

Activated Alumina is a highly porous, high-surface-area aluminum oxide (Al_2O_3) adsorbent and desiccant. Its amphoteric surface chemistry, high crush strength, and thermal stability make it ideal for desiccation, chromatographic purification, water treatment, and fluoride/arsenic removal applications.

SECTION 1: PRODUCT IDENTIFICATION

Product Name	Activated Alumina
CAS Number	1344-28-1
Chemical Name	Aluminium Oxide; Alumina; Al_2O_3
Molecular Formula	Al_2O_3 MW: 101.96 g/mol
Form	White crystalline/granular pellets or powder
GHS Classification	Not classified as hazardous
Supplier	Cannagas Supply 97 Turnpike Rd, Westborough, MA 01581 877-710-1965 Sales@canna-gas.com

SECTION 2: PHYSICAL & CHEMICAL PROPERTIES

Physical State	White crystalline granules or powder	Specific Gravity	3.97 g/cm ³
Odor	Odorless	Bulk Density	~0.75–0.90 g/mL (grade-dependent)
pH	~9–10 (amphoteric; aqueous suspension)	Solubility	Very slightly soluble in water; slowly soluble in acids and bases
Surface Area	150–350 m ² /g (BET, activated grade)	Melting Point	2,072°C (3,762°F)
Pore Volume	0.3–0.5 mL/g	Flammability	Non-flammable
Particle Size	Varies by grade — confirm with supplier spec	Crush Strength	High — suitable for packed bed applications

SECTION 3: PERFORMANCE SPECIFICATIONS

Adsorption Capacity	High — surface hydroxyl groups provide strong adsorption sites for polar molecules, water, fluoride, and metal ions
Water Capacity	≥15% w/w at 60% RH (typical for desiccant grade)
Thermal Stability	Stable to ~900°C; transitions to alpha-alumina above ~1,000°C with significant surface area loss
Chemical Stability	Stable in most organic solvents. Slowly dissolves in strong acids and strong bases (amphoteric). Reacts violently with chlorine trifluoride — do not combine.
Regeneration	Desiccant grade can be regenerated by heating at 175–315°C for 4–8 hours. Multiple regeneration cycles possible.
Typical Applications	Desiccation of gases and liquids; chromatographic purification; fluoride/arsenic removal from water; catalyst support; solvent drying (THF, DCM, alcohols)

SECTION 4: STORAGE & HANDLING

Storage	Store in sealed containers in a dry area. Protect from moisture to maintain full adsorption capacity. Reseal tightly after use.
Shelf Life	Indefinite when stored in sealed containers. Performance degrades with moisture exposure — regenerate before use if stored unsealed.
PPE	Dust mask and eye protection when handling fine powder. Wash hands after handling.
Incompatibles	Chlorine trifluoride (reacts violently), hydrofluoric acid, strong acids and bases at elevated temperatures.

SECTION 5: SAFETY SUMMARY

GHS Classification	Not classified as hazardous (OSHA HazCom 2012)
Key Precautions	Avoid breathing dust. Wear eye protection. Wash hands after handling.
Incompatibility	Do NOT use with chlorine trifluoride — violent reaction.
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, express or implied, 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.