



Hydrogen

The ChemPro Group, LLC (ChemPro) is a technology-based multi-disciplined engineering company specializing in process modularization. We are known for our innovative designs, value-added systems, and reliable service. We provide custom designed, integrated hydrogen generation and purification systems, using proprietary technology.

Hydrogen is widely used throughout the processing industries including refining, petrochemical, steel, glass manufacture, electronics and food production. In the past, many users purchased their hydrogen requirements through various supply schemes: liquid, pipeline, tube-trailer, or cylinders. As hydrogen demands have steadily risen and supply prices continually escalated, many users are considering the alternate – to produce their own hydrogen on demand, in a cost-effective on-site modular plant.

ChemPro Systems Are The Solution.

The ChemPro Hydrogen Solution

ChemPro offers complete modular hydrogen generation and purification plants.

- Our hydrogen generation uses dependable, conventional steam-reforming technology. Our own cylindrical reformers are customized for our client's specified feedstock, such as natural gas, LPG, naphtha, as well as methanol.
- Our hydrogen purification system uses Pressure Swing Adsorption (PSA) technology. Our PSA system is an integrated system within our complete hydrogen plant or it may be used as a modular, stand-alone system for the recovery of hydrogen from enriched gas streams
- Our proven hydrogen process design offers a truly integrated high-purity hydrogen production plant with fully optimized reformer and purification systems.
- ChemPro offers complete waste heat recovery and high steam export design options for our standard hydrogen plant.
- ChemPro plants are customized to our client's exact process requirements and product specifications. Our modular systems meet all local fabrication codes and regulations, as well as provide safe and reliable operation around the world.
- ChemPro plants are fabricated and delivered as prefabricated modules anywhere in the world for installation on site by others.
- ChemPro offers complete commissioning, startup, operator training and long-term technical support.



The ChemPro Steam Reforming Process Plant

Our hydrogen production technology is steam reforming. A hydrocarbon feedstock is mixed with steam and heated in the presence of a catalyst to produce a crude hydrogen stream that is then purified. Common hydrocarbon feeds are natural gas, butane, propane, LPG and naphtha.

ChemPro uses its well-proven cylindrical steam reformer. A single reformer is typically used for hydrogen capacities 100Nm³/hr up to 5,000N³/hr and above 5,000N³/hr; we offer multiple cylindrical reformer designs.

We use our in-house modular PSA system to purify the reformer's crude hydrogen to achieve >99.999% hydrogen purities.

Our standard hydrogen plant is a complete, integrated production/purification system. We offer complete waste heat recovery and high export steam design options to supplement our standard plant.

Reliable, Proven Design

With years of experience, ChemPro modular plants are designed and built to the highest standards, with efficiency, reliability and safety as the prime criteria. Our emphasis on quality ensures that our client has a plant that continues to run year after year, with maximum availability and minimum operator input. Every ChemPro plant is designed to minimize emissions in accordance with the latest environmental standards.

Each ChemPro plant is designed and built to its client's specific requirements: feedstock, product specifications, and energy recovery options. The disciplined and focused engineering that goes into our systems/plant designs ensures compliance with the most stringent HAZOP reviews.

Modularization

ChemPro process plants are built and delivered as modules for final installation on site.

Modularization reduces lead-time to startup, lowers fabrication costs, minimizes on-site construction delays, reduces installation costs and limits the interruption of the client's normal plant operations. Modular construction is a cost-effective solution and maintains tight control of fabrication quality and project program in a regulated environment.

Chem-Pro plant layouts are based upon years of modular design and construction experience, and offer maximum accessibility of all equipment, valves, and instruments for ease of operation and maintenance. Our modules are fully piped, wired, assembled, marked, and tested at the fabrication shop.



The assembled modular plant is available for inspection and operator training, prior to shipment. The modules are then taken apart and shipped to the site for reassembly and a problem-free startup.

On-site Installation and Commissioning

When it comes to on-site construction, ChemPro offers its clients a choice. ChemPro can provide an experienced technical supervisor to advise its client's local team or, if applicable based on location, a complete lump sum turnkey option. Our lump sum turnkey option allows the client to place only a single purchase order and ChemPro will take responsibility for the plant from design right through to production of gas.

Key Benefits of Choosing a ChemPro Hydrogen Plant

Key benefits for selecting a ChemPro plant as your next hydrogen plant are:

- Proven technology
- Reliable designs
- Technical options selections to fit your needs
- Integrated reformer and purification systems
- Fast, cost-effective modular construction
- In-shop Quality Control
- Continuing after-sales service
- Spare Parts replacement program
- Flexible purchase options
- **ChemPro offers a complete one-stop package**

