

Material safety data sheet
according to 1907/2006/EC, Article 31

Printing date: September 29, 2016

Revision: 29.09.2016

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

1.1 Product identifier

Trade name:
Nano-Goethite

MSDS number:
Not available

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

Application of the substance / the preparation

Reagent for the stimulation of biodegradation of organic groundwater contaminants and for the adsorption of heavy metals in groundwater aquifers

If applicable, uses advised against

BTEX, PAH and heavy metals contamination of groundwater

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier:

Further information obtainable from:
Rainer.Meckenstock@uni-due.de

1.4 Emergency telephone number

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Section 2: Hazard identification

2.1 Classification of the substance or mixture

**Classification according to Directive 67/548/EEC or
Directive 1999/45/EC**

GHS07

2.2 Label elements

Labelling according to EU guidelines:

H315-H319-H335; P261-P305 + P351 + P338

Risk phrases:

- 36/37/38

Safety phrases:

- 26-36

2.3 Other hazards

Results of PBT and vPvB assessment

PBT:

This material does not meet the criteria for PBT or vPvB substances

vPvB:

This material does not meet the criteria for PBT or vPvB substances

Others:

None

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Section 3: Composition/information on ingredients

3.1 Chemical characterization: Mixtures

Description:

1309-37-1

CAS#:

Iron Oxide (Goethite)

1310-14-1

FeOOH

Organic Coating

1415-93-6

No chemical formula available, natural organic matter polymer

Dangerous components:

None.

Section 4: First aid measures

4.1 Description of first aid measures

General information:

No special measures required.

After inhalation:

Move to fresh air in case of accidental inhalation. Consult medical doctor in case of further health issues.

After skin contact:

Wash skin with water.

After eye contact:

Flush eyes with water, remove contact lenses. Consult medical doctor.

After swallowing:

Rinse mouth. Consult medical doctor.

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4.2 Most important symptoms and effects, both acute and delayed

No symptoms available.

4.3 Indication of any immediate medical attention and special treatment needed

No treatment indicated.

Section 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing agents:

Compound exists as 90% aqueous solution – not flameable.

For safety reasons unsuitable extinguishing agents:

none

5.2 Special hazards arising from the substance or mixture

none

Protective equipment:

none

Section 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Avoid inhalation

Wear protective gloves and goggles

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6.2 Environmental precautions

Avoid accidental spilling in surface waters.
Might cause clogging water drains.

6.3 Methods and material for containment and cleaning up

Avoid accidental drying by water evaporation.
Store cool and in the dark in a closed vessel

6.4 Reference to other sections

None

Section 7: Handling and storage

7.1 Precautions for safe handling

Information for safe handling:
No special measurements required.

Information about fire - and explosion protection:
Not flameable.

7.2 Conditions for safe storage, including any incompatibilities

Storage:

Requirements to be met by storerooms and receptacles:
Tightly sealed. Avoid accidental evaporation of medium water.

Information about storage in one common storage facility:
Store cool and in the dark

Further information about storage conditions:
None.

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7.3 Specific end use(s)

Apart from the uses in section 1.2, no other specific uses are stipulated.

Additional information about design of technical facilities:

None

Section 8: Exposure controls/personal protection

8.1 Control parameters

Additional information about design of technical system:

Not applicable.

Ingredients with limit values that require monitoring at the workplace:

Not applicable.

Additional information:

Not applicable.

8.2 Exposure controls

Personal protective equipment:

General protective and hygienic measures:

Wear gloves and protective goggles. Wear dirt suit to protect clothes from iron staining.

Respiratory protection:

Not required

Protection of hands:

Wear protective gloves

Eye protection:

Wear protective goggles

Body protection:

Not required

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Section 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

General Information

Appearance:

Form:

Aqueous suspension

Colour:

Brown

Odour:

None

Change in condition

Melting point/Melting range:

Not available

Boiling point/Boiling range:

100 °C

Sublimation temperature / start:

Not available

Flash point:

Not available

Flammability (solid, gaseous):

None.

Self-igniting:

None

Decomposition temperature:

Not available

Danger of explosion:

None

Vapor pressure:

Not available

Density:

1200 kg/m³

Bulk density:

Not available

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Solubility in / Miscibility with water:
Yes

9.2 Other information

pH ~ 8.0
Particle size [nm] 400

Section 10: Stability and reactivity

10.1 Reactivity

Reduced biologically to Fe²⁺ via microbial iron reduction during contaminant degradation and/ or adsorption of heavy metals

10.2 Chemical stability

Thermal decomposition / conditions to be avoided:
None

10.3 Possibility of hazardous reactions

None

10.4 Conditions to avoid

Drying by accidental evaporation

10.5 Incompatible materials

No further information available.

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10.6 Hazardous decomposition products

None.

Section 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity:

Primary irritant effect:

on the skin:

No information available.

on the eye:

No information available.

Sensitization:

No information available.

Other information (about experimental toxicology):

No information available.

Subacute to chronic toxicity:

No information available.

Additional toxicological information:

No information available.

Section 12: Ecological information

No harmful effects known so far.

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Section 13: Disposal information

13.1 Waste treatment methods

Recommendation

No special treatment required.

European waste catalogue

Not applicable.

Uncleaned packaging:

Not applicable.

Recommendation:

None.

Section 14: Transport information

No special treatment required.

Section 15: Regulatory information

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

Labelling according to EU guidelines:

Not applicable

15.2 Chemical safety assessment

Research level only – no safety assessment required so far.

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Section 16: Other information

None