

PARC Pilot Plant Testing Services Overview



Intertek PARC pilot plant testing allows our clients to evaluate new and existing catalyst and process technologies, generate real time process data to support the design basis for commercial applications, optimization of production facilities, post mortem troubleshooting of refinery operations and toll production of drum quantities. The thirty-three process pilot plants, located in Pittsburgh, PA, US, have process technologies ranging from crude oil introduction by desalting and distillation through the various bottom of the barrel upgrading applications.

The Proposition

To mitigate technical risk via a low cost determination of processing technology feasibility and commercial scale-up success. This is done quickly and effectively through process pilot plant research working hand in hand with our client base which is comprised of academia, cleantech startups, engineering firms, government organizations, process technology licensors and refiners. Processing options include conversion processing, distillation, physical processing and thermal processing applications.

PARC offers the flexibility to modify our existing equipment and flow schemes, install client provided equipment or acquire new commercially available equipment, as needed, to closely replicate the preferred process configuration.



Our Solutions

Around-the-clock attended unit operations and analytical controls enable accurate, cost effective and timely process technology evaluations. The process pilot plants include computer data logging, on-stream refinery gas analyzers and hourly material balance reporting. Each and every program is treated with the utmost level of confidentiality. Any data generated during the performance of a pilot plant testing program remains the intellectual property of our respective clients.

Our portfolio consists of delayed coking, desalting, distillation, hydroprocessing, solvent refining and thermal cracking pilot plants. In our 25+ years of operation as an independent testing services provider, we have handled conventional and unconventional feedstocks including biostocks, distillates, gasoils, naphthas, petrochemicals and resids.

Hydroprocessing

Fixed bed catalytic units which are each rated for a minimum of 207 bar and 427C include:

- P63 & P67 each include 2-2.5 L catalyst capacity reactors, inter-bed H₂ quench, gas recycle, liquid recycle, one pressure tower, two atmospheric towers and two vacuum towers and feed rates ranging from 1-5 L/h.
- P69 includes a 12 L and a 5 L catalyst capacity reactors, inter-bed H₂ quench, gas recycle and feed rates ranging from 5-34 L/h.
- P84-P88 each include 2-0.434 L catalyst capacity reactors, gas recycle, liquid recycle, one pressure tower or one atmospheric tower and feed rates ranging from 0.1-0.8 L/h.
- P106-109 and P110-113 each include 4-0.128 L catalyst capacity reactors housed in a common alumina heating block with feed rates ranging from 0.05-0.3 L/h.

Through a secure internet based access point, our clients can retrieve real-time hourly unit operating data for process monitoring anywhere in the world for applications that include:

- Aromatics Saturation
- Catalytic Dewaxing
- Fisher-Tropsch
- Hydrocracking
- Hydrodeoxygenation
- Hydrodesulfurization
- Hydrodenitrification
- Hydrogenation
- Hydrofinishing
- Isomerization
- Reforming

Non-hydroprocessing

- P2 and P3 are dual purpose units that can either operate in delayed coking mode or in thermal cracking (visbreaking) mode. P2 nominally operates with a feed rate of 5 L/h and P3 at 0.8 L/h.
- P13 is a continuous atmospheric and vacuum distillation unit that can fractionate up to 538C with feed rates ranging from 38-76 L/h.
- P73 is a light hydrocarbon solvent deasphalting unit with feed rates ranging from 3.8-5.7 L/h.

- P96 is a two stage, skid mounted Howebaker type electrostatic desalter with feed rates ranging from 10-57 L/h.
- Complementary small scale batch equipment for desalting, atmospheric and vacuum fractionation and clay treating are available for preliminary project scoping and specialized product yield and quality determinations. Batch distillation capacity ranges from 0.1-568 L.

The Intertek Advantage

Intertek is a leading provider of quality and safety solutions serving a wide range of industries around the world. From auditing and inspection, to testing, quality assurance and certification, Intertek people are dedicated to adding value to customers' products and processes, supporting

their success in the global marketplace. Intertek has the expertise, resources and global reach to support its customers through its network of more than 1,000 laboratories and offices and 30,000 people in over 100 countries around the world.

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All process flow diagrams and reactor schematics available upon request.

For more information please visit <http://www.intertek.com/testing/pilot-plant/>, or contact us at [web. cp@intertek.com](mailto:cp@intertek.com), or call us +1 888 400 0084.