SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Zeochem Adsorbents, powder or granulate
(Zeolite, cuboidal, crystalline, synthetic, non-fibrous)

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

1.1. Product identifier

Product name: Zeochem Adsorbents, powder or granulate
(Zeolite, cuboidal, crystalline, synthetic, non-fibrous)

CAS-No.: 1318-02-1

Synonyms: Z3-xx, Z4-xx, Z5-xx, Z10-xx, 4A-xx, ESIxx, HYPxx, Purmol xx,
RD-xx, ZEOX xx, XX-GDG, ZA-xx, ZX-xx, ZEOflair 1000

The “xx” in the product names refer to additional alphanumeric codes representing different material grades

Product code: None.

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

Use of the Substance/Mixture: Desiccant
Adsorbent
Molecular sieves

1.3. Details of the supplier of the safety data sheet

Company/Undertaking Identification: Zeochem L.L.C.
1600 West Hill Street
Louisville, KY 40210
USA

Phone: +1 502 634 7600
Fax: +1 502 634 8133
E-Mail: info@zeochem.com

1.4. Emergency telephone number: +1 800 424 9300 (CHEMTREC US)
SECTION 2: Hazards identification

2.1. Classification of the substance or mixture according to the Globally Harmonized System

Specific target organ toxicity (single exposure, inhalation), Cat. 3, H335

Additional information

For the full text of the phrases mentioned in this Section, see Section 16.

2.2. Label elements

Signal Word

Warning

Hazard Statements

H335: May cause respiratory irritation.

Precautionary statements

P261: Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P271: Use only outdoors or in a well-ventilated area.
P304 + P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P312: Call a POISON CENTER/doctor if you feel unwell.
P403 + P233: Store in a well-ventilated place. Keep container tightly closed.
P405: Store locked up.
P501: Dispose of contents/ container to an approved waste disposal plant.

Supplemental information

All potential hazards are caused by the product's property to absorb water. Dried product can dehydrate humid body parts (eyes, mucus membranes, lungs) or irritate them by the heat generated by the adsorption, the latter also applies to wetted or sweaty skin. The product saturated with water has no dangerous properties other than mechanical irritation by powder or small particles.

Product identifier

Zeolite, CAS-No. 1318-02-1
Clay binder

2.3. Other hazards

No dangerous ingredients according to Regulation (EC) No. 1272/2008. The activated product generates much heat in contact with water.
SECTION 3: Composition/information on ingredients

3.2. Mixtures

<table>
<thead>
<tr>
<th>Components</th>
<th>Classification (EU)</th>
<th>Product identifier</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zeolite</td>
<td>75% - 100%</td>
<td>CAS-No.: 1318-02-1</td>
</tr>
<tr>
<td>Clay binder</td>
<td>0% - 25%</td>
<td></td>
</tr>
</tbody>
</table>

For the full text of the phrases mentioned in this Section, see Section 16.

Hazardous impurities

None known.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation
No special measures required.

Skin contact
Wash with water and soap as a precaution.

Eye contact
Rinse thoroughly with plenty of water, also under the eyelids. If eye irritation persists, consult a specialist.

Ingestion
Clean mouth with water and drink afterwards plenty of water.

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

None known.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media
No special measures required.

Extinguishing media which must not be used for safety reasons
None.

5.2. Special hazards arising from the substance or mixture

No data is available on the product itself.
5.3. Advice for firefighters

<table>
<thead>
<tr>
<th>Special protective equipment for firefighters</th>
<th>Standard procedure for chemical fires.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specific methods</td>
<td>No special measures required.</td>
</tr>
</tbody>
</table>

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

<table>
<thead>
<tr>
<th>Advice for non-emergency personnel</th>
<th>No special measures required.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advice for emergency responders</td>
<td>Handle in accordance with good industrial hygiene and safety practice.</td>
</tr>
</tbody>
</table>

6.2. Environmental precautions

| No special environmental precautions required. |

6.3. Methods and material for containment and cleaning up

| Use mechanical handling equipment. After cleaning, flush away traces with water. |

SECTION 7: Handling and storage

7.1. Precautions for safe handling

| Applies to powders only: Take precautionary measures against electrostatic charging. |

7.2. Conditions for safe storage, including any incompatibilities

| Store at room temperature in the original container. |

7.3. Specific end use(s)

| No information available. |

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

<table>
<thead>
<tr>
<th>Exposure limit(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total dust</td>
</tr>
<tr>
<td>Permissible exposure limit: 10 mg/m³.</td>
</tr>
<tr>
<td>Alveolar dust fraction:</td>
</tr>
<tr>
<td>Permissible exposure limit: 3 mg/m³.</td>
</tr>
</tbody>
</table>

8.2. Exposure controls

<table>
<thead>
<tr>
<th>Appropriate engineering controls</th>
</tr>
</thead>
<tbody>
<tr>
<td>General industrial hygiene practice.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Personal protection equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respiratory protection</td>
</tr>
<tr>
<td>No special protective equipment required.</td>
</tr>
</tbody>
</table>
Hand protection  DRY moleskin gloves.

Eye protection  Avoid contact with eyes.

Skin and body protection  No special measures required.

Thermal hazards  No special measures required.

Environmental exposure controls  No special measures required.

**SECTION 9: Physical and chemical properties**

9.1. Information on basic physical and chemical properties

- **Appearance**: Powder or granulate
- **Colour**
  - Powder: white to cream-colored
  - Granulated: cream-colored, beige or beige-gray
- **Odour**: Odorless
- **Odour Threshold**: Not determined.
- **pH**: 9-11.5 (5% in H2O)
- **Melting point/range**: > 1600°C
- **Boiling point/range**: n.a.
- **Flash point**: does not flash
- **Evaporation Rate**: n.a.
- **Flammability**: n.a.
- **Explosion limits**: n.a.
- **Vapour pressure**: n.a.
- **Relative density**: 550-850 g/L
- **Water solubility**: practically insoluble
- **Partition coefficient (n-octanol/water)**: n.a.
- **Autoignition temperature**: n.a.
- **Decomposition temperature**: n.a.
- **Viscosity**: n.a.
- **Explosive properties**: not hazardous
- **Oxidising properties**: None

9.2. Other information

- **General Product Characteristics**: No information available.

**SECTION 10: Stability and reactivity**

10.1. Reactivity  No information available.

10.2. Chemical stability  No decomposition if used as directed.
10.3. Possibility of hazardous reactions
No information available.

10.4. Conditions to avoid
Not required.

10.5. Incompatible materials
The activated product generates much heat in contact with water.

10.6. Hazardous decomposition products
None under normal use.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity
None.
Zeolite (CAS 1318-02-1)
LD50/oral/rat > 5000 mg/kg.
LD50/dermal/rabbit > 2000 mg/kg.
LC50/inhalation/rat > 15 mg/l.
No observed adverse effect level (NOAEL): 250 - 300 mg/kg (rat, oral).

Skin corrosion/irritation
Slight skin irritation.

Serious eye damage/eye irritation
Slight eye irritation.

Respiratory / Skin Sensitisation
None.

Carcinogenicity
Animal testing did not show any carcinogenic effects.

Germ cell mutagenicity
Animal testing did not show any mutagenic effects.

Reproductive toxicity
Animal testing did not show any hazardous effects.

Specific target organ toxicity (single exposure)
No data available.

Specific target organ toxicity (repeated exposure)
No data available.

Aspiration hazard
Irritating to mucous membranes. May cause respiratory tract irritation.

Human experience
No data available.
SECTION 12: Ecological information

12.1. Toxicity  
Zeoite (CAS 1318-02-1)  
EC50/48h/daphnia > 100 mg/l.  
LC50/96h/fish > 680 mg/l.  
EC50/96h/algae = 300 mg/l.

12.2. Persistence and degradability  
No data available.

12.3. Bioaccumulative potential  
Does not bioaccumulate. Accumulation in aquatic organisms is unlikely. Accumulation in terrestrial organisms is unlikely.

12.4. Mobility in soil  
No data available.

12.5. Results of PBT and vPvB assessment  
No information available.

12.6. Other adverse effects  
No information available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste from residues / unused products  
Dispose of in accordance with local regulations.

Contaminated packaging  
Offer rinsed packaging material to local recycling facilities.

SECTION 14: Transport information

ADR/RID  
Not regulated.

IMDG  
Not regulated.

IATA  
Not regulated.

Further Information  
Not classified as dangerous in the meaning of transport regulations.
SECTION 15: Regulatory information

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

Regulatory Information: None.

15.2. Chemical safety assessment

Not required.

SECTION 16: Other information

Key or legend to abbreviations and acronyms

CLP: Classification according to Regulation (EC) No. 1272/2008 (GHS)
PEL: Permissible Exposure Limit

Full text of phrases referred to under sections 2 and 3

H335: May cause respiratory irritation.

Further information

Information on manufacturers and REACH registration can be found in Appendix 1, V1
Conversion °C=>°F: °F = (°C * 1.8) + 32

Disclaimer

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. It is not to be considered a warranty or quality specification.