ENVIFER Str. 1/7

Release date: 6. 1. 2012 Revision date: 21. 11. 2014 Print date: 18.04.2016

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Substance name: Potassium ferrate (VI)

Trade name: ENVIFER

EC No.:

Reach registration number: A registration number is not available for this substance as the substance

or its uses are exempted from registration, the annual tonnage does not

require a registration or the registration is envisaged for a later

registration deadline.

CAS-No.: Reaction mass of 13718-66-6 and 12160-44-0

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

Identified uses: Elimination and removing of organic compound, arsenic, selenium and other

contaminants from wastewaters.

1.3 Details of the supplier of the Safety Data Sheet

Supplier: NANO IRON, s.r.o.
 Street address: Štefánikova 116

- Country ID/Postcode/Place: (CZ) Czech Republic/66461/Rajhrad - Telephone number/Fax: +420 513 033 633/ +420 547 230 212

E-mail address: info@nanoiron.cz
 National contact: +420 513 033 633
 Identification number: 28298055

1.4 Emergency telephone number: +420 224 919 293 or +420 224 915 402 (non-stop medical service), TIS Praha,

Na Bojišti 1, 128 08 Prague 2. Czech republic.

2. HAZARDS IDENTIFICATION

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [EU-GHS/CLP]

Oxidizing solids (Category 2)

Classification according to EU Directives 67/548/EEC or 1999/45/EC

Contact with combustible material may cause fire.

2.2 Label elements

Labelling according Regulation (EC) No 1272/2008 [CLP]

Pictogram



Signal word

Danger

Hazard statement(s)

H272 May intensify fire; oxidiser.

Precautionary statement(s)

P220 Keep/Store away from clothing/ combustible materials.

P232 Protect from moisture.

P233 Keep container tightly closed.

270 Do not eat, drink or smoke when using this product

Supplemental Hazard

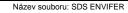
Statements

None

According to European Directive 67/548/EEC as amended.

Hazard symbol(s)







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R-phrase(s)

R 8 Contact with combustible material may cause fire.

S-phrase(s)

S17 Keep away from combustible material.

S36 Wear suitable protective clothing.

2.3 Other hazards - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Formula: K2FeO4

Molecular Weight: 198,04 g/mol

4. FIRST AID MEASURES



4.1 Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Flush eyes with water as a precaution.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

4.3 Indication of any immediate medical attention and special treatment needed

No data available

5. FIRE-FIGHTING MEASURES



5.1 Extinguishing media

Suitable extinguishing media



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Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture

Potassium oxides, Iron oxides

5.3 Advice for firefighters

Wear self-contained breathing apparatus for fire-fighting if necessary.

5.4 Further information

Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate person to safe areas.

6.2 Environmental precautions

Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Sweep up and shovel. Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Provide appropriate exhaust ventilation at places where dust is formed. Keep away from sources of ignition

- No smoking. Keep away from heat and sources of ignition. Normal measures for preventive fire protection.

Do not eat, drink or smoke during work. Before break and after work, wash your hands and take off contaminated clothing. Store this clothing separately.

7.2 Conditions for safe storage, including any incompatibilities

Store in cool place. Keep container tightly closed in a dry and well-ventilated place.

Store under inert gas. Sensitive to moisture.

7.3 Specific end uses

No data available

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

8.2 Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection

Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Body Protection



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Impervious clothing, the type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a) Appearance Form: powde Colour: powde

b) Odour no data available c) Odour Threshold: no data available d) pH no data available

e) Melting point/freezing point f) Boiling point and boiling range: Melting point/range: > 400 °C - lit. no data available

g) Flash point: no data available h) Evaporation rate: no data available i) Flammability (solid, gas): no data available j) Upper/lower flammability or explosive limits: no data available k) Vapour pressure: no data available I) Vapour density: no data available m) Relative density: no data available n) Solubility (ies): no data available o) Partition coefficient: n-octanol/water: no data available p) Auto-ignition temperature: no data available

q) Decomposition temperature: no data available r) Viscosity: no data available s) Explosive properties: no data available no data available no data available

t) Oxidizing properties: The substance or mixture is classified as oxidizing with the category 2.

9.2 Other information

No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity

No data available

10.2 Chemical stability

No data available

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

Avoid moisture

10.5 Incompatible materials

Organic materials, powdered metals

10.6 Hazardous decomposition products

Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

no data available

Skin corrosion/irritation

no data available

Serious eye damage/eye irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity



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no data available

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as

probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

Potential health effects

Inhalation: May be harmful if inhaled. May cause respiratory tract irritation.

Ingestion: May be harmful if swallowed.

Skin: May be harmful if absorbed through skin. May cause skin irritation.

Eyes: May cause eye irritation.

Signs and Symptoms of Exposure

To the best of our knowledge, the chemical, physical, and toxicological properties have not been

thoroughly investigated.

Additional Information

RTECS: Not available

12. ECOLOGICAL INFORMATION

12.1 Toxicity

No data available

12.2 Persistence and degradability

No data available

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

No data available

12.6 Other adverse effects

No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

14.1 UN number

ADR/RID: 1479 IMDG: 1479 IATA: 1479



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14.2 UN proper shipping name

ADR/RID: OXIDIZING SOLID, N.O.S. (Potassium ferrate(VI))
IMDG: OXIDIZING SOLID, N.O.S. (Potassium ferrate(VI))
IATA: Oxidizing solid, n.o.s. (Potassium ferrate(VI))

14.3 Transport hazard class(es)

ADR/RID: 5.1 IMDG: 5.1 IATA: 5.1

14.4 Packaging group

ADR/RID: II IMDG: II IATA: II

14.5 Environmental hazards

ADR/RID: yes IMDG Marine pollutant: yes IATA: no

14.6 Special precautions for user

No data available

15. REGULATORY INFORMATION

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture No data available

15.2 Chemical Safety Assessment

No data available

16. OTHER INFORMATION

16.1 The full text of R-phrases mentioned within point 2, paragraph 2.2

8 Contact with combustible material may cause fire.

16.2 Explanatory notes

Material Safety Data Sheet (MSDS) had been prepared according to Act No. 356/2003 Coll., Public notice No. 231/2004 Coll. and according to the requirements of the European Parliament and Council regulation No. 1907/2006, on registration, evaluation, authorization and restriction of chemicals and on European Chemicals Agency establishing - Title IV, Article 31, Annex II (material safety data sheets preparation instructions). According to the Czech Ministry of Environment opinion, MSDS prepared this way is considered to be in accordance with EC Regulation No. 1907/2006 until the Act, which incorporate this EC Regulation No. 1907/2006 into Czech legislation, became into force.

The products classification was carried out via conventional calculation method according to public notice No. 232/2004 Coll., as amended. This was based on data provided by manufacturers or importers of individual components within their material safety data sheets.

Ecotoxicological and toxicological data were obtained from ESIS (European Chemical Substances Information System), specifically from IUCLID (International Uniform Chemical Information Data Base). The database lists the properties of substances that are classified in Annex I of Directive 67/548/EEC, as well as substances for substances without this classification. For additional information was also used the chemical database of Merck company.

Material safety data sheet contains necessary data for ensuring of health protection at work and environmental protection. These data correspond to the current state of knowledge and experience and are in compliance with applicable laws and regulations. They cannot be considered as a guarantee for appropriateness and usability for particular application.

Material Safety Data Sheet is a property of private or legal person referred in section 1, paragraph 1.3 and is protected by copyright. Any copying, distribution or sale without the owner's agreement is strictly prohibited.

16.3 Legislation

- The European Parliament and Council Regulation (EC) No. 1907/2006 REACH
- Act No. 371/2008 Coll., which amend Act No. 356/2003 Coll., on chemical substances and chemical preparations as amended
- Public notice No. 369/2005 Coll., which amend Public notice No. 232/2004 Coll., which implement certain provisions of
 the Act on chemical substances and chemical preparations and on certain acts amending relate to the classification,
 packaging and to labeling of hazardous chemicals and chemical preparations
- . Government decree No. 178/2001 Coll., which set the health protection conditions of workers at work
- Act No. 185/2001 Coll., on waste and on certain other acts amending, as amended
- Ministry of Environment public notice No. 381/2001 Coll., which establish the Waste Catalogue.
- Act No. 94/2004 Coll., which amend Act No. 477/2001 Coll., on packaging and on some acts amending (Act on packaging), as amended
- Act No. 254/2001 Coll., on waters and on certain other acts amending (Water Act)
- Act No. 258/2000 Coll., on the public health protection and on some related acts amending, as amended
- European Agreement about international transport of dangerous goods (ADR), announced under No. 64/1987 Coll., As amended
- Convention on International Transport (COTIF), announced under No. 8 / 1985 Coll., As amended
- Act No. 49/1997 Coll., on civil aviation and on amending and supplementing of Act No. 455/1991 Coll.
- Act No. 61/2000 Coll., on nautical navigation, as amended
- Act No. 86/2002 Coll., on Air protection, as amended
- Public notice No. 355/2002 Coll., which set emission limits and other operation conditions for other stationary sources of air pollution, which emit volatile organic compounds from processes employing organic solvents and from petrol storage and distribution



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Czech MSDS prepared by:

Translation into English by:

