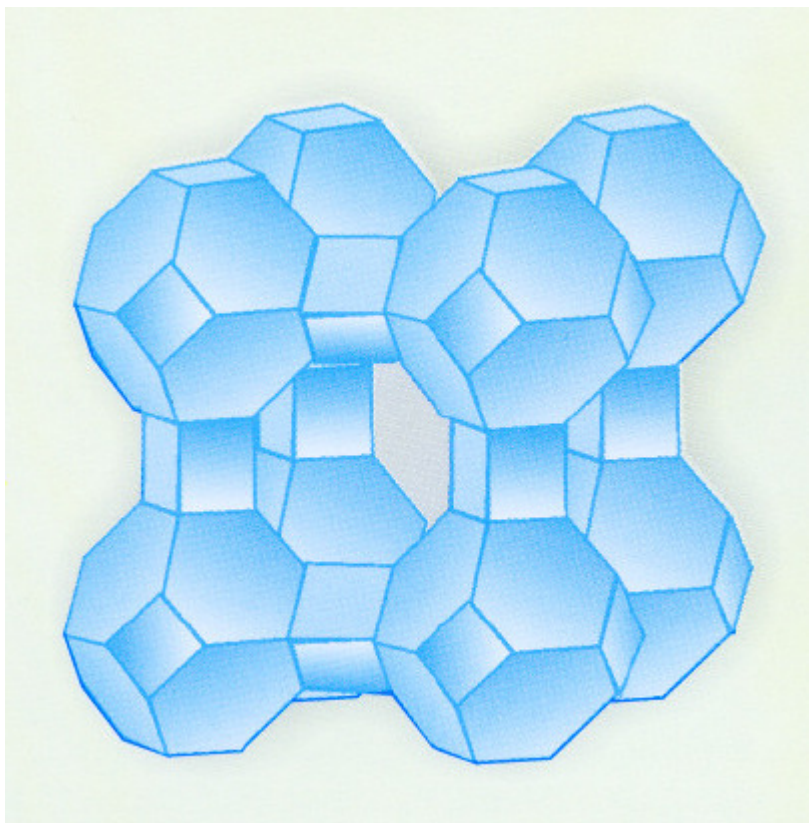


MOLECULAR SIEVES 13 X



Molsieve 13 X sieve is a crystalline aluminosilicate with SiO_2 to Al_2O_3 more than 2. It is formed by extensive cross-linking of AlO_4 & SiO_4 tetrahedra, resulting in a uniform pore opening of 0.9 – 1.0 nm. Keeping in mind the customers requirements, our manufacturers manufacture the 13X Molecular Sieve in 3 forms: 1.5 mm dia & 3 mm dia extruded pellets, 1.5 – 3.5 mm dia spheres by the state of the art technology in its plant at Mehsana. The products have equal to & in some cases better properties than what have been specified in the Bureau of Indian Standards: BIS

14211 : 1994. Specifically it has very high adsorption capacity, & mechanical strength, & at the same time very low attrition loss. Its main application is in the purification of air in cryogenic plants: however it may be used favorably also in applications requiring stringent moisture & CO_2 removal as well as for removal of larger molecules like mercaptans from LPG. We use clays from our own mines in the manufacture of this product, ensuring better control & uniformity in the quality of the final product.



Specifications:

Nominal pore diameter : 1.0 nm							
Form : Cylindrical pellets & spheres							
	Unit	1.5 mm dia cylindrical pellets		3.0 mm dia cylindrical pellets		1.5 – 3.5 mm spheres	
		Range	Typical	Range	Typical	Range	Typical
Equilibrium water Adsorption Capacity at 30°C and 15% RH	% w/w	20-23	21.0	20-23	21.0	23-26	24.5
Equilibrium water Adsorption Capacity at 30°C and 75% RH	% w/w	23-27	26.0	23-27	26.0	24-28	26.5
Thermal stability after 600°C Equilibrium Water Adsorption Capacity at 30°C and 15% RH	% w/w	20-23	21.0	20-23	21.0	23-26	24.5
CO ₂ Adsorption Capacity under 760 mm Hg and at 30°C	% w/w	19.0-20.5	19.5	19.0-20.5	19.5	21-25	20.0
Crushing strength (Active)	Kg	2.0-6.0	4.0	5.0-12.0	7.0	4.0-7.0	5.0
Attrition Loss on Tumbling	% w/w	0.02-0.2	0.1	0.02-0.4	0.2	0.02-0.25	0.1
Free Moisture (Max.)	% w/w	1.5	-	1.5	-	1.5	-
Bulk Density	Kg/Lit	0.55-0.63	0.58	0.55-0.63	0.57	0.60-0.68	0.63
Bed Crushing Strength	%	80-90	87	80-90	90	80-90	85



Packing:

MOLSIEVE 13X is packed for industrial use in airtight MS drums under hot conditions with proper sealing arrangements so that there is no ingress of moisture during storage & transportation. **Standard Packing:** 210 Ltr. Drum. **Size:** 565 X 850 mm



▲ MOLSIEVE 13X in pellets form



▲ MOLSIEVE 13X in Beads form

Life:

MOLSIEVE 13X 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 & the usage by the customer.

Loading:

MOLSIEVE 13X does not require any special precaution or procedure during loading. However, the health of the grid support is to be checked, & 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 & chute so as to avoid dusting & 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 flammable nor toxic. Over all, it is not hazardous. Repeated exposure may irritate skin, eyes & respiratory system. The product gets hot as it is first exposed to atmosphere due to adsorption of moisture.



Regeneration:

MOLSIEVE 13X should be regenerated thermally or by evacuation with simultaneous purge. For thermal regeneration, the adsorbent may be heated to 110° to 120°C for removal of CO₂. for simultaneous removal of H₂O & CO₂, the adsorbent should be heated to 100° - 200 °C. However, the exact regeneration condition (temperature, purge gas flow, etc.) depends on the application, feed quality & other operating conditions.

Applications:

1. Simultaneous removal of Moisture & CO₂ from feed air of air separation / cryogenic plant.
2. Mercaptans removal from gaseous streams.
3. Process air drying of dew point less than -60 °C for sulphonation plant.
4. Sweetening of Natural Gas.
5. Removal of H₂S from gaseous streams.

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