

## Hydrogen Purification Technology

### Summary

Advanced state of the art hydrogen purification technology from the world leader in hydrogen production.

### Overview

Air Products, as a world leader in hydrogen production and purification, is offering for license patents covering both preferred adsorbents and cycles useful for hydrogen purification. These cycles and adsorbents have all been demonstrated in use at commercial facilities.

### Benefits:

- Improved H<sub>2</sub> recovery.
- Decreased cycle time.
- Ability to separate H<sub>2</sub> and CO<sub>2</sub> simultaneously.
- Minimizes off-gas concentration.

Priority Patent / Docket No.	Title	Status	Grant Date
US 6,027,549	Adjusted Density Carbon for Hydrogen PSA	Issued	2/22/2000
US 6,302,943	Optimum Adsorbents for H <sub>2</sub> Recovery By Pressure and Vacuum Swing Adsorption	Issued	10/16/2001
US 6,379,431	Pressure Swing Adsorption Process With Multiple Beds on Purge And/Or With Ten Beds and Four Pressure Equalization Steps	Issued	4/30/2002
US 6,454,838	Six Bed Pressure Swing Adsorption Process with Four Steps of Pressure Equalization	Issued	9/24/2002
US 6,565,628	Pressure Swing Adsorption Process With Reduced Pressure Equalization Time	Issued	5/20/2003
US 6,483,001	Layered Adsorption Zone for Hydrogen Production Swing Adsorption	Issued	11/19/2002
US 6,261,343	Use of Activated Carbon Adsorbent in Argon and/or Oxygen Controlling Hydrogen PSA	Issued	7/17/2001
US 6,814,787	Layered Adsorption Zone for Hydrogen Production Swing Adsorption	Issued	11/9/2004

**Also Offered:**

Air Products has extensive know-how in both the design and operation of systems using these patents. Technology transfer is available for a limited time on a fee basis.

**Availability:**

Air Products is offering licenses to practice this technology worldwide.

For more information on licensing this technology contact:

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