



The P-Cube™ from ThalesNano is a revolutionary new system designed to significantly improve upon the current catalyst screening process in the petrochemical, chemical and biofuels industries. Currently used catalyst screening systems tend to be built in-house, have a large footprint, and require large amounts of materials and weeks of time investment to validate only one catalyst for a particular process. This is inefficient and expensive in terms of costs, resources and engineering support.



The P-Cube™ is designed to meet requirements gathered from several petrochemical and biofuels companies in Europe, Asia and the US, and to overcome these disadvantages by offering a compact versatile system, which can screen catalysts in hours or days using minimal amounts of materials under conditions that exactly mimic those that will eventually be used in the plant.

ADVANTAGES

Time

- Catalysts may be screened in hours or days saving valuable time and resources.
- Reaction temperature or pressure may be increased during the reaction to speed up the optimization process.

Size

- The system has a small footprint and will occupy very little lab space.

Versatility

- The reactor can be adapted to suit your needs.
- The size of the catalyst bed, number of gas and reaction lines may be changed accordingly with your requirements.
- The P-Cube™ can be used with or without a gas stripper depending upon the application.
- The heated reaction line allows liquids ranging in viscosity to be used.

Accuracy

- A probe in the catalyst bed monitors the temperature of the catalyst at four different positions.
- Mass Flow Controllers maintain accurate gas feed flow rates.

Ease of Use

- Using ThalesNano's mature and intuitive control software, the system may be operated by skilled or unskilled operators with little training overhead.



SYSTEM SPECIFICATIONS

- Temperature Range: RT to 500 °C ± 1%
- Maximum Pressure: 200 bar ± 1%
- Liquid Flow Rates: 0.05 - 10 mL/min
- Gas Flow Rate Range: 10 - 200 mL/min
- Up to 3 different gas lines available
- Heated reaction line (up to 100°C) to allow pumping of viscous liquids
- Ability to introduce liquefied gases into the liquid feed
- Catalyst reactor volume: 20 mL as standard
- Automatic sampling and product collection
- Strict parameter control of temperature, pressure, liquid and gas flow rate
- Gas stripper option available
- Reactor available in either SS 316L
- Footprint: 1400 x 1200 x 750 mm
- The parameters of the P-Cube™ are constantly monitored and controlled using proprietary software

The P-Cube™ is extremely versatile. It was designed so that it can be easily customized to meet the needs of the individual customers.

APPLICATIONS

- Refinery catalyst selection and process studies using heavy feedstocks
- Rapid catalyst selection of industrial catalysts under real process conditions
- Feedstock evaluation for industrial processes under real conditions
- New process development with existing or new catalysts and/or feeds
- Refinery process troubleshooting studies
- Selective hydrogenation
- Hydrocracking
- Gas to liquid (GTL) reactions
- Reforming
- Hydrodesulphurization
- Ammoxidation
- Water gas shift
- Hydrodenitrogenation
- Hydrodearomatization
- Selective oxidations
- Hydrotreating (e.g. Hydrodesulphurization (HDS))
- Aldol condensations
- Fischer-Tropsch synthesis
- Isomerization

For further information please contact us at flowchemistry@thalesnano.com or visit our website: www.thalesnano.com

ThalesNano Nanotechnology Inc.

Zahony u. 7.
H-1031 Budapest
Hungary
Tel.: +36 1 880 8500
Fax: +36 1 880 8501
E-mail: sales@thalesnano.com

US Office

Hatboro
50 S. Penn St. Suite B-2
PA. 19040, USA
United States of America
Phone: +1-215-443-2430
E-mail: USAsales@thalesnano.com

UK Office

Carl Jones
Head of Global Sales and Marketing
Tel.: +44 (0) 7868 843 819
E-mail: UKsales@thalesnano.com