



WHY YOUR PSA REVAMP SHOULD START WITH A RELOAD

Realize the potential of your hydrogen assets with
a high-performance adsorbent reload.

Honeywell
UOP

If you're looking for a cost-effective way to increase hydrogen recovery and/or capacity in your UOP Polybed™ Pressure Swing Adsorption (PSA) unit without impacting purity, consider a high-performance adsorbent reload to increase your throughput.

UOP manufactures their own adsorbents and can tailor those adsorbents to the specific requirements of your PSA process — including performance, physical and hydraulic properties. This competitive edge enables you to increase unit capacities without the need to increase the number of adsorber vessels.

ARE YOU GETTING THE MOST OUT OF YOUR ASSETS?

Here are three signs it's time for unit optimization.

- 1 Demand to get more out of your investment has been increasing.**
Adsorbent reloading is one of the most cost-effective ways to get more out of your hydrogen PSA unit and improve the use of existing equipment to increase hydrogen recovery.
- 2 Hydrogen recovery hasn't kept up with increasing demand.**
If your PSA system's actual hydrogen recovery isn't up to spec, your current adsorbent may be underperforming.
- 3 You're looking for ways to do more with less.** You need to optimize hydrogen recovery without installing a new unit while keeping purity on-spec.

WHY RELOAD WITH HIGH-PERFORMANCE ADSORBENTS?

Reloading your hydrogen PSA unit with the latest-generation high-performance adsorbent can help you:

- Boost the hydrogen recovery of the PSA unit
- Increase unit throughput
- Improve unit performance

Getting more from your assets doesn't need to mean installing a new unit. A hydrogen PSA adsorbent reload with the latest high-performance products can deliver return on investment in a matter of months, not years.

Contact your Honeywell UOP representative to learn more about high-performance adsorbents.

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* The \$8 million additional revenue is based on 10% additional capacity and an additional 1% point in recovery from an existing UOP-supplied PSA unit before 2015 without an adsorbent reload revamp which has 89% recovery and a product flow of 100,000 Nm³/hr, using an H₂ price of \$1,000/MT (chemical minus fuel), a standard Steam Methane Reforming Hydrogen Production Unit syngas composition and H₂ purification product specification (H₂ = 99.9 mol% and CO = 10 ppmv).

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HANDLE 10% MORE FEED GAS WITHOUT INSTALLING A NEW UNIT.

High-performance adsorbents have a higher selectivity for CO or N₂, a higher loading capacity and higher density, compared to standard adsorbents. For a fixed adsorber volume, more impurities can be adsorbed and thus, about 10% more feed gas can be handled with a 1% improvement in recovery. This can result in more than \$8 million per year in additional revenue.*



UOP adsorbents remove impurities to help you reduce costly unplanned shutdowns and meet product specifications.



With more than 1,100 Polybed PSA units, UOP is a world-leading supplier of PSA technology for hydrogen purification.

**THE
FUTURE
IS
WHAT
WE
MAKE IT**

Honeywell