

Technical Specification for Carbon Molecular Sieve



Nitrogen generation by Pressure Swing Adsorption (PSA) process is a technology used to separate nitrogen from a mixture of gases under pressure according to the special selective adsorption characteristics of the Carbon Molecular Sieves (CMS).

The Carbon molecular sieve is a material containing tiny pores of a precise and uniform size that is used as an adsorbent for gases. When the pressure is high enough, the oxygen molecules, which pass through the pores of CMS much faster than the nitrogen molecules, are adsorbed, while the coming out nitrogen molecules will be enriched in gas phase. The enriched oxygen air, adsorbed by the CMS, will be released by reducing the pressure. Then the CMS is regenerated and ready for another cycle of producing nitrogen enriched air.

Physical properties

Diameter of the CMS granule: 1.7-1.8mm

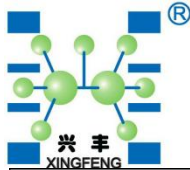
Period of adsorption: 120S

Bulk density: 680-700g/L

Compressive strength: ≥ 95N/ granule

Technical Parameter

Type	Adsorbent pressure (Mpa)	Nitrogen concentration (N2%)	Nitrogen quantity (NM3/h.t)	N2/Air (%)
CMS-200	0.6	99.9	120	32
		99.5	200	42
		99	300	48
	0.8	99.9	130	31
		99.5	235	40
		99	340	46
CMS-220	0.6	99.9	135	33
		99.5	220	41
		99	330	44
	0.8	99.9	145	30
		99.5	252	41
		99	370	47
CMS-240	0.6	99.99	70	22
		99.9	130	32
		99.5	190	41
	0.8	99.99	92	22
		99.9	180	32
		99.5	240	42
CMS-260	0.7	99.99	140	27
		99.9	255	39
		99.5	310	49



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	0.8	99.99	165	27
		99.9	270	40
		99.5	335	49

Service scope

The following merits of service:

- High ratio performance & price, reducing investment cost and operation cost.
- Large hardness, little ash, long service life, uniform particles which protects air current impact.
- Stable quality: Testing strictly according to 100% standard of production and ex-factory testing management.
- The resin uses in producing the high pure nitrogen with good performance which substitutes the similar import products.

PSA Nitrogen Generation Process

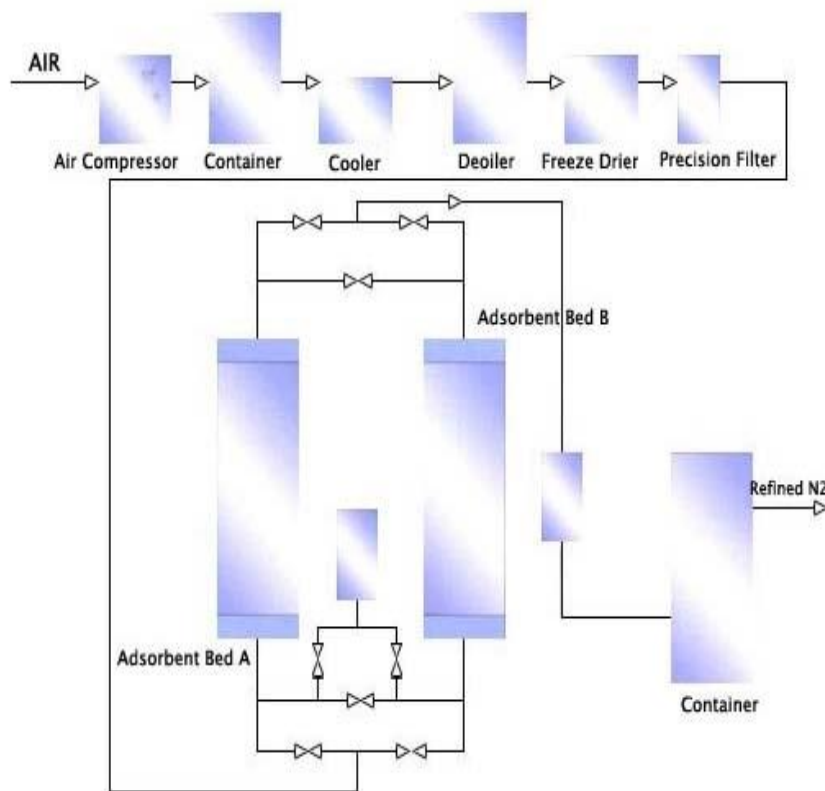
1) Air Feed System

The environmental air supplied to the PSA system should be compressed and purified to get rid of the dust, the oil and water.

2) PSA Nitrogen Generation System

While the compressed and purified air flows through the adsorbent bed with CMS inside in a bottom up way under the pressure of 0.6MPa, the oxygen molecules will be adsorbed by the solid surfaces of the CMS, and the enriched nitrogen will be output from the top of the bed to the container.

When the adsorbent bed reaches the end of its capacity to adsorb oxygen, it can be regenerated by reducing the pressure, thereby releasing the adsorbed oxygen. Using two adsorbent beds to absorb and regenerate in turn allows producing continuous nitrogen in cycle.



Package



20KG OR 40KG PLASTIC DRUM, PALLETIZED



137KG PLASTIC DRUM, PALLETIZED

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