SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

STANDART Zinc flake AT Zinc Powder

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

1.1 Product identifier
   Trade name : STANDART Zinc flake AT Zinc Powder
   Product code : 049601K50 049601K50
   Index-No. : 030-001-00-1

1.2 Relevant identified uses of the substance or mixture and uses advised against
   This information is not available.

1.3 Details of the supplier of the safety data sheet
   Company : ECKART GmbH
              Guentersthal 4
              91235 Hartenstein
   Telephone : +499152770
   Telefax : +499152777008
   E-mail address of person responsible for the SDS : msds.eckart@altana.com

1.4 Emergency telephone number
   GBK Gefahrgut Buro GmbH, Ingelheim, Germany:
   From outside US : (001) 352-323-3500
   (First call in English, response in your language is possible)
   US & Canada (toll free) : 1-800-5355-053

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
   Classification (REGULATION (EC) No 1272/2008)
   Acute aquatic toxicity, Category 1 H400: Very toxic to aquatic life.
   Chronic aquatic toxicity, Category 1 H410: Very toxic to aquatic life with long lasting effects.

2.2 Label elements
   Labelling (REGULATION (EC) No 1272/2008)
STANDART Zinc flake AT Zinc Powder

Hazard pictograms:

Signal word: Warning

Hazard statements: H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements:

Prevention: P273 Avoid release to the environment.
Response: P391 Collect spillage.
Disposal: P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.1 Substances

Substance name: zinc powder - zinc dust (stabilized)
Index-No.: 030-001-00-1
EC-No.: 231-175-3

Hazardous components

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>EC-No.</th>
<th>Classification REGULATION (EC) No 1272/2008</th>
<th>Concentration (% w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>zinc powder - zinc dust (stabilized)</td>
<td>7440-66-6</td>
<td>231-175-3</td>
<td>Aquatic Acute 1; Aquatic Chronic 1;</td>
<td>&gt;= 50 - &lt;= 100</td>
</tr>
<tr>
<td></td>
<td>030-001-00-1</td>
<td>01-2119467174-37</td>
<td>H400; H410</td>
<td></td>
</tr>
</tbody>
</table>

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice: Move the victim to fresh air.
Remove from exposure, lie down.
No hazards which require special first aid measures.

If inhaled:
- If unconscious, place in recovery position and seek medical advice.
- If symptoms persist, call a physician.

In case of skin contact:
- Wash off immediately with soap and plenty of water.

In case of eye contact:
- Flush eyes with water as a precaution.
- Remove contact lenses.
- Keep eye wide open while rinsing.
- If eye irritation persists, consult a specialist.

If swallowed:
- Keep respiratory tract clear.
- Do not give milk or alcoholic beverages.
- Never give anything by mouth to an unconscious person.
- If symptoms persist, call a physician.

4.2 Most important symptoms and effects, both acute and delayed
None known.

4.3 Indication of any immediate medical attention and special treatment needed
This information is not available.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media:
- Dry sand
- Special powder against metal fire

Unsuitable extinguishing media:
- Carbon dioxide (CO2)
- Water

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting:
- Contact with water liberates extremely flammable gas (hydrogen).
  Do not allow run-off from fire fighting to enter drains or water courses.

5.3 Advice for firefighters

Special protective equipment for firefighters:
- Wear self-contained breathing apparatus for firefighting if necessary.

Further information:
- Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions: Use personal protective equipment. Evacuate personnel to safe areas. Avoid dust formation.

6.2 Environmental precautions

Environmental precautions: Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up: Do not flush with water. Use mechanical handling equipment. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For personal protection see section 8.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling: Avoid creating dust. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Dispose of rinse water in accordance with local and national regulations.

Advice on protection against fire and explosion: Fine dust dispersed in air may ignite. Keep away from heat and sources of ignition. No smoking. Take measures to prevent the build up of electrostatic charge. Earthing of containers and apparatuses is essential. Use explosion-proof equipment.

Normal measures for preventive fire protection.
**Hygiene measures**: General industrial hygiene practice. Do not smoke. Wash hands before breaks and at the end of workday. Keep away from food and drink. Keep away from tobacco products.

Wash hands before breaks and at the end of workday.

**Dust explosion class**: St2

7.2 **Conditions for safe storage, including any incompatibilities**

**Requirements for storage areas and containers**:

- Store in original container. Keep container tightly closed in a dry and well-ventilated place. Keep containers tightly closed in a cool, well-ventilated place. Keep away from sources of ignition - No smoking.

- Keep container tightly closed in a dry and well-ventilated place. Electrical installations / working materials must comply with the technological safety standards.

**Further information on storage conditions**:

- Protect from humidity and water.

**Further information on storage stability**:

- No decomposition if stored and applied as directed.

7.3 **Specific end use(s)**

This information is not available.

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**SECTION 8: Exposure controls/personal protection**

8.1 **Control parameters**

Contains no substances with occupational exposure limit values.

**Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006**:

<table>
<thead>
<tr>
<th>Substance name</th>
<th>End Use</th>
<th>Exposure routes</th>
<th>Potential health effects</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>zinc powder - zinc dust (stabilized)</td>
<td>Workers</td>
<td>Inhalation</td>
<td>long term – systemic effects</td>
<td>5 mg/m3</td>
</tr>
<tr>
<td></td>
<td>Workers</td>
<td>Skin contact</td>
<td>long term – systemic effects</td>
<td>83 mg/kg</td>
</tr>
<tr>
<td>Consumers</td>
<td>Ingestion</td>
<td>long term – systemic effects</td>
<td>0,83 mg/kg</td>
<td></td>
</tr>
<tr>
<td>Consumers</td>
<td>Skin contact</td>
<td>long term – systemic effects</td>
<td>83 mg/kg</td>
<td></td>
</tr>
<tr>
<td>Consumers</td>
<td>Inhalation</td>
<td>long term – systemic effects</td>
<td>2,5 mg/m3</td>
<td></td>
</tr>
<tr>
<td>Fatty acids, C16-18</td>
<td>Workers</td>
<td>Skin contact</td>
<td>long term – systemic effects</td>
<td>10 mg/kg</td>
</tr>
<tr>
<td></td>
<td>Workers</td>
<td>Inhalation</td>
<td>long term – systemic effects</td>
<td>17,632 mg/m3</td>
</tr>
</tbody>
</table>
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Version 2.4  Revision Date: 12.03.2018  SDS Number: 102000002493  Print Date: 19.11.2018  Date of first issue: 13.05.2014

<table>
<thead>
<tr>
<th>Consumers</th>
<th>Skin contact</th>
<th>long term – systemic effects</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumers</td>
<td>Inhalation</td>
<td>long term – systemic effects</td>
<td>4,348 mg/m³</td>
</tr>
<tr>
<td>Consumers</td>
<td>Oral</td>
<td>long term – systemic effects</td>
<td>2,5 mg/kg</td>
</tr>
</tbody>
</table>

**Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:**

<table>
<thead>
<tr>
<th>Substance name</th>
<th>Environmental Compartment</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>zinc powder - zinc dust (stabilized)</td>
<td>Fresh water</td>
<td>0,0206 mg/l</td>
</tr>
<tr>
<td></td>
<td>Fresh water sediment</td>
<td>117,8 mg/kg</td>
</tr>
<tr>
<td></td>
<td>Marine water</td>
<td>0,0061 mg/l</td>
</tr>
<tr>
<td></td>
<td>Soil</td>
<td>35,6 mg/kg</td>
</tr>
<tr>
<td></td>
<td>Marine sediment</td>
<td>56,5 mg/kg</td>
</tr>
</tbody>
</table>

8.2 Exposure controls

**Personal protective equipment**

Eye protection : Goggles

Safety glasses

Hand protection
Material : Leather

Remarks : Leather gloves The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Recommended preventive skin protection The exact break through time can be obtained from the protective glove producer and this has to be observed. The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Skin and body protection : Dust impervious protective suit
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Respiratory protection : Use suitable breathing protection if workplace concentration requires.
Respirator with a dust filter
P1 filter

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance : solid

Colour : grey
Odour: odourless
Odour Threshold: No data available
pH: No data available
Freezing point: No data available
Boiling point/boiling range: No data available
Flash point: No data available
Evaporation rate: No data available
Flammability (solid, gas): No data available
Self-ignition: No data available
Auto-ignition temperature: No data available
Smoldering temperature: No data available
Decomposition temperature: No data available
Explosive properties: No data available
Oxidizing properties: No data available
Upper explosion limit / Upper flammability limit: No data available
Lower explosion limit / Lower flammability limit: > 200 g/m³
Vapour pressure: No data available
Relative vapour density: No data available
Relative density: No data available
Density: No data available
Bulk density: No data available
Solubility(ies)
   Water solubility: insoluble
Solubility in other solvents: No data available
Partition coefficient: n-octanol/water: No data available
STANDART Zinc flake AT Zinc Powder

Decomposition temperature : No data available
Viscosity, dynamic : No data available
Viscosity, kinematic : No data available
Flow time : No data available

9.2 Other information
Dust deflagration index (Kst) : > 200 - 300 m.b_/s
Dust explosion class : St2
Minimum ignition energy : > 10 mJ

SECTION 10: Stability and reactivity

10.1 Reactivity
No decomposition if stored and applied as directed.

10.2 Chemical stability
No decomposition if stored and applied as directed.

10.3 Possibility of hazardous reactions
Hazardous reactions : Reacts with alkalis, acids, halogenes and oxidizing agents.
Contact with acids and alkalis may release hydrogen.
Avoid dust clouds, they may form explosible dust-air-mixture.
Risk of dust explosion.

No decomposition if stored and applied as directed.

10.4 Conditions to avoid
Conditions to avoid : No data available

10.5 Incompatible materials
Materials to avoid : Acids
Bases
Oxidizing agents

10.6 Hazardous decomposition products
Contact with water or humid air : This information is not available.

Thermal decomposition : This information is not available.
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SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity
Not classified based on available information.

Components:

zinc powder - zinc dust (stabilized):

Acute oral toxicity: (Rat): > 2.000 mg/kg

Acute inhalation toxicity: LC50 (Rat): 5,41 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

Skin corrosion/irritation
Not classified based on available information.

Serious eye damage/eye irritation
Not classified based on available information.

Respiratory or skin sensitisation

Skin sensitisation
Not classified based on available information.

Respiratory sensitisation
Not classified based on available information.

Germ cell mutagenicity
Not classified based on available information.

Carcinogenicity
Not classified based on available information.

Reproductive toxicity
Not classified based on available information.

STOT - single exposure
Not classified based on available information.

STOT - repeated exposure
Not classified based on available information.

Aspiration toxicity
Not classified based on available information.

Further information

Product:
Remarks: No data available

Components:

zinc powder - zinc dust (stabilized):
SECTION 12: Ecological information

12.1 Toxicity

Components:
zinc powder - zinc dust (stabilized):

Ecotoxicology Assessment
Acute aquatic toxicity : Very toxic to aquatic life.
Chronic aquatic toxicity : Very toxic to aquatic life with long lasting effects.

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

Product:
Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Other adverse effects

Product:
Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Components:
zinc powder - zinc dust (stabilized):
Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

SECTION 13: Disposal considerations

European Waste Catalogue : 12 01 04 - non-ferrous metal dust and particles
European Waste Catalogue: 10 03 21 - other particulates and dust (including ball-mill dust) containing dangerous substances

13.1 Waste treatment methods

Product: The product should not be allowed to enter drains, water courses or the soil. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company. In accordance with local and national regulations.

Contaminated packaging: Empty remaining contents. Dispose of as unused product. Do not re-use empty containers. In accordance with local and national regulations.

SECTION 14: Transport information

14.1 UN number

ADR: UN 3077
IMDG: UN 3077
IATA: UN 3077

14.2 UN proper shipping name

ADR: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc powder, stabilized)
IMDG: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc powder, stabilized)
IATA: Environmentally hazardous substance, solid, n.o.s. (Zinc powder, stabilized)

14.3 Transport hazard class(es)

ADR: 9
IMDG: 9
IATA: 9

14.4 Packing group

ADR: Packing group: III
Classification Code: M7
Hazard Identification Number: 90
Labels: 9
IMDG
STANDART Zinc flake AT Zinc Powder

Packing group : III
Labels : 9
EmS Code : F-A, S-F
Remarks : IMDG Code segregation group 7 - Heavy metals and their salts

IATA (Cargo)
Packing instruction (cargo aircraft) : 956
Packing instruction (LQ) : Y956
Packing group : III
Labels : Miscellaneous Dangerous Goods

IATA (Passenger)
Packing instruction (passenger aircraft) : 956
Packing instruction (LQ) : Y956
Packing group : III
Labels : Miscellaneous Dangerous Goods

14.5 Environmental hazards

ADR
Environmentally hazardous : yes

IMDG
Marine pollutant : yes

IATA (Passenger)
Environmentally hazardous : yes

IATA (Cargo)
Environmentally hazardous : yes

14.6 Special precautions for user

Remarks : For single packagings <=5 L / 5 kg, or combination packagings containing inner packagings <= 5 L / 5 kg net per inner packaging, SV375 ADR, 2.10.2.7 IMDG-Code, A197 IATA-DGR may be applied.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code
Not applicable for product as supplied.

SECTION 15: Regulatory information

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

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59). : Not applicable
15.2 Chemical safety assessment

This information is not available.

SECTION 16: Other information

Full text of other abbreviations

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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