

# Hydrogen Pressure Swing Adsorption (PSA) Services and Solutions



**Air Products owns and operates more than 70 PSA systems worldwide for the purification of hydrogen.**

Air Products is a market leader for safety, technology, innovation and operational excellence. Founded more than 75 years ago, Air Products is a \$10 billion company with operations in over 50 countries. Air Products is the world's leading third party provider of hydrogen. We operate over 100 hydrogen plants and have 1500 years of operating experience. When it comes to hydrogen, no other company has our level of operational experience and expertise. Chances are that we have already seen, and solved, issues you are having with your hydrogen plant in our own fleet. Our experience gained from years of design and operation is the key to providing a plant assessment with a focus on solutions. Put our operational expertise to work for you.

## What we can offer

Studies customized to your individual objectives, such as productivity, reliability, operability improvements, capacity expansion, feedstock flexibility, mechanical integrity improvements, etc. These studies are normally conducted in two phases to develop the best solutions for your particular facility.

- Phase 1—Baseline current performance and gap analysis versus industry best practices
- Phase 2—Detailed evaluation to meet your goals, including economic justification and recommendations.

After the study, Air Products can provide specific implementation services such as design, installation, construction management, operator training, and start-up support. We can also stay involved with your operations to provide ongoing support if needed.

## To improve your hydrogen productivity, Air Products also offers:

- Extensive PSA system modeling and analytical resources
- Alliances with other experts in the industry, to develop the best solutions for your facility
- Program implementation and ongoing operational support

## Success stories, put our expertise to work for you.

### Success story 1

A large Air Products' hydrogen plant in California needed to be debottlenecked for additional capacity, quickly and cost effectively. The plant had two limitations: PSA capacity and reformer firing restrictions due to the air permit. Air Products was able to overcome these limitations by creatively reloading the PSA adsorbents which increased PSA capacity and also improved overall hydrogen recovery from the PSA unit. No additional firing was needed in the reformer furnace to get the additional hydrogen molecules.

### Success story 2

For PSA units in general, low level impurities accumulate in adsorbents and cause capacity reduction over time. Air Products has developed a detailed regeneration procedure based on actual plant data analysis and rigorous simulation. For one of our facilities in Texas, after 15 years of operation, we were able to completely recover the degraded PSA capacity and hydrogen recovery to its original design. This procedure was successfully replicated in other Air Products hydrogen PSA plants.



For more information,  
please contact us at:

#### Americas

Air Products and Chemicals, Inc.  
1940 Air Products Boulevard  
Allentown, PA 18106-5500  
T: 1-800-551-2995  
ESPSinfo@airproducts.com

#### Europe, Middle East, Africa

Air Products PLC  
Hersham Place Technology Park  
Molesey Road  
Walton-on-Thames  
Surrey KT12 4RZ  
UK  
T +44 1932 249200  
ESPSinfo@airproducts.com

#### China

Air Products and Chemicals (China)  
Investment Co. Ltd.  
East Wing, Floor 1  
Building #88, Lane 887  
Zu Chongzhi Road  
Zhangjiang Hi-Tech Park  
Shanghai, 201203  
P.R. China  
T +86-21-38962569  
ESPSinfo@airproducts.com

#### India, Southeast Asia

Prodair Air Products India Pvt Ltd.  
602, Pentagon 5  
Magarpatta City  
Hadapsar, Pune – 411013  
Maharashtra, India  
T +91-20-49115252  
ESPSinfo@airproducts.com



tell me more  
[airproducts.com/H2-PSA](https://airproducts.com/H2-PSA)