

ACTIVATED ALUMINA®



GMGB manufactures activated alumina beads in two sizes : 2-5mm dia, and 5-8mm dia by the State of the Art technology. The products have at least equal to and, in some cases, better properties than what have been specified in the Bureau of Indian Standards: BIS 9700 (Revised 1991). Specifically it has very high water adsorption capacity, and mechanical strength, and at the same time very low attrition loss. Its main application is in air drying; however, it may be used favourably for purification of drinking water (fluoride removal), and removal of acidic vapours from gases. The robust nature of the product makes it suitable for application in high pressure. GMGB Activated Alumina is designed to give a dew point of at least -40^o C in most conditions. However, in case of rigorous adsorptive drying under high pressure, in case of rigorous adsorptive drying under high pressure, the moisture content in the exit gas or air may go down to less than 1 ppm (i.e. a dew point of - 70^o C and better.)

Specification



Particle form :- Spheres				Spheres
Particle size :- 2-5 mm and 5-8 mm dia balls.				1.5 -2.5 mm dia Spheres
PHYSICO-CHEMICAL PROPERTIES	UNIT	GMGB AD 101	GMGB AD 202	Alumina (PE)
Physical Appearance				Amorphous White Granules
Equilibrium Water Adsorption Capacity at 30 and 60 % RH	% w/w	20 - 26	14 - 16	--
Surface Area (BET Method)	M ² /g	300 - 425	250 - 325	270 - 360
Pore Volume	Cc/g	0.4 - 0.5	0.3 - 0.35	--
Loss On Ignition (250 - 1000 deg. C)	% w/w	4.5 - 8.0	4.5 - 8.0	6 - 9
Crushing Strength (Active)	Kg.	9 - 15	9 - 15	4 - 8
Attrition Loss on Tumbling	% w/w	0 - 0.4	0 - 0.4	0 - 0.4
Free Moisture (Max)	% w/w	1.5	1.5	1.5
Bulk Density	g/L	750 - 850	800 - 950	700 - 870
Bed Crushing Strength	%	90 - 99	90 - 99	--
Size Tolerance Max (Over size / under size)	%	5.0	5.0	Over 7 mesh 5.0 max Over 12 mesh 95 Min Under 20 mesh 1.0 max

Note

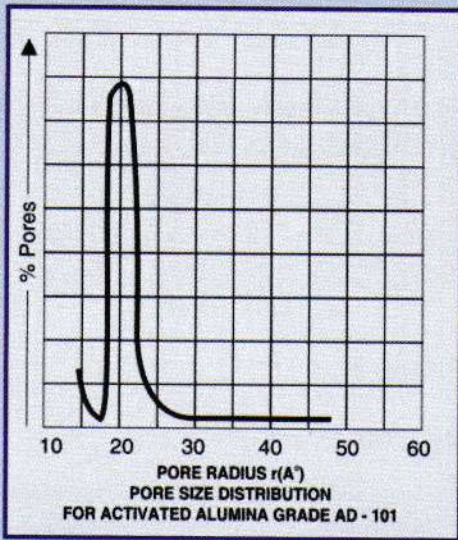
- Surface Area by benzene adsorption method. The values are lower when measured by BET nitrogen method (300-350 gm). Owing to carcinogenic threat to environment, safe method of nitrogen adsorption is adopted.
- For spheres of more than 5 mm diameter the specific surface and water adsorption capacity values are approximately 10% lower than the above figures.



GUJARAT MULTI GAS BASE CHEMICALS PVT. LTD.
Opp. ONGC Colony, Palavasna, Mehsana-384003. INDIA



Science in the service of Industry & Environment



Packing

Activated Alumina is packed for industrial use in airtight MS drums under hot condition with proper sealing arrangement so that there is no ingress of moisture during storage and transportation. Standard Packing : 210 Lit drum size 565 x 850 (H) mm.

Life :

Activated Alumina has infinite shelf life, when stored in packed condition. The active service life would depend, however, on the operating conditions of the plant, actual application, and the usage by the customer.

Loading:

Activated Alumina does not require any special precaution or procedure during loading. However, the health of the grid support is to be checked, and the vessel is to be cleaned of dust, foreign particles, etc. before the adsorbent is loaded. During actual loading, the material should be poured carefully through funnel and chute so as to avoid dusting and attrition. The drums should not be kept in open condition, as the adsorbent would adsorb moisture. In case of prolonged exposure of the adsorbent to moisture during storage / loading, it may require prolonged regeneration at higher temperature to restore its full adsorptive capacity

Material Safety Data :

The product as such is neither inflammable, nor toxic. Over all, it is not hazardous. Repeated exposure may irritate skin, eyes and respiratory system. The product gets hot as it is first exposed to atmosphere due to adsorption of moisture.

Regeneration :

Activated Alumina should be regenerated before first use. The regeneration temperatures range from 150⁰ - 180⁰ C. The higher the regeneration temperature, the longer the operating cycle time and the lower the exit dew point of the gas. Where high efficiency is needed (dew point better than -50⁰ C), a regeneration temperature of at least 180⁰ C is required. If the regeneration gas is wet, a higher regeneration temperature of 200⁰ -250⁰ C is required. For a better performance over prolonged period, GMGB's Activated Alumina should not be exposed to temperatures above 350⁰ C repeatedly.

Applications :

1. Air Drying for Dew Point of less than (minus)-40⁰ C
2. Drying of Feed Air to N₂-O₂ Cryogenic Plant
3. Purification of Process Stream by removing HF (LAB Plant), Chloride / HCl from Contaminated gas flow.
4. Catalyst Residue Removal from Poly Ethylene Product. Heavy metals and color removal from PE product.

