



The Chemical Company

## Product Data Sheet

# F-200

## Activated Alumina for Liquid and Gas Drying

BASF F-200 is a smooth sphere of activated alumina produced by BASF's unique manufacturing process. F-200 is an excellent desiccant for drying a wide variety of liquids and gases. Although all molecules are adsorbed to some extent on F-200 activated alumina, those molecules having the highest polarity are preferentially absorbed. Stream conditions such as pressure, concentration and molecular weight of the molecules, temperature and site competing molecules affect the efficiency of adsorption. F-200 is available in nominal sizes of 1/16", 1/8", 3/16" and 1/4" spheres.

### Product Benefits

#### 1. Uniform ball size

This property is especially useful in high pressure gas dehydration where minimizing pressure drop is important. The uniform size and sphericity of BASF F-200 prevents adsorbent segregation during pneumatic loading, thus minimizing channeling and yielding more efficient use of the entire desiccant tower.

#### 2. High crush strength

BASF F-200 has high crush strength which allows rapid pneumatic loading of towers. The high crush strength also allows use of taller towers that make more efficient use of the desiccant. BASF F-200 activated alumina is highly resistant to amine attack. Furthermore, BASF F-200's high crush strength enables it to dehydrate acid containing gases and liquids, such as CO<sub>2</sub>, for a longer operating life.

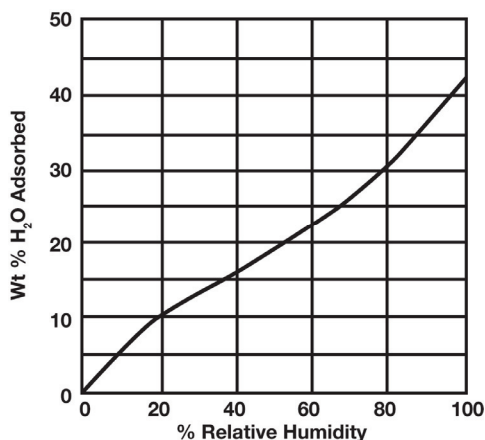
#### 3. Low abrasion

The low abrasion of BASF F-200 ensures less dusting during transport, loading, and service life which reduces pressure drop and minimizes downstream valve and filter plugging, common with dustier products.

#### 4. High adsorptive capacity

BASF F-200's high surface area and tailored pore distribution provide a high dynamic H<sub>2</sub>O adsorption capacity. With proper tower design and effective regeneration, F-200 can achieve an ultra low H<sub>2</sub>O effluent specification (i.e. dew point). BASF F-200 also has excellent cyclic stability that yields a long life.

Typical Physical Properties	7X14 Tyler Mesh (2.0 mm)	1/8" (3.2 mm)	3/16" (4.7 mm)	1/4" (6.4 mm)
Surface Area, m <sup>2</sup> /g	360	350	340	320
Total Pore Volume, cc/g	0.5	0.5	0.5	0.5
Packed Bulk Density, lbs/ft <sup>3</sup> (kg/m <sup>3</sup> )	48 (769)	48 (769)	48 (769)	48 (769)
Crush Strength, lbs (kg)	11 (5)	30 (14)	55 (25)	70 (32)
Abrasion Loss, wt %	0.1	0.1	0.1	0.1



#### Typical Chemical Composition (wt %)

Al <sub>2</sub> O <sub>3</sub>	92.7
SiO <sub>2</sub>	0.02
Fe <sub>2</sub> O <sub>3</sub>	0.02
Na <sub>2</sub> O	0.30
LOI (250-1100° C)	7.0

## Product Applications

### 1. Drying

Nearly all gases and liquids can be dried with F-200. Water removal is often necessary for efficient processing, storage and transportation of fluids. The 3/16" size is normally recommended for vapor phase dehydration applications where pressure drop minimization yet high H<sub>2</sub>O adsorptive capacity is desired. The 1/8" and 7 x 14 Tyler mesh sizes are recommended for use in liquid dehydration and other mass transfer limited adsorption applications.

BASF F-200 activated alumina is rapidly becoming the industry standard for drying compressed air. Providing long service life with performance at or below dew point specifications, F-200 is a 'peace of mind' product for both large and small dryers. BASF F-200 is appropriate for use in dehydrating gases in both thermally regenerative (350 to 600°F) and pressure swing (PSA) modes.

### 2. Acid removal

Transformer oils, lubricating oils, and refrigerants form degradation acids upon use. BASF F-200 will remove these acids during use. In the manufacture of chlorinated and/or fluorinated hydrocarbons, removal of these residual halides and water is essential for a non-corrosive product.

### 3. Process stream purification

BASF F-200 is excellent for removal of highly polar compounds such as water and alcohol. It also readily adsorbs TBC and heavy metal ions from hydrocarbons.

### 4. Hydrocarbon adsorption

Under proper operating conditions, the pore size distributions and surface chemistry of activated aluminas are conducive to the adsorption of hydrocarbons.

## Available Packaging

- 50 lb bags
- 375 lbs steel drums
- 2000 lb super sacks

## About Us

BASF's Catalysts division is the world's leading supplier of environmental and process catalysts. The group offers exceptional expertise in the development of technologies that protect the air we breathe, produce the fuels that power our world and ensure efficient production of a wide variety of chemicals, plastics and other products. By leveraging our industry-leading R&D platforms, passion for innovation and deep knowledge of precious and base metals, BASF Catalysts develops unique, proprietary catalyst and adsorbent solutions that drive customer success.

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All data represents typical product properties and are based upon BASF standard test methods. All test methods are available upon request.

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