

Molecular Sieve Beads 4A are synthetic aluminosilicate zeolite beads with a precisely controlled 4 Å (0.4 nm) pore diameter. The uniform pore structure enables selective molecular sieving — adsorbing molecules smaller than 4 Å (0.4 nm) while excluding larger ones. Highly effective as a desiccant and for selective gas/liquid separation. Generates heat on contact with water — allow to cool before sealing containers after use.

SECTION 1: PRODUCT IDENTIFICATION

Product Name	Molecular Sieve Beads 4A
CAS Number	1344-00-9
Chemical Name	Synthetic Aluminosilicate Zeolite; Molecular Sieve Type 4A
Pore Size	4 Å (0.4 nm)
Form	White/grey beads or pellets
GHS Classification	WARNING — STOT SE Cat 3 (H335 — dust). Exothermic on water contact.
Supplier	Cannagas Supply 97 Turnpike Rd, Westborough, MA 01581 877-710-1965 Sales@canna-gas.com

SECTION 2: PHYSICAL & CHEMICAL PROPERTIES

Physical State	White/grey beads or pellets	Bulk Density	~0.60–0.75 g/mL
Odor	Odorless	Solubility	Insoluble in water
Pore Size	4 Å (0.4 nm)	Melting Point	>800°C
pH (slurry)	~9–11 (alkaline)	Thermal Note	Exothermic hydration on contact with water
Flammability	Non-flammable	Vapor Pressure	Not applicable (solid)
Flash Point	Not applicable	VOC Content	None

SECTION 3: PERFORMANCE & APPLICATIONS

Selectivity	Adsorbs molecules ≤ 4 Å: water (H ₂ O, 2.8 Å), CO ₂ , H ₂ S, SO ₂ , C ₂ H ₅ OH, C ₂ H ₆ , C ₃ H ₆ . Excludes propane and larger hydrocarbons.
Primary Use (Desiccant)	Effective desiccant for gases and liquids. Achieves very low dew points (<-60°C) in gas drying applications.
Applications	Standard industrial desiccant for gases and liquids; ethanol and alcohol dehydration; removal of water, CO ₂ , and H ₂ S; static drying of refrigerants and hydrocarbon streams.
Capacity	Water capacity: typically $\geq 20\%$ w/w (static). Kinetic capacity depends on flow rate and contact time.
Regeneration	Regenerate by heating at 250–350°C for 8–12 hours. Purge with dry inert gas (N ₂) during regeneration. Cool in sealed container before reuse.
Beads vs Powder	Bead form provides lower pressure drop, easier handling, and better flow characteristics vs powder form. Recommended for column/packed bed applications.
Operating Temp	Effective from -40°C to +250°C. Performance decreases at very high temperatures. Optimal for ambient to moderate temperatures.

Compatibility Compatible with most non-aqueous solvents, hydrocarbons, and gases. Avoid strong acids and strong bases (slowly dissolve zeolite structure).

SECTION 4: STORAGE & HANDLING

■ **SAFETY NOTE:** Generates significant heat (exothermic) on contact with water or humid air. Freshly regenerated (hot, activated) beads may cause thermal burns. Allow to cool in a sealed container before handling. Keep dry at all times.

Storage Tightly sealed containers in cool, dry area. Keep from all moisture sources.

Shelf Life Indefinite when stored sealed and dry. Loses capacity if exposed to moisture — regenerate before use.

PPE Dust mask, eye protection, gloves. Caution with freshly activated/hot material.

SECTION 5: SAFETY SUMMARY

GHS Signal Word WARNING

Key Hazards H335: Respiratory irritation (dust). Exothermic water contact — thermal burn risk.

SDS Reference Full SDS available. CHEMTREC: 1-800-424-9300.

DISCLAIMER: The information provided in this Technical Data Sheet is based on data believed to be accurate as of the issue date. Cannagas Supply makes no warranty regarding fitness for a particular purpose or accuracy of the information herein. Users are responsible for determining suitability for their specific application. Always refer to the Safety Data Sheet (SDS) for complete safety and regulatory information.