Molecular Sieve Beads 3A are synthetic aluminosilicate zeolite beads with a precisely controlled 3 Å (0.3 nm) pore diameter. The uniform pore structure enables selective molecular sieving — adsorbing molecules smaller than 3 Å (0.3 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 3A
CAS Number	1318-02-1
Chemical Name	Synthetic Aluminosilicate Zeolite; Molecular Sieve Type 3A
Pore Size	3 Å (0.3 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	3 Å (0.3 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	Selectively adsorbs ONLY molecules ≤3 Å — primarily water (2.8 Å). Excludes ethanol (4.4 Å), methanol (~3.6 Å), propanol, and virtually all organic solvents. Ideal for drying alcohols and reactive solvents without co-adsorbing the solvent.
Primary Use (Desiccant)	Effective desiccant for gases and liquids. Achieves very low dew points (<-60°C) in gas drying applications.
Applications	Selective drying of ethanol, propanol, and alcohols without adsorbing the alcohol itself; drying of polar solvents (THF, DMF, DCM); moisture removal from reactive or sensitive streams.
Capacity	Water capacity: typically ≥20% w/w (static). Kinetic capacity depends on flow rate and contact time.
Regeneration	Regenerate by heating at 200–300°C for 8–12 hours. Purge with dry inert gas (N2) 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.