

**1. PRODUCT AND COMPANY IDENTIFICATION**

Supplier Information: Zeochem LLC  
 1600 W. Hill St.  
 Louisville, Ky 40210 USA

**24 hr. Emergency Phone (Chemtrec US):** 1-800-424-9300  
 Customer Service: 502-634-7600  
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Only Representative: Only representative in the EU according to Art. 8 Regulation (EC) No 1907/2006:  
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 Dynamostr. 19, 68165 Mannheim, Germany  
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Product Identifier: Molecular sieves (all grades)

Chemical Names: Synthetic aluminosilicate; zeolite, crystalline, synthetic, nonfibrous  
 CAS#: 1318-02-1  
 EC#: 215-283-8  
 REACH#: 01-2119429034-49-0024

Product Names: Z3-XX, Z4-XX, Z5-XX, Z10-XX, M-13, Purmol  
 ZEOX®, Z12, HYP\*, ESIP, ESI 24, XX-GDG

Synonyms: Zeolite (synthetic), Mol Sieve

Uses: Adsorbent/ Desiccant

Form: powder or bead  
 Color: white, beige, ivory  
 Odor: none

Document ID: SDS-001  
 Revision: 10  
 Date: 9/11/17

**2. HAZARDS IDENTIFICATION**

**GHS-US Classification:**

Health	Environmental	Physical
Specific Target Organ Toxicity: Single Exposure Category 3	Acute Toxicity: Not Classified Chronic Toxicity: Not Classified	Not Classified
Skin Irritation: Category 3		
Skin Sensitization: Not Classified		
Eye: Category 2B		

**GHS LABEL:**



**Signal Word : WARNING**

<u>Hazard Statements</u>	<u>Precautionary Statements</u>
H316 – Causes mild skin irritation H320 – Causes eye irritation H335 – May cause respiratory irritation	P261 – Avoid breathing dust/fume/gas/mist/vapors/spray P264 – Wash hands thoroughly after handling P304 & P340 – If <u>inhaled</u> : Remove person to fresh air and keep comfortable for breathing P305 & P351 & P338 – If in eyes, rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. P312 – Call Poison Center/Doctor if you feel unwell P337 & P313 – If eye irritation persists; get medical advice/attention P332 & P313 – If skin irritation occurs get medical advice/attention P501 – Dispose of contents/container within all applicable laws and regulations P403 & P223 – Store in well ventilated place / keep container tightly closed

**Supplemental Information:**

A molecular sieve is an odorless light colored bead, powder, or cake. It is used as an adsorbent for liquids or gases. In its fresh unused state this product is not flammable. Spent or used molecular sieves will need to be handled according to the user SDS for the stream used with the molecular sieves. Some drums of beaded product may be under pressure or vacuum. Use the bung hole to relieve pressure before opening. Upon contact with water this product generates considerable heat up to the boiling point of water. Flood with water to reduce the temperature. Sweep up spills as beaded materials cause surfaces to be slippery.

**3. COMPOSITION/ INFORMATION ON INGREDIENTS**

Chemical characterization: Zeolite, crystalline, synthetic, non fibrous

CAS #	Component	Percent
1318-02-1	Zeolite	75-100
1327-43-1	Magnesium aluminosilicate clay ( beaded products only)	0-25

**Component Related Regulatory Information:**

This product may be regulated, have exposure limits or other information identified as the following: Nuisance particulates.

**Component Information/Information on Non-Hazardous Components:**

This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).

**4. FIRST AID MEASURES**

<b>Contact With Eyes:</b>	Immediately flush eyes with water for at least 15 minutes, while holding eyelids open. Seek medical attention at once.
<b>Contact With Skin:</b>	Wash thoroughly with soap and water. If irritation develops or persists, get medical attention.
<b>Ingestion:</b>	If product is ingested, drink two or three glasses of water to dilute stomach contents. DO NOT induce vomiting. Call a physician immediately.
<b>Inhalation:</b>	Move person to fresh air. Get medical attention immediately if exposed person is having difficulty breathing.
<b>First Aid: Notes to Physician</b>	This product is an adsorbent/desiccant that generates heat on contact with water. Contact with soft tissue or mucous membranes may cause thermal burns. The used product may have adsorbed hazardous materials. Identify adsorbed materials and treat symptomatically.

## 5. FIREFIGHTING MEASURES

Product is non flammable

- 5.1 Extinguisher media  
No special measures required. Choose extinguishing media that is suited for the surrounding fire. Water spray, alcohol-resistant foam, dry chemical or carbon dioxide extinguishers are appropriate.
- 5.2 Special hazards arising from the substance or mixture – Spent or used product may contain adsorbed flammable or otherwise hazardous substances upon exposure to heat or water. Product user must identify adsorbed substances and inform fire-fighters of potential hazards.
- 5.3 Advice for fire-fighters  
Special protective equipment – standard PPE and equipment. Active product gives off heat when exposed to water and can burn tissue. Flush with water to dissipate the heat. If dusty conditions prevail, a dust mask is recommended.

Specific methods – no special methods required

	HMIS	NFPA
Health	1	1
Flammability	0	0
Reactivity	0	1

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

## 6. ACCIDENTAL RELEASE MEASURES

<b>Emergency Procedures:</b>	Personnel not wearing appropriate protective equipment should be excluded from area of spill area until clean-up is complete.
<b>Personal Precautions / Protective Equipment:</b>	Cleanup personnel should wear personal protective equipment to avoid product contact with skin and eyes. Personnel should also avoid inhalation exposures. Spills of product in bead form may cause fall hazards.
<b>Environmental Precautions:</b>	Do not allow large amounts of product to enter public drainage system or open water courses.
<b>Methods and Materials for Cleanup:</b>	Sweep/gather material and place in appropriate container for disposal. Wash spill area thoroughly with a large amount of water. Vacuum or wet methods are preferred. Avoid dust generation during cleanup. Product evolves heat on contact with moisture.
<b>Special Procedures:</b>	Product gives off heat when exposed to water.

## 7. HANDLING AND STORAGE

**Handling Procedures:** Do not inhale dusts generated from this product. Do not get in eyes. Avoid contact with skin. Wash thoroughly after handling product. Keep product away from moisture. Considerable heat is generated when product is mixed with water.

**Storage Procedures:** Store in a dry place. Open container slowly to avoid creating or raising dust. Open bung holes on drums before removing the lids to vent and pressure/vacuum. Product shelf life is unlimited if kept dry in an airtight container. To prevent loss of product effectiveness, ensure containers are tightly resealed after opening. Do not return used or unused product to original container.

**8. EXPOSURE CONTROLS / PERSONAL PROTECTION**

**Exposure Limits**

Component	ACGIH TLV	ACGIH STEL	OSHA PEL	OSHA STEL
Zeolite 1318-02-1	10 mg/m <sup>3</sup> TWA	3 mg/m <sup>3</sup> TWA	15 mg/m <sup>3</sup> TWA	5 mg/m <sup>3</sup> TWA

**Engineering Controls:** Use general ventilation and use local exhaust, where possible, in confined or enclosed spaces.

**Monitoring:**

**PERSONAL PROTECTIVE EQUIPMENT**

**Eye Protection:** Wear safety glasses.

**Skin Protection:** Cotton gloves recommended. Work clothing sufficient to prevent all skin contact should be worn, such as coveralls and long sleeves.

**Respiratory Protection:** If airborne product concentrations exceed applicable exposure limits, wear a NIOSH/MSHA approved respirator.

**9. PHYSICAL PROPERTIES**

<b>Appearance:</b> Beige, ivory, white powder or bead	<b>Physical State:</b> Solid/Powder
<b>Odor:</b> Odorless	<b>Odor Threshold:</b> Not applicable
<b>pH:</b> @20°C; 9 -11.5 (5% in water)	<b>Boiling Range:</b> Not determined
<b>Melting/Freezing Point:</b> >2900°F (>1600°C)	<b>Flammability:</b> Not applicable
<b>Flash Point:</b> Not applicable	<b>Flammability Limits:</b> LEL: Not applicable UEL: Not applicable
<b>Relative Density:</b> 550-850g/L	<b>Vapor Pressure:</b> Not applicable
<b>Solubility:</b> Insoluble, but will adsorb moisture	<b>Vapor Density:</b> Not applicable
<b>Partition Coefficient n-octanol/water:</b> Not available	<b>Other Data:</b> Does not soften below 1292°F (700°C)
<b>Auto-ignition Temperature:</b> Not applicable	
<b>Decomposition Temperature:</b> Not applicable	
<b>VOC Content:</b> Not applicable	

**10. STABILITY AND REACTIVITY**

**Stability:** Product is stable under normal temperature and pressure conditions in sealed containers when kept dry.

**Hazardous Decomposition Products:** Used product may release adsorbed hazardous materials upon exposure to heat, humid air, or water.

**Conditions to Avoid:** Product evolves considerable heat upon contact with moist air or water. Used product may contain adsorbed hazardous materials that could be released upon heating or contact with water.

**Incompatible Materials:** Prevent unintentional contact with water or moisture.

**11. TOXICOLOGICAL INFORMATION**

**Acute and Chronic Toxicity**

**A: General Product Information**

The following acute toxicity data has been reported for this product:

Oral LD50 rat > 10,000 mg/kg

Dermal LD50 rabbit > 2000 mg/kg

Inhalation LC50 rat > 18.3 mg/L

Short term single exposure unlikely to cause skin irritation. Ingestion, inhalation, or contact with eyes or mucous membranes will cause irritation or thermal burns. Chronic exposure to respirable dust may lead to delayed lung injury such as fibrosis. Asthma and chronic respiratory conditions may be aggravated by exposure to this product.

**B: Component Analysis**

**Magnesium aluminosilicate clay (1327-43-1)**

Oral LD50 Rat: >16,000 mg/kg

**Carcinogenicity**

**A: General Product Information**

None identified.

**B: Component Carcinogenicity**

None of this product's components are listed by ACGIH, IARC, OSHA, NIOSH, or NTP.

<u>Reproductive Effects</u>	<u>Teratogenicity</u>	<u>Mutagenicity</u>	<u>Embryotoxicity</u>	<u>Sensitization to Product</u>	<u>Synergistic Products</u>
Not Classified	Not Classified	Not Classified	Not Classified	Not Classified	Not Classified

**12. ECOLOGICAL INFORMATION**

**13. DISPOSAL CONSIDERATIONS**

**US EPA Waste Number & Descriptions**

**General Product Information:**

This product, if discarded as sold, is not expected to be a hazardous waste according to U.S. RCRA regulations. Depending on application, used product may have adsorbed significant quantities of regulated, hazardous or toxic substances. Adsorbed substances may be released during handling and disposal of used product, particularly upon exposure to moisture or heat. Chemical waste generator must determine whether discarded product is classified as a hazardous waste. US EPA guidance for waste classification is given in 40 CFR 261.3.

**Component Waste Numbers:**

No EPA Waste Numbers are applicable for this product's components.

**Disposal Instructions:**

Store used product in sealed airtight container to minimize release of adsorbed substances. Waste must be handled in accordance with all federal, state, provincial, and local regulations. Used product may be disposed of in a permitted waste management facility qualified to process the adsorbed contaminant(s). Never dispose by means of public sewers or drainage.

**14. TRANSPORTATION INFORMATION**

**US DOT Information**

**Shipping Name:** This material is not regulated as a hazardous material for transportation.  
**UN Number:** Not applicable

**TDG Information**

**Shipping Name:** This material is not regulated as a hazardous material for transportation.  
**UN Number:** Not applicable

**IATA Information**

**Shipping Name:** Non-Hazardous for Air Transport: Non-hazardous for air transport.  
**UN Number:**

**15. REGULATORY INFORMATION**

**US Federal Regulations**

**General Product Information:** None identified.  
**Component Analysis:** None of this products components are listed under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), or CERCLA (40 CFR 302.4).

**State Regulations**

**General Product Information:** U.S. state regulations may apply. Check individual state regulations.  
**Component Analysis:** The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA	RI
Zeolite	1318-02-1	No	No	No	No	No	Yes <sup>1</sup>

**Canadian WHMIS Information**

**General Product Information:** Product has a WHMIS classification of D2A.  
**Component Analysis – WHMIS IDL:** No components are listed in the WHMIS IDL.

**Additional Regulatory Information**

**General Product Information:** Components of this product have been checked against the non-confidential TSCA inventory by CAS Registry Number. Components not identified on this non-confidential inventory are either exempt from listing (i.e. polymers, hydrates) or are listed on the confidential inventory as declared by the supplier.  
**Component Analysis:** Inventory TSCA = U.S. EPA TSCA non-confidential inventory  
 CAN = Canadian DSL and NDSL Inventories status  
 EEC = European Union EINECS and ELINCS Inventories status  
 No = Not Present on the Designated Inventory(s).

Note: Substances not listed may be automatically included as in the case of naturally occurring substances, hydrates, or may be considered exempt as in the case of certain polymers.

Component	CAS#	TSCA	CAN	EEC
zeolite	1318-02-1	Yes	DSL	EINECS
Magnesium aluminosilicate clay	1327-43-1	Yes	DSL	EINECS

**16. OTHER INFORMATION**

## Other Information

Reasonable care has been taken in the preparation of this information, but the manufacturer makes no warranty of merchantability or any other warranty, expressed or implied, with respect to this information. The manufacturer makes no representations and assumes no liability for any direct, incidental or consequential damages resulting from its use. As supplied, Zeochem molecular sieves present no hazards beyond those specified on this SDS for unused product.

**CAUTION:** the user must be aware that this does not necessarily apply to spent product. Depending on the application, significant amounts of regulated, dangerous, hazardous or toxic materials may be adsorbed during normal use. Adsorbed substances can be released during subsequent handling and disposal, especially upon exposure to moisture or heat. The user needs to take appropriate measures for the safe handling and disposal of used product.

**Revision History of SDS – this is revision 10 of the SDS under the new GHS guidelines.**

## Key/Legend

ACGIH = American Conference of Governmental Industrial Hygienists; CAS = Chemical Abstracts Service; CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act; CFR = Code of Federal Regulations; CPR = Controlled Products Regulations; DOT = Department of Transportation; DSL = Domestic Substances List; EINECS = European Inventory of Existing Commercial Chemical Substances; EPA = Environmental Protection Agency; IARC = International Agency for Research on Cancer; IATA = International Air Transport Association; mg/Kg = milligrams per Kilogram; mg/L = milligrams per liter; mg/m<sup>3</sup> = milligrams per Cubic Meter; MSHA = Mine Safety and Health Administration; NA = Not Applicable or Not Available; NIOSH = National Institute for Occupational Safety and Health; NJTSR = New Jersey Trade Secret Registry; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration; SARA = Superfund Amendments and Reauthorization Act; STEL = Short Term Exposure Limit; TDG = Transport Dangerous Goods; TSCA = Toxic Substances Control Act; WHMIS = Workplace Hazardous Materials Information System; TWA = Time-Weighted Average; TLV = Threshold Limit Values; PEL = Permissible Exposure Limit; RCRA = Resource Conservation and Recovery Act; EEC = Dangerous Substances Directive

This is the end of SDS-001