



Adsorbents and Catalyst

ACTIVATED ALUMINAS

F-2000

Desiccant with enhanced hydrothermal stability

Product Information

F-2000 is a smooth, spherical adsorbent, custom formulated to provide enhanced hydrothermal stability under adverse operating conditions in the dehydration of a wide variety of gases and liquids. F-2000 desiccant is available as 1/8 inch and 3/16 inch spheres, packaged in vapor barrier drums, multi-wall paper bags and sling bins.

Product Benefits

1. High adsorptive capacity. The high surface area and customized pore distribution of F-2000 provides a high dynamic H₂O adsorption capacity. F-2000 provides excellent dewpoint depression, attaining H₂O effluent specification as low as -100°F (-73°C). With its resistance to hydrothermal aging, F-2000 offers excellent cyclic stability that yields a long adsorbent life, even under adverse regeneration conditions.

2. High crush strength. F-2000's high crush strength allows for the use of pneumatic loading techniques as well as the design of taller dehydration towers which optimize the performance of the desiccant. F-2000 is resistant to bases such as amines and is appropriate for the use in dehydrating acid containing gases, such as CO₂, due to its superior crush strength.

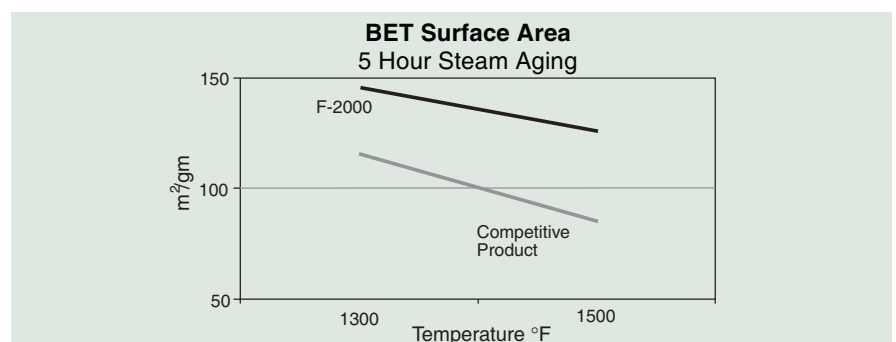
3. Low abrasion. The low abrasion of F-2000 ensures less dusting during transfer, loading, and service life. This reduces pressure drop and mini-mizes downstream valve and filter plugging, common to dustier products.

4. Uniform ball size. The uniform ball size and sphericity of F-2000 eliminates the potential for adsorbent segregation during loading or while in dehydration service. Adsorbent ball uniformity provides pressure drop reduction (versus a non-uniform ball product) and lessens the chance of fluid channeling during operation.

Typical Properties of F-2000

Physical	1/8 inch	3/16 inch
Surface area	340 m ² /gram	330 m ² /gram
Total Pore Volume	0.5 cc/gm	0.5 cc/gm
Packed Bulk Density	48 lbs/ft ³ (769 kg/m ³)	48 lbs/ft ³ (769 kg/m ³)
Crush Strength	30 lbs(13.6 kgs)	40 lbs (18 kgs)
Abrasion Loss	0.1 wt%	0.1 wt%

Chemical	wt%
Al ₂ O ₃ + proprietary modifier	93.1
Fe ₂ O ₃	0.02
Na ₂ O	0.30
LOI (250 - 1100°C)	6.5



PRODUCT DATA

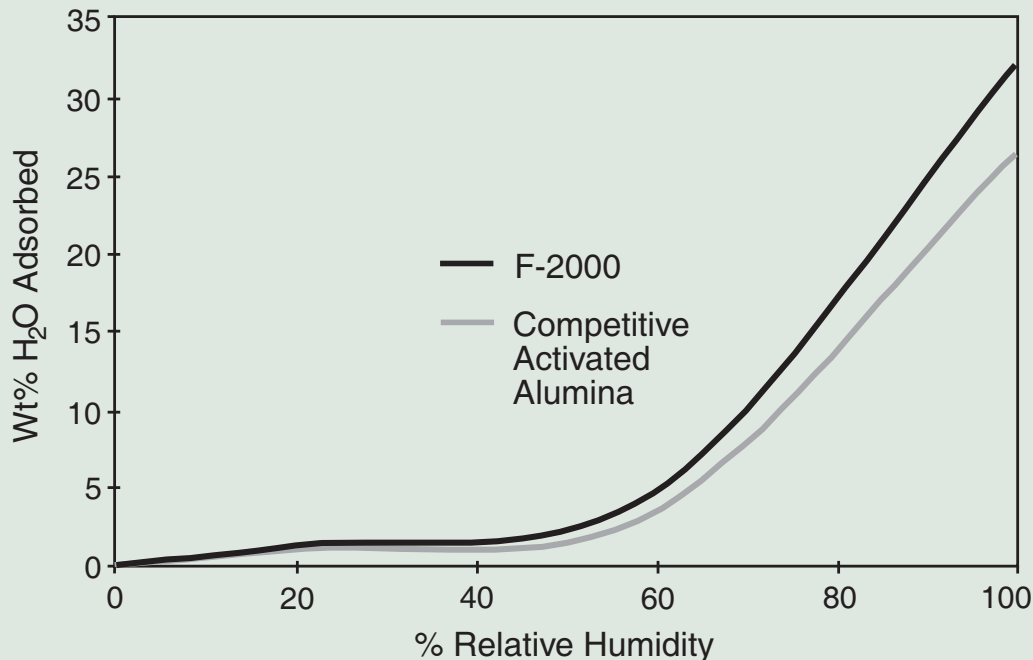
Product Applications

1. A wide variety of gases and liquids can be dehydrated with F-2000 activated alumina based desiccant. F-2000 is appropriate for use in both thermally regenerative (350 to 600°F) and pressure swing (PSA) modes.

2. With its hydrothermal stability, F-2000 is particularly suited for vapor phase dehydration applications such as "heat of compression" type-dryers and when wet gas regeneration is utilized.

As noted in the isotherm below, F-2000 retains its H₂O adsorption capacity better than competitive activated alumina products under adverse (hot wet gas) regeneration conditions.

Adsorption Isotherm for Steam-aged Activated Aluminas
F-2000 3/16" and Competitive Desiccant



Note: Artificial aging is an isothermal treatment purposely set to reduce the specific surface area of the fresh alumina to a value close to 100 m²/gm. This simulates the physical properties of a spent alumina desiccant.

Information presented herein is believed to be accurate and reliable but is not intended to meet any specification and does not imply any guarantee or warranty by Almatris.

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