Hydrogen Nitrogen Separation Psa In Hydrogen Gas Generation 150Nm3/Hr New Clean Energy

Our Product Introduction

Basic Information

- Place of Origin: SUZHOU, CHINA
- Brand Name: SUMAIRUI GAS
- Certification: ISO9001, CE, BV, SGS, TUV, ASME, GOST,NB,NR ETC
- Model Number: OSH-100
- Minimum Order Quantity: 1 set
- Price: Negotiable
- Packaging Details: Exporting wooden case /Film packing
- Delivery Time: 30-45 days
- Payment Terms: L/C, T/T, Western Union, MoneyGram
- Supply Ability: 100 sets/months

Product Specification

- Material: Mild Steel
- Capacity: 100 Nm3/hr
- Purity: 99.99-99.999%
- Pressure: 10 Bar
- Dew Point: -60 ℃
- Towers: 4
- Operation Mode: Fully Automatic
- IP Grade: IP54
- Explosion-Proof: Customized
- Application: Green & New Field
- Highlight: **psa in hydrogen gas generation**, **hydrogen nitrogen separation psa**, **psa hydrogen separation**

Our Product Introduction

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Product Description

PSA hydrogen generator with CE/SGS/TUV certificates capacity 150Nm3/hr for new clean energy application

Separation by adsorption

The Pressure Swing Adsorption (PSA) technology is based on a physical binding of gas molecules to adsorbent material. The respective force acting between the gas molecules and the adsorbent material depends on the gas component, type of adsorbent material, partial pressure of the gas component and operating temperature. A qualitative ranking of the adsorption forces is shown in the figure below. The separation effect is based on differences in binding forces to the adsorbent material. Highly volatile components with low polarity, such as hydrogen, are practically non-adsorbable as opposed to molecules as N2, CO, CO2, hydrocarbons and water vapour.

Consequently, these impurities can be adsorbed from a hydrogencontaining stream and high purity hydrogen is recovered. Adsorption and regeneration The PSA process works at basically constant temperature and uses the effect of alternating pressure and partial pressure to perform

Adsorption and desorption.

Since heating or cooling is not required, short cycles within the range of minutes are achieved. The PSA process consequently allows the economical removal of large amounts of impurities. The figure on page 5 illustrates the pressure swing adsorption process. It shows the adsorption isotherms describing the relation between partial pressure of a component and its equilibrium loading on the adsorbent material for a given temperature. Adsorption is carried out at high pressure (and hence high respective partial pressure) typically in the range of 10 to 40 bar until the equilibrium loading is reached. At this point in time, no further adsorption capacity is available and the adsorbent material must be regenerated. This regeneration is done by lowering the pressure to slightly above atmospheric pressure resulting in a respective decrease in equilibrium loading. As a result, the impurities on the adsorbent material are desorbed and the adsorbent material is regenerated. The amount of impurities removed from a gas stream within one cycle corresponds to the difference of adsorption to desorption loading.

After termination of regeneration, pressure is increased back to adsorption pressure level and the process starts again from the beginning.

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