alpha.'-(ethylenediimino)bis[2-hydroxybenzene-1-acetato]](4-)]ferrate(1-)
CAS Number: 16455-61-1
EC-Number: 240-505-5

Mixtures

Not applicable

4. First-Aid Measures

Description of first aid measures

Remove contaminated clothing.

If inhaled:

Keep patient calm, remove to fresh air.

On skin contact:

Wash thoroughly with soap and water.

On contact with eyes:

Wash affected eyes for at least 15 minutes under running water with eyelids held open.

On ingestion:

Rinse mouth and then drink plenty of water.

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Most important symptoms and effects, both acute and delayed

Symptoms: No significant symptoms are expected due to the non-classification of the product.

Indication of any immediate medical attention and special treatment needed

Treatment: Symptomatic treatment (decontamination, vital functions).

5. Fire-Fighting Measures**Extinguishing media**

Suitable extinguishing media:
water spray, foam, dry powder

Unsuitable extinguishing media for safety reasons:
water jet, carbon dioxide

Special hazards arising from the substance or mixture

harmful vapours

Evolution of fumes/fog. The substances/groups of substances mentioned can be released in case of fire.

carbon oxides

Advice for fire-fighters

Special protective equipment:
Wear a self-contained breathing apparatus.

Further information:

The degree of risk is governed by the burning substance and the fire conditions. Contaminated extinguishing water must be disposed of in accordance with official regulations.

6. Accidental Release Measures**Personal precautions, protective equipment and emergency procedures**

Use personal protective clothing. Information regarding personal protective measures see, section 8.

Environmental precautions

Contain contaminated water/firefighting water. Do not discharge into drains/surface waters/groundwater.

Methods and material for containment and cleaning up

For small amounts: Pick up with suitable appliance and dispose of.
For large amounts: Contain with dust binding material and dispose of.
Dispose of absorbed material in accordance with regulations.

Reference to other sections

Information regarding exposure controls/personal protection and disposal considerations can be found in section 8 and 13.

7. Handling and Storage

Precautions for safe handling

Breathing must be protected when large quantities are decanted without local exhaust ventilation.

Protection against fire and explosion:

Avoid dust formation. Take precautionary measures against static discharges.

Dust explosion class: none.

Conditions for safe storage, including any incompatibilities

Suitable materials for containers: High density polyethylene (HDPE), Polypropylene (PP)

Further information on storage conditions: Keep container tightly closed and dry; store in a cool place.

8. Exposure Controls/Personal Protection

Control parameters

Components with occupational exposure limits

No occupational exposure limits known.

Exposure controls

Personal protective equipment

Respiratory protection:

Suitable respiratory protection for lower concentrations or short-term effect: Particle filter with medium efficiency for solid and liquid particles (e.g. EN 143 or 149, Type P2 or FFP2)

Hand protection:

Chemical resistant protective gloves (EN 374)

Suitable materials also with prolonged, direct contact (Recommended: Protective index 6, corresponding > 480 minutes of permeation time according to EN 374):

e.g. nitrile rubber (0.4 mm), chloroprene rubber (0.5 mm), polyvinylchloride (0.7 mm) and other

Supplementary note: The specifications are based on tests, literature data and information of glove manufacturers or are derived from similar substances by analogy. Due to many conditions (e.g. temperature) it must be considered, that the practical usage of a chemical-protective glove in practice may be much shorter than the permeation time determined through testing.

Manufacturer's directions for use should be observed because of great diversity of types.

Eye protection:

Safety glasses with side-shields (frame goggles) (e.g. EN 166)

Body protection:

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Body protection must be chosen depending on activity and possible exposure, e.g. apron, protecting boots, chemical-protection suit (according to EN 14605 in case of splashes or EN ISO 13982 in case of dust).

General safety and hygiene measures

Wearing of closed work clothing is recommended. No eating, drinking, smoking or tobacco use at the place of work. Handle in accordance with good industrial hygiene and safety practice.

9. Physical and Chemical Properties

Information on basic physical and chemical properties

Form:	free flowing fine granules	
Colour:	red to black	
Odour:	mild	
Odour threshold:	not determined	
pH value:	8 - 9 (10 g/l)	
Melting point:	> 500 °C (1.013 hPa)	(OECD Guideline 102)
Boiling point:	not applicable	
Flash point:	not applicable	
Evaporation rate:	The product is a non-volatile solid.	
Flammability:	not highly flammable	
Lower explosion limit:	For solids not relevant for classification and labelling.	
Upper explosion limit:	For solids not relevant for classification and labelling.	
Ignition temperature:	460 °C	(BAM)
Vapour pressure:	0,000001 hPa (20 °C)	(OECD Guideline 104)
Density:	1,5892 g/cm ³ (20 °C)	(OECD Guideline 109)
Relative density:	1,5892 (20 °C)	(OECD Guideline 109)
Relative vapour density (air):	The product is a non-volatile solid.	
Solubility in water:	> 150 - < 203 g/l (23 °C)	(OECD Guideline 105)
Partitioning coefficient n-octanol/water (log Kow):	-4,2 (23 °C)	

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Self ignition:	Temperature: 331 °C Pressure: 1.013 hPa	Test type: Self-ignition at high temperatures. (Method: Directive 92/69/EEC, A.16)
Thermal decomposition:	270 °C (VDI 2263, sheet 1, 1.4.1)	
Viscosity, dynamic:	not applicable	
Viscosity, kinematic:	not applicable, the product is a solid	
Explosion hazard:	not explosive	
Fire promoting properties:	not fire-propagating	

Other information

Bulk density:	600 - 800 kg/m ³	
Hygroscopy:	The product has not been tested.	
Surface tension:	Based on chemical structure, surface activity is not to be expected.	
Grain size distribution	367 µm	(D90, other (measured))
	particles 100 µm	2,7 %
	particles 63 µm	0,01 %
	particles 216 µm	50 %

Other Information:

If necessary, information on other physical and chemical parameters is indicated in this section.

10. Stability and Reactivity

Reactivity

No hazardous reactions if stored and handled as prescribed/indicated.

Corrosion to metals:	Corrosive effects to metal are not anticipated.	
Formation of flammable gases:	Remarks:	Forms no flammable gases in the presence of water.

Chemical stability

The product is stable if stored and handled as prescribed/indicated.

Possibility of hazardous reactions

The product is not a dust explosion risk as supplied; however the build-up of fine dust can lead to a risk of dust explosions.

Conditions to avoid

Avoid extreme temperatures.

Avoid dust formation. Avoid deposition of dust.

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Incompatible materials

Substances to avoid:
 strong bases, oxidizing agents

Hazardous decomposition products

Hazardous decomposition products:
 No hazardous decomposition products if stored and handled as prescribed/indicated.

11. Toxicological Information

Information on toxicological effects

Acute toxicity

Assessment of acute toxicity:
 Virtually nontoxic after a single ingestion. Virtually nontoxic after a single skin contact. Virtually nontoxic by inhalation.

Information on: Acetic acid, oxo-, sodium salt, reaction products with ethylenediamine and phenol, iron sodium salts

Experimental/calculated data:

LD50 rat (oral): > 2.000 mg/kg (OECD Guideline 401)

Limit concentration test only (LIMIT test). No mortality was observed.

Information on: Acetic acid, oxo-, sodium salt, reaction products with ethylenediamine and phenol, iron sodium salts

Experimental/calculated data:

LC50 rat (by inhalation): > 4,2 mg/l 4 h (OECD Guideline 403)

Limit concentration test only (LIMIT test). No mortality was observed. An aerosol was tested.

Information on: Acetic acid, oxo-, sodium salt, reaction products with ethylenediamine and phenol, iron sodium salts

Experimental/calculated data:

LD50 rat (dermal): > 2.000 mg/kg (OECD Guideline 402)

Limit concentration test only (LIMIT test). No mortality was observed.

Irritation

Assessment of irritating effects:
 Not irritating to eyes and skin.

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Experimental/calculated data:

Skin corrosion/irritation rabbit: non-irritant (OECD Guideline 404)

Information on: Acetic acid, oxo-, sodium salt, reaction products with ethylenediamine and phenol, iron sodium salts

Experimental/calculated data:

Serious eye damage/irritation rabbit: non-irritant (OECD Guideline 405)

Respiratory/Skin sensitization

Assessment of sensitization:

A sensitizing effect on particularly sensitive individuals cannot be excluded. Based on available Data, the classification criteria are not met.

Information on: Acetic acid, oxo-, sodium salt, reaction products with ethylenediamine and phenol, iron sodium salts

Assessment of sensitization:

Animal studies do not exclude a sensitizing potential. Human data are not available.

Information on: ethylenediamine; 1,2-diaminoethane

Assessment of sensitization:

The substance may cause sensitization of the respiratory tract. Sensitization after skin contact possible.

Information on: Acetic acid, oxo-, sodium salt, reaction products with ethylenediamine and phenol, iron sodium salts

Experimental/calculated data:

Mouse Local Lymph Node Assay (LLNA) mouse: ambiguous (OECD Guideline 429)

Germ cell mutagenicity

Information on: Acetic acid, oxo-, sodium salt, reaction products with ethylenediamine and phenol, iron sodium salts

Assessment of mutagenicity:

The substance was not mutagenic in bacteria. The substance was not mutagenic in mammalian cell culture.

Carcinogenicity

Information on: Acetic acid, oxo-, sodium salt, reaction products with ethylenediamine and phenol, iron sodium salts

Assessment of carcinogenicity:

Study scientifically not justified.

Reproductive toxicity

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Information on: Acetic acid, oxo-, sodium salt, reaction products with ethylenediamine and phenol, iron sodium salts

Assessment of reproduction toxicity:

Animal studies gave no indication of a fertility impairing effect at doses which were not toxic to the parental animals. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Developmental toxicity

Information on: Acetic acid, oxo-, sodium salt, reaction products with ethylenediamine and phenol, iron sodium salts

Assessment of teratogenicity:

Animal studies gave no indication of a developmental toxic effect at doses that were not toxic to the parental animals.

Specific target organ toxicity (single exposure)

Remarks: No data available.

Repeated dose toxicity and Specific target organ toxicity (repeated exposure)

Information on: Acetic acid, oxo-, sodium salt, reaction products with ethylenediamine and phenol, iron sodium salts

Assessment of repeated dose toxicity:

Repeated oral uptake of the substance did not cause substance-related effects. Repeated dermal uptake of the substance did not cause substance-related effects.

Aspiration hazard

not applicable

12. Ecological Information

Toxicity

Assessment of aquatic toxicity:

There is a high probability that the product is not acutely harmful to aquatic organisms. The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations.

Information on: Acetic acid, oxo-, sodium salt, reaction products with ethylenediamine and phenol, iron sodium salts

Toxicity to fish:

LC50 (96 h) > 120 mg/l, Brachydanio rerio (OECD 203; ISO 7346; 92/69/EEC, C.1, static)

Nominal concentration.



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Information on: Acetic acid, oxo-, sodium salt, reaction products with ethylenediamine and phenol, iron sodium salts

Aquatic invertebrates:

EC50 (48 h) > 120 mg/l, Daphnia magna (OECD Guideline 202, part 1, static)

Nominal concentration.

Information on: Acetic acid, oxo-, sodium salt, reaction products with ethylenediamine and phenol, iron sodium salts

Aquatic plants:

EC50 (72 h) > 294 mg/l (growth rate), Desmodemus subspicatus (OECD Guideline 201, static)

The statement of the toxic effect relates to the analytically determined concentration.

Information on: Acetic acid, oxo-, sodium salt, reaction products with ethylenediamine and phenol, iron sodium salts

Microorganisms/Effect on activated sludge:

EC10 (3 h) 450 mg/l, activated sludge, domestic (OECD Guideline 209, aquatic)

Nominal concentration.

Information on: Acetic acid, oxo-, sodium salt, reaction products with ethylenediamine and phenol, iron sodium salts

Chronic toxicity to fish:

Study scientifically not justified.

Information on: Acetic acid, oxo-, sodium salt, reaction products with ethylenediamine and phenol, iron sodium salts

Chronic toxicity to aquatic invertebrates:

No observed effect concentration (21 d) 320 mg/l, Daphnia magna (OECD Guideline 211, semistatic)

The product has not been tested. The statement has been derived from substances/products of a similar structure or composition. Nominal concentration.

Information on: Acetic acid, oxo-, sodium salt, reaction products with ethylenediamine and phenol, iron sodium salts

Soil living organisms:

No observed effect concentration (14 d) 1.600 mg/kg, Eisenia foetida (OECD Guideline 207, artificial soil)

The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Information on: Acetic acid, oxo-, sodium salt, reaction products with ethylenediamine and phenol, iron sodium salts

Terrestrial plants:

Study does not need to be conducted.

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Persistence and degradability

Information on: Acetic acid, oxo-, sodium salt, reaction products with ethylenediamine and phenol, iron sodium salts

Assessment biodegradation and elimination (H₂O):

Not readily biodegradable (by OECD criteria). Poorly biodegradable.

Information on: Acetic acid, oxo-, sodium salt, reaction products with ethylenediamine and phenol, iron sodium salts

Elimination information:

10 - 20 % DOC reduction (28 d) (OECD 301 A (new version)) (aerobic, activated sludge, domestic)

Assessment of stability in water:

According to structural properties, hydrolysis is not expected/probable.

Bioaccumulative potential

Information on: Acetic acid, oxo-, sodium salt, reaction products with ethylenediamine and phenol, iron sodium salts

Assessment bioaccumulation potential:

Because of the n-octanol/water distribution coefficient (log Pow) accumulation in organisms is not to be expected.

Mobility in soil

Information on: Acetic acid, oxo-, sodium salt, reaction products with ethylenediamine and phenol, iron sodium salts

Assessment transport between environmental compartments:

Adsorption in soil: Adsorption to solid soil phase is not expected.

Results of PBT and vPvB assessment

According to Annex XIII of Regulation (EC) No.1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH): The product does not fulfill the criteria for PBT (Persistent/bioaccumulative/toxic) and vPvB (very persistent/very bioaccumulative).

Other adverse effects

The product does not contain substances that are listed in Regulation (EC) 1005/2009 on substances that deplete the ozone layer.

Additional information

Add. remarks environm. fate & pathway:

Treatment in biological waste water treatment plants has to be performed according to local and administrative regulations.

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13. Disposal Considerations

Waste treatment methods

Must be disposed of or incinerated in accordance with local regulations.

Contaminated packaging:

Uncontaminated packaging can be re-used.

Packs that cannot be cleaned should be disposed of in the same manner as the contents.

14. Transport Information

Land transport

ADR

	Not classified as a dangerous good under transport regulations
UN number:	Not applicable
UN proper shipping name:	Not applicable
Transport hazard class(es):	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable
Special precautions for user	None known

RID

	Not classified as a dangerous good under transport regulations
UN number:	Not applicable
UN proper shipping name:	Not applicable
Transport hazard class(es):	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable
Special precautions for user	None known

Inland waterway transport

ADN

	Not classified as a dangerous good under transport regulations
UN number:	Not applicable
UN proper shipping name:	Not applicable
Transport hazard class(es):	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable

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Special precautions for user: None known

Transport in inland waterway vessel
 Not evaluated

Sea transport

IMDG

	Not classified as a dangerous good under transport regulations
UN number:	Not applicable
UN proper shipping name:	Not applicable
Transport hazard class(es):	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable
Special precautions for user:	None known

Air transport

IATA/ICAO

	Not classified as a dangerous good under transport regulations
UN number:	Not applicable
UN proper shipping name:	Not applicable
Transport hazard class(es):	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable
Special precautions for user:	None known

UN number

See corresponding entries for "UN number" for the respective regulations in the tables above.

UN proper shipping name

See corresponding entries for "UN proper shipping name" for the respective regulations in the tables above.

Transport hazard class(es)

See corresponding entries for "Transport hazard class(es)" for the respective regulations in the tables above.

Packing group

See corresponding entries for "Packing group" for the respective regulations in the tables above.

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Environmental hazards

See corresponding entries for "Environmental hazards" for the respective regulations in the tables above.

Special precautions for user

See corresponding entries for "Special precautions for user" for the respective regulations in the tables above.

Transport in bulk according to Annex II of MARPOL and the IBC Code

Regulation:	Not evaluated
Shipment approved:	Not evaluated
Pollution name:	Not evaluated
Pollution category:	Not evaluated
Ship Type:	Not evaluated

15. Regulatory Information

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

If other regulatory information applies that is not already provided elsewhere in this safety data sheet, then it is described in this subsection.

16. Other Information

This product is of industrial quality and unless otherwise specified or agreed intended exclusively for industrial use. This includes the mentioned and recommended usage. Any other intended applications should be discussed with the manufacturer. In particular this concerns the application for products that are the object of special standards and regulations.

The data contained in this safety data sheet are based on our current knowledge and experience and describe the product only with regard to safety requirements. This safety data sheet is neither a Certificate of Analysis (CoA) nor technical data sheet and shall not be mistaken for a specification agreement. Identified uses in this safety data sheet do neither represent an agreement on the corresponding contractual quality of the substance/mixture nor a contractually designated use. It is the responsibility of the recipient of the product to ensure any proprietary rights and existing laws and legislation are observed.

Vertical lines in the left hand margin indicate an amendment from the previous version.