

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

1.1 Product identifier

Abb HSF Fe Active Zinc Oxide

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

Relevant identified uses: removal of hydrogen sulfide from biogas, which is produced during anaerobic fermentation of sludge in municipal and agricultural sewage treatment plants, for desulphurization of landfill biogas, coke oven gas and gas synthesis.

Uses advised against: not determined.

1.3 Details of the supplier of the safety data sheet

Supplier: **Recynk Sp. z o.o.**
Address: 59-524 Pielgrzymka, Pielgrzymka 150a
Telephone/Fax: +48 76 877 51 09
E-mail address for a competent person responsible for sds: biuro@theta-doradztwo.pl
The product contact: pwgromadzki@gmail.com

1.4 Emergency telephone number

112

Section 2: Hazards identification

2.1 Classification of the substance or mixture

Aquatic Acute 1 H400 Very toxic to aquatic life.

Aquatic Chronic 1 H410 Very toxic to aquatic life with long lasting effects.

2.2 Label elements

Hazard pictograms and signal words



WARNING

Names of substances mentioned on label

None.

Hazard statements

H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements

P273 Avoid release to the environment.

P501 Dispose of contents/container to properly labeled containers for the selective collection of waste, emptied by an authorized company.

2.3 Other hazards

Mixture does not contain ingredients, which meet criteria for PBT or vPvB in accordance with Annex XIII of REACH Regulation.

Section 3: Composition/information on ingredients

3.2 Mixtures

Index number: 030-013-00-7 CAS number: 1314-13-2 EC number: 215-222-5 REACH registration number: substance exempted from registration according to article 2 p. 7d of REACH	zinc oxide Aquatic Acute 1 H400, Aquatic Chronic 1 H410 (M=1)	60%
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The product may contain traces of manganese for which work limits have been determined at EU level.
Full text of each relevant H phrase is given in section 16 of SDS.

Section 4: First aid measures

4.1 Description of first aid measures

Skin contact: take off contaminated clothes. Contaminated parts of the skin wash with plenty of water and soap. In case of disturbing symptoms, consult a doctor.

Eye contact: contaminated eyes rinse with water for 10-15 minutes. Avoid strong stream of water – risk of damage of the cornea. Protect non-irritated eye, remove contact lenses. In case of disturbing symptoms, contact an ophthalmologist.

Ingestion: do not induce vomiting. Rinse mouth with water. Never give anything by mouth to an unconscious person. Seek medical advice if disturbing symptoms occur, show label or container.

Inhalation: remove the victim to fresh air. Keep warm and calm. Consult a doctor, if disturbing symptoms occur.

4.2 Most important symptoms and effects, both acute and delayed

Eye contact: mechanical irritation, redness, lacrymation.

Skin contact: may cause irritation, redness, itching.

After dust entering into the mouth: may cause gastrointestinal tract irritation.

Inhalation: possible sore throat, cough, shortness of breath, irritation of the respiratory tract. Inhalation of oxide fumes may cause flu-like symptoms (metal fume fever). Within 24-48 hours there may be chills, fever, muscle aches, dry mouth and throat and headache. Symptoms subside after the expulsion of the substance from the body.

4.3 Indication of any immediate medical attention and special treatment needed

Physician makes a decision regarding further medical treatment after thoroughly examination of the injured.

Section 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media: sand, dry powder, water spray. Use extinguishing measures that are appropriate to the environment.

Unsuitable extinguishing media: do not use strong stream of water.

5.2 Special hazards arising from the substance or mixture

During combustion harmful gases may be produced. Do not inhale combustion products, it may cause health risk.

5.3 Advice for firefighters

The mixture is non-flammable. Personal protection typical in case of fire. Do not stay in the fire zone without self-contained breathing apparatus and protective clothing resistant to chemicals. Do not let extinguishing media to reach drainage system. Collect used extinguishing agents.

Section 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Limit the access for the outsiders into the breakdown area, until the suitable cleaning operations are completed. Ensure that effects of the breakdown are removed only by qualified personnel. Avoid eyes and skin contact. Avoid dust forming and inhalation. Ensure adequate ventilation. Prevent electrostatic charging. Use non-sparking tools.

6.2 Environmental precautions

In case of release of large amounts of the product, it is necessary to take appropriate steps to prevent it from spreading into the environment. Notify relevant emergency services.

6.3 Methods and material for containment and cleaning up

Released product collect mechanically into labeled containers. Moisten the product or use industrial vacuum cleaner to prevent dust spreading. Treat collected material as a waste. Clean and ventilate contaminated place.

6.4 Reference to other sections

Appropriate conduct with waste product – section 13. Personal protection equipment – section 8.

Section 7: Handling and storage

7.1 Precautions for safe handling

Handle in accordance with good occupational hygiene and safety practices. Avoid eyes and skin contact. Avoid dust forming and inhalation. Before break and after work wash hands. Ensure adequate ventilation. Prevent electrostatic charging. Ground used equipment. Use non-sparking tools.

7.2 Conditions for safe storage, including any incompatibilities

Store in a dry, cool place in original packaging. Do not store together with food, animal feed and drinking water. Do not store with incompatible materials (see subsection 10.5). Protect from water and moisture.

7.3 Specific end use(s)

No information about uses other than mentioned in subsection 1.2.

Section 8: Exposure controls/personal protection

8.1 Control parameters

Chemical agent	Limit values				Notation
	8 hours		Short-term		
	mg/m ³	ppm	mg/m ³	ppm	
Manganese and inorganic manganese compounds(as manganese) CAS: -, EC: -	0,2 (Inhalable fraction)	-	-	-	-
	0,05 (Respirable fraction)	-	-	-	-

(Legal Basis: Commission Directive 2006/15/EC, 2000/39/EC, 2009/161/EC, 2017/164/EU).

Please check any national occupational exposure limit values in your country.

Recommended control procedures

Procedures Concerning the control over the dangerous components concentrations in the air and control over the air quality in the workplace - if they are available and Justified for the position - in Accordance with the European Standards, with the conditions within the exposure place and a proper test methodology adapted to the working conditions.

8.2 Exposure controls

Observe good occupational hygiene and safety practices. Do not eat, drink or smoke when using the product. Avoid eyes and skin contamination. Avoid dust forming and inhalation. Ensure adequate general and/or local ventilation.

Hand and body protection

Wear protective gloves, if necessary. Kind, thickness and breakthrough of gloves select at the workplace individually. Gloves made of cotton, leather or rubber are recommended. Wear protective clothing.

The material that the gloves are made of must be impenetrable and resistant to the product's effects. The selection of material must be performed with consideration of breakthrough time, penetration speed and degradation. Moreover, the selection of proper gloves depends not only on the material, but also on other quality features and changes depending on the manufacturer. The producer should provide detailed information regarding the exact breakthrough time. This information should be followed.

Eye protection

Safety glasses are recommended.

Respiratory protection

In cases of air pollution with dust in concentrations exceeding their normative values, use filtering equipment selected depending on the fold exceeding the limit value (P1 / used at a particle concentration not greater than 4 x limit value, P2 / used at a particle concentration not greater than 10 x limit value, P3 / apply at a concentration of not more than 30 x limit value).

Personal protective equipment must meet requirements of regulation 2016/425/EU. Employer is obliged to ensure equipment adequate to activities carried out, with quality demands, cleaning and maintenance.

Thermal hazard

Not applicable.

Environmental exposure controls

Avoid environment contamination, do not empty into drains. Possible emissions from the ventilation systems and processing equipment should be controlled in order to determinate their compatibility with environmental protection regulations.

Section 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

physical state:	solid/pellets
colour:	brick red
odour:	odourless
odour threshold:	not determined
pH (water solution 10 g/l; 20°C):	not applicable
melting point/freezing point:	1 970 – 1 975°C (for zinc oxide)
initial boiling point and boiling range:	not applicable
flash point:	not applicable
evaporation rate:	not applicable
flammability (solid, gas):	not applicable, non-flammable product
upper/lower flammability or explosive limits:	not applicable
vapour pressure:	not applicable
vapour density:	not applicable
density:	not determined
solubility(ies) in water:	insoluble in water
partition coefficient: n-octanol/water: (log Pow):	not applicable
auto-ignition temperature:	not applicable
decomposition temperature:	not applicable
explosive properties:	not display
oxidising properties:	not display
viscosity:	not applicable, product is solid

9.2 Other information

bulk density:	600 kg/m ³
specific surface area bet:	> 150 m ² /g

Section 10: Stability and reactivity

10.1 Reactivity

The product is less reactive. Does not undergo hazardous polymerization. See also subsections 10.3 and 10.5

10.2 Chemical stability

The product is stable under normal conditions of handling and storage.

10.3 Possibility of hazardous reactions

Risk of explosion in contact with magnesium. The substance can react dangerously with chlorinated rubber and linseed oil.

10.4 Conditions to avoid

Moisture, high temperature.

10.5 Incompatible materials

Water, alkali metals from group I and II of the periodic table, acids and bases.

10.6 Hazardous decomposition products

Not known.

Section 11: Toxicological information

11.1 Information on toxicological effects

Toxicity of components

zinc oxide [CAS 1314-13-2]

LD₅₀ (oral, rat): > 2 000 mg/kg

LD₅₀ (oral, mouse): > 5 000 mg/kg

LC₅₀ (inhalation, rat): > 5,7 mg/l/4h

LD₅₀ (skin, rabbit): > 2 000 mg/kg

Toxicity of mixture

Acute toxicity

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

Skin corrosion/irritation

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

Serious eye damage/irritation

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

Respiratory or skin sensitization

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

Due to the solid form, the product does not pose a threat after aspiration.

Section 12: Ecological information

12.1 Toxicity

Toxicity of components

zinc oxide [CAS 1314-13-2]

Toxicity to daphnia EC₅₀ > 1 000 mg/l/48h (*Daphnia magna*)

Toxicity to algae EC₅₀ 0,17 mg/l/72h (*Desmodesmus subspicatus*)

Toxicity to fish LC₅₀ 1,1 mg/l/96h (*Oncorhynchus mykiss*)

M factor = 1

Toxicity of mixture

The mixture is very toxic to aquatic life with long lasting effects.

12.2 Persistence and degradability

Not determined for inorganic substances.

12.3 Bioaccumulative potential

The product does not show a bioaccumulative potential.

12.4 Mobility in soil

The product is not mobile in soil and water.

12.5 Results of PBT and vPvB assessment

The mixture does not contain ingredients, which meet criteria for PBT or vPvB in accordance with Annex XIII of REACH Regulation.

12.6 Other adverse effects

This product has no influence on the global warming or the ozone layer depletion.

Section 13: Disposal considerations

13.1 Waste treatment methods

Disposal methods for the substance: do not deposit with household waste. Do not empty into drains. Disposal in accordance with the local legislation. Waste code should be assigned in place of formation.

Disposal methods for used packing: reuse/recycling/liquidation of empty containers dispose in accordance with the local legislation.

Legal basis: Directive 2008/98/EC as amended, 94/62/EC as amended.

Section 14: Transport information

14.1 UN number

UN 3077

14.2 UN proper shipping name

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. [ZINC OXIDE]

14.3 Transport hazard class(es)

9

14.4 Packing group

III

14.5 Environmental hazards

The product is classified as dangerous for the environment according to criteria contained in the transport rules.

14.6 Special precautions for user

If any substances have leaked from the package and scattered inside the vehicle or container, it is time to thoroughly cleaned and, if necessary, disinfected or decontaminated, the vehicle or container can not be reused. All other goods and articles carried in the same vehicle or container shall be examined for possible contamination. Use personal protective equipment specified in section 8



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

Not applicable.

Section 15: Regulatory information

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

Commission Regulation (EU) 2015/830 of 28 May 2015 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

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, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 (Text with EEA relevance) as amended.

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH), establishing a 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.

Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives as amended.

European Parliament and Council Directive 94/62/EC of 20 December 1994 on packaging and packaging waste as amended.

ADR European Agreement concerning the international carriage of dangerous goods by road.

Commission Directive 2006/15/EC of 7 February 2006 establishing a second list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC and amending Directives 91/322/EEC and 2000/39/EC.

Commission Directive 2000/39/EC of 8 June 2000 establishing a first list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work.

Commission Directive 2009/161/EU of 17 December 2009 establishing a third list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC and amending Commission Directive 2000/39/EC.

Commission Directive (EU) 2017/164 of 31 January 2017 establishing a fourth list of indicative occupational exposure limit values pursuant to Council Directive 98/24/EC, and amending Commission Directives 91/322/EEC, 2000/39/EC and 2009/161/EU.

Regulation (EU) 2016/425 of the European Parliament and of the Council of 9 March 2016 on personal protective equipment and repealing Council Directive 89/686/EEC.

15.2 Chemical safety assessment

The chemical safety assessment is not required for mixtures.

Section 16: Other information

Full text of indicated H phrases mentioned in section 3

H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

Abbreviations and acronyms

PBT	Persistent, Bioaccumulative and Toxic substance
vPvB	very Persistent, very Bioaccumulative substance
Aquatic Chronic 1	Hazardous to the aquatic environment, chronic toxicity category 1
Aquatic Acute 1	Hazardous to the aquatic environment, acute toxicity category 1

Trainings

Before commencing work with the product, the user should learn the Health & Safety regulations, regarding handling chemicals, and in particular, undergo a proper workplace training. People associated with the transport of hazardous materials according to ADR should be adequately trained to perform their duties (general training, bench and safety).



SAFETY DATA SHEET

Date of issue: 16.09.2019

Version: 1.0/EN

Key literature references and data sources

This SDS was prepared on the basis of producer's data as well as our knowledge and experience, taking into account current legislation.

Classification and procedures used to classify the mixture in accordance with Reg. EC 1272/2008 as amended

Environmental hazards – calculation method

Additional information

Composed by: mgr inż. Kinga Wasilewska (on the basis of producer's data).

Safety Data Sheet made by: „THETA“ Technical Consulting

The information above is based on a current available data concerning the product, but also on the experience and knowledge in this field of the producer. They are neither a quality description of the product nor a guarantee of particular features. They are to be treated as aid to safety in transport, storage and usage of the product. That does not free the user from the responsibility of improper usage of the information above and also of improper compliance with the law norms in the field.