

H2 Generation Systems for H2 Applications: DAPSA

>> modularized Dissociated Ammonia + Pressure Swing Adsorption systems with proven performance.

Gulf Gases introduces DAPSA for H2 Generation. DAPSA is built on a simple, innovative combination of two proven and reliable platforms - Dissociated Ammonia and Pressure Swing Adsorption. DAPSA safely delivers reliability and high purity H2 at low cost. Gulf Gases offers a wide range of DAPSA H2 system sizes - even an option for ultra high purity at 99.9999%. Contact Gulf Gases today to find out how you can implement this safe and cost effective H2 supply system to meet your needs.



Generate 99.999% Pure Hydrogen at a low cost.

Gulf Gases will work with you to understand your unique application requirements, then design, build & deliver the right configuration in a system that's correctly optimized for generating H2 at high purity levels.

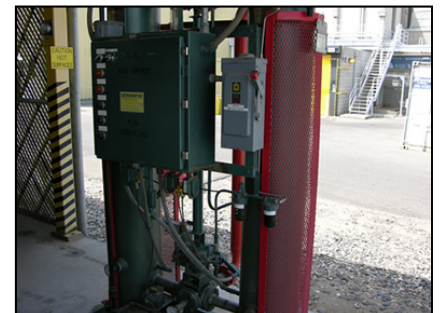
Produce 1,000 SCFH up to 25,000 SCFH of H2.

Applications:

- Generate low cost H2 for metal heat treating applications such as annealing, sintering and brazing.
- H2 production for specialty chemical manufacturing,
- H2 for glass manufacturing, glass polishing and cutting,
- Make high purity 99.9999% H2 for many different electronics manufacturing operations,
- DAPSA units can be sized and used as peak shaving volumes for higher volume base loads such as in chemical plant and refinery applications,
- Produce high purity H2 for PEM fuel cell power generation applications, both stationary and mobile uses,
- H2 from DAPSA units can be sized to meet food oil hydrogenation unit demands,
- DAPSA H2 can be used wherever gas or liquid H2 is being delivered today.

Benefits:

- **Rapid Installation** - units arrive totally prefabricated, ready to connect and run,
- **Low Maintenance** - no moving parts, very little annual maintenance,
- **Long Life** - modules can run for many years before replacements are required,
- **Fully Automated** - no manpower required for operation,
- **High Reliability** - continuous, constant production and dependable product quality,
- **Monitor & Control** - automated monitoring and controls make any necessary adjustments automatically,
- **Low Cost** - very low capital, operating & maintenance costs.

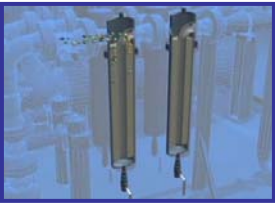


DAPSA Systems for H2 Applications

Process Flow:



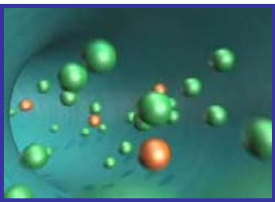
Easy & fast integration of feed and product lines to Generation Units



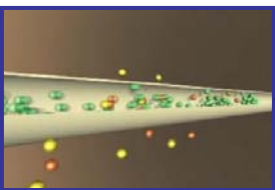
Pre-treatment with Coalescing Filtration Units



Post-treatment with Active Cycling Gas Dryer Modules



Ammonia Dissociates as NH3 to form a 75% H2 & 25% N2 mix

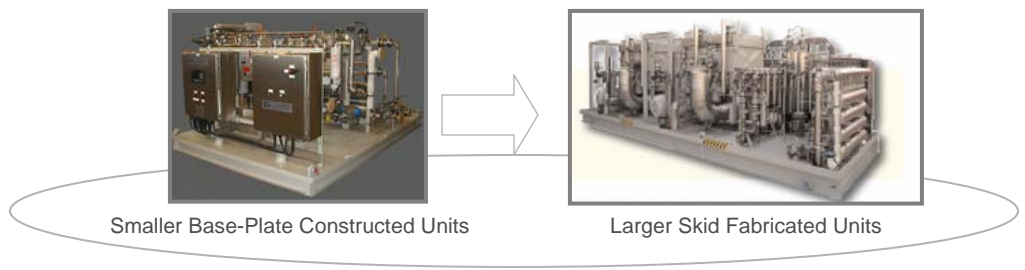
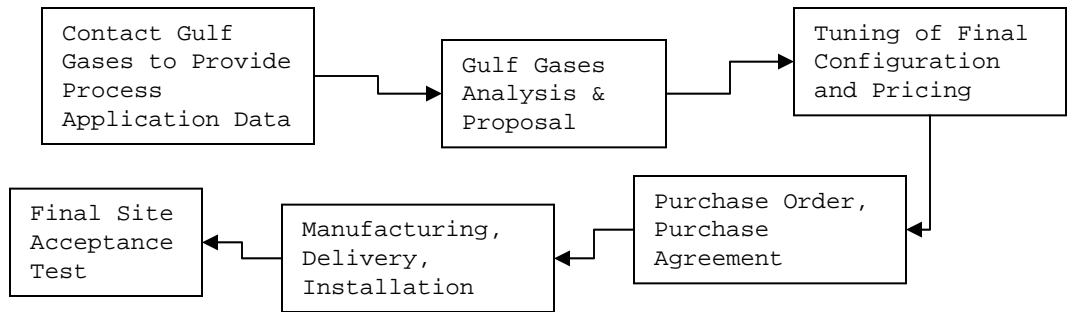


The 75/25 Gas is Processed by PSA to Produce 99.999% Pure H2

Specifications:

Parameter	Design
Feed Flow Rates	Size Ranges from 1,000 up to 25,000 scfh
H2 Product Pressure	175 psig
Operating Temperature	From -10 F to 130 F
Electric Power	220V or 480V, 60 Hz, 3 phase
Cooling Water	1 to 3 gpm
Unit Weight	1,000 to 25,000 lbs per skid
H2 Product Recovery	99.999% to 99.9999%
Control System	PLC-based
Remote Monitoring	Option
Product Analyzer	Option
Flowmeter	Standard
Electrical Classification	Standard is Non-Haz., Optional is Haz.
Pre-Filtration	Standard
Fully Fabricated, Skid Built	Standard
Typical Delivery	3 to 4 months after order

Project Development Steps:



For **More Information**, contact Gulf Gases at 281-454-4224, or support@gulfgases.com