Safety Data Sheet

Synthetic zeolite molecular sieve — according to Regulation (EC) No. 1907/2006 (REACH) Annex II and the UN Globally Harmonized System

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SDS-MS-001	31 October 2026	Rev. 1.0	1 of 1

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

1.1 Product identifier	Molecular sieve, synthetic zeolite (types 3A, 4A, 5A, 13X, 13X APG, Li-LSX). Carbon molecular sieve is covered in section 3.
Chemical name	Zeolites
CAS Number	1318-02-1
EC / EINECS Number	215-283-8
1.2 Relevant identified uses	Adsorbent for the chemical industry: gas and liquid drying, air separation pre-purification, oxygen and nitrogen generation, insulating glass. Uses advised against: food, drink, animal feedingstuffs, cosmetics and any use involving direct contact with consumables.
1.3 Supplier	Zhengzhou High-Tech Industrial Development Zone, Zhengzhou, Henan 450000, China Tel: +86 153 7878 8801 | Email: sales@zeolitemolecularsieve.com Web: www.zeolitemolecularsieve.com
1.4 Emergency telephone	+86 153 7878 8801 (08:30–18:00 China Standard Time, UTC+8, Monday to Saturday). Outside these hours leave a message on the same number or email the address above. This is not a poison centre; in a medical emergency contact your national poison information service.

SECTION 2: Hazards identification

2.1 Classification: This substance does not meet the criteria for classification under Regulation (EC) No 1272/2008 (CLP) or the GHS. It is not classified as hazardous.

2.2 Label elements: No hazard pictogram, no signal word, no hazard statements and no precautionary statements are required. The product does not require a hazard warning label.

2.3 Other hazards: No specific dangers are known where the product is handled as supplied and the notes on storage and handling are observed. Dust generated during handling, loading or screening can cause mechanical irritation of the eyes and respiratory tract. The product is strongly desiccant and will remove moisture from skin on prolonged contact. Activated sieve generates heat when wetted; in a confined space or a wet vessel this can be significant. **Spent product may have adsorbed hazardous, toxic or flammable substances during service, which can be released on handling, on exposure to moisture or on heating — treat used material according to what it has adsorbed.** Based on available data the substance is not a PBT or a vPvB, and it does not contain an endocrine disruptor at 0.1% or above.

SECTION 3: Composition / information on ingredients

Component	CAS No	EC No	Content	Classification
Zeolites (crystalline sodium / potassium / calcium / lithium aluminosilicate, synthetic, non-fibrous)	1318-02-1	215-283-8	~100 wt%	Not classified
Quartz (respirable crystalline silica), impurity	14808-60-7	238-878-4	≤ 1 wt%	Not classified as supplied; observe general respirable dust limits
Binder (clay-type inorganic binder)	—	—	Balance	Not classified

Carbon molecular sieve is a carbonaceous adsorbent (predominantly carbon) supplied as black granules. It is not classified as hazardous. Combustible as a finely divided carbon, though not readily ignited in granular form.

SECTION 4: First-aid measures

Route	Measure
Inhalation	Move to fresh air. Remove from dust exposure. If coughing or irritation persists, seek medical advice.

Route	Measure
Skin contact	Brush off loose particles, then wash with soap and water. The product is desiccant; apply a moisturising cream if the skin is dried.
Eye contact	Rinse cautiously with water for several minutes, holding the eyelids apart. Remove contact lenses if present and easy to do. Continue rinsing. If irritation persists, seek medical attention.
Ingestion	Rinse mouth. Do not induce vomiting. Give water to drink. Seek medical advice if you feel unwell.
Note to physician	Treat symptomatically. No specific antidote. In the case of spent product, consider the substances it has adsorbed.

SECTION 5: Fire-fighting measures

5.1 Extinguishing media: the product is non-combustible. Use extinguishing media appropriate to the surrounding fire — water spray, foam, dry powder, ABC powder or carbon dioxide. Do not use a direct water jet, which raises dust.

5.2 Special hazards: none arising from the product itself. It does not burn and does not support combustion. Heating to decomposition may release metal oxide fumes.

5.3 Advice for firefighters: wear self-contained breathing apparatus and normal protective clothing. Do not breathe fumes. Contain fire-fighting water, since wetted sieve becomes slippery underfoot. If the vessel has held flammable adsorbed material, treat the fire as a fire involving that material.

SECTION 6: Accidental release measures

6.1 Personal precautions: avoid dust formation. Where dust cannot be avoided, wear eye protection and a dust mask (see section 8). Ventilate the area.

6.2 Environmental precautions: keep spilled material out of drains, surface water and groundwater. The product itself is insoluble and inert, but a large quantity in a watercourse causes turbidity.

6.3 Methods for cleaning up: sweep or vacuum up dry, place in closed containers and label. Do not hose down, since wet sieve is slippery and generates heat. Wash the spill site after collection. Material that is clean, dry and unopened may be reused; material that has been exposed to moisture should be regarded as partially spent.

SECTION 7: Handling and storage

7.1 Handling: handle bags and drums so as to minimise dust. Open containers only when ready to load, and load promptly — activated sieve begins to adsorb moisture from ambient air immediately. Do not drop bags into a vessel from height; the product is hard but brittle and generates fines. Avoid contact with strong acids and with hydrofluoric acid, which attack the framework. Keep away from liquid water: wetting a bed generates heat.

7.2 Storage: keep containers tightly closed, sealed and dry, off the floor, in a well-ventilated place at ambient temperature. Store away from strong acids, and away from volatile organic compounds the sieve would adsorb from the air. Do not store outdoors unless covered. Rotate stock by production date.

7.3 Specific end uses: industrial adsorbent only. Not for household, food, drink, animal feed or cosmetic use.

SECTION 8: Exposure controls / personal protection

Parameter	Guidance
Occupational exposure limit	No substance-specific limit has been established. Apply the general limit for inert / nuisance dust in your jurisdiction (for example ACGIH TLV 10 mg/m^3 inhalable and 3 mg/m^3 respirable, as an 8-hour TWA). Where respirable crystalline silica is present, apply the limit for silica.
Engineering controls	Local exhaust ventilation at points where dust is generated (loading, screening, vessel filling).
Eye protection	Safety glasses with side shields when dust may be generated.
Skin protection	Gloves (nitrile or equivalent) and normal work clothing. The product is desiccant; gloves also protect against drying of the skin.
Respiratory protection	Where dust cannot be controlled, a particle-filter respirator (FFP2 / N95 or better). If the sieve is spent, select the filter for the adsorbed substance, not for the sieve.

SECTION 9: Physical and chemical properties

Property	Value
Appearance	Beige to light brown beads or pellets (carbon molecular sieve: black granules)
Odour	Odourless
Odour threshold	Not applicable
pH	Approximately 9–11 in 10% aqueous suspension
Melting / freezing point	Not applicable; decomposes above approximately 700 °C with loss of crystal structure
Flash point	Not applicable (inorganic, non-combustible)
Flammability	Non-combustible
Explosive properties	Not explosive. Dust clouds from fines are not classified as explosible, but keep dust concentrations low
Oxidising properties	None
Vapour pressure	Not applicable
Bulk density	0.60–0.75 g/mL depending on grade and form
Solubility	Insoluble in water and organic solvents. Decomposed by strong acids and by hydrofluoric acid
Partition coefficient	Not applicable (inorganic)
Auto-ignition temperature	Not applicable
Decomposition temperature	Above approximately 700 °C (loss of crystal structure)
Other	Strongly hygroscopic when activated; generates heat on contact with water. Regenerable at 200–350 °C

SECTION 10: Stability and reactivity

10.1 Reactivity: stable under normal conditions of handling and storage.

10.2 Chemical stability: stable. Not affected by normal temperatures and pressures in service.

10.3 Hazardous reactions: none known for the product as supplied. Contact with water releases heat; in a closed vessel this can raise pressure. Contact with strong acids, strong alkalis or hydrofluoric acid decomposes the framework.

10.4 Conditions to avoid: moisture before use, wetting of an activated bed, and regeneration above the temperature window for the grade.

10.5 Incompatible materials: strong acids, hydrofluoric acid, strong alkalis, and liquid water in quantity.

10.6 Hazardous decomposition products: none under normal use. Thermal decomposition above approximately 700 °C releases metal oxide fumes. Spent product may release whatever it has adsorbed.

SECTION 11: Toxicological information

11.1 Information on toxicological effects: the substance is not classified as hazardous and no toxicological classification applies. Acute toxicity: not classified; no LD_{50} / LC_{50} established, and no acute toxic effects are expected from the material as supplied. Skin corrosion / irritation: not classified; prolonged contact may dry the skin because the product is desiccant. Serious eye damage / irritation: not classified; dust may cause mechanical irritation. Respiratory sensitisation: not classified. Germ cell mutagenicity, carcinogenicity, reproductive toxicity: not classified; the substance is not listed by IARC, NTP or OSHA as a carcinogen, and it is synthetic and non-fibrous. STOT single / repeated exposure: not classified; inhalation of dust may cause mechanical irritation of the respiratory tract. Aspiration hazard: not applicable.

The respirable crystalline silica content is below 1% by weight, but loading and screening operations should still be controlled so that respirable dust exposure is kept as low as reasonably practicable.

SECTION 12: Ecological information

12.1 Toxicity: no adverse effects expected. The substance is an insoluble inorganic mineral; aquatic toxicity tests are not applicable and none are required.

12.2 Persistence and degradability: not biodegradable, because the substance is inorganic. It persists as an inert mineral.

12.3 Bioaccumulative potential: none expected; insoluble and inorganic.

12.4 Mobility in soil: immobile. Insoluble, and remains where deposited.

12.5 Results of PBT and vPvB assessment: not a PBT or a vPvB.

12.6 Other adverse effects: none known. Large releases into watercourses cause turbidity. Spent product should be assessed on the basis of the adsorbed substances.

SECTION 13: Disposal considerations

13.1 Waste treatment methods: unused, uncontaminated product is an inert inorganic material and may in most jurisdictions be disposed of as non-hazardous industrial waste, or sent for landfill, subject to local regulation. Packaging that is clean and dry may be recycled where facilities exist. **Spent product must be classified according to the substances it has adsorbed** — where the adsorbed material is hazardous, the spent sieve is hazardous waste and must be disposed of accordingly. Do not dispose of wetted or spent material into drains or watercourses. Follow all applicable national and local requirements; the codes below are indicative only and must be confirmed by the waste holder.

Suggested waste codes (indicative, confirm locally): 06 03 99 (wastes not otherwise specified) or 16 03 06 (organic wastes other than those mentioned in 16 03 05) — or the code appropriate to the adsorbed substance where the product is spent.

SECTION 14: Transport information

Item	Classification
UN number	Not applicable
Proper shipping name	Not regulated
ADR / RID (road and rail)	Not subject to the regulations
IMDG (sea)	Not subject to the regulations
IATA / ICAO (air)	Not subject to the regulations
Transport hazard class	None
Packing group	None
Environmental hazards	Not a marine pollutant
Special precautions	Keep dry. Protect packaging from damage and from water. Wetted product releases heat.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations: the substance is listed on the following inventories: TSCA (United States), EINECS / ELINCS (European Union, EC 215-283-8), DSL (Canada), and the corresponding inventories of China, Japan, Korea, Australia, New Zealand and the Philippines. It is not subject to any specific restriction under REACH Annex XVII, and it is not on the REACH candidate list of substances of very high concern. It contains no substance listed in Annex XIV.

REACH: no REACH registration number is claimed on this document. A REACH status statement for your import tonnage band is issued on request. We do not state a registration we do not hold.

US TSCA Section 12(b): not subject. **California Proposition 65:** the product may contain a trace of crystalline silica; assess against the listing for respirable crystalline silica where relevant. **SARA 313:** not subject. **WHMIS (Canada):** not controlled.

SECTION 16: Other information

This safety data sheet is issued in good faith and is based on information believed to be reliable at the date of issue. It is offered for your consideration and verification and does not constitute a warranty of merchantability or fitness for any particular purpose. Conditions of handling, storage, use and disposal are beyond our control, and we accept no liability for loss, damage or expense arising from them. The user is responsible for determining that this information is adequate and appropriate for the intended use and for complying with applicable laws and regulations.

Key: CAS = Chemical Abstracts Service; CLP = Classification, Labelling and Packaging; GHS = Globally Harmonized System; PBT = persistent, bioaccumulative and toxic; vPvB = very persistent and very bioaccumulative; STOT = specific target organ toxicity; TLV = threshold limit value; TWA = time-weighted average.

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31 October 2026	Rev. 1.0	First issue	Product safety, Zeolite Molecular Sieve