

JM

FORMOX LPS

Johnson Matthey (JM) provides efficient, flexible and high productivity formaldehyde plants as well as high performance catalysts, and in order to get the most out of any formaldehyde plant, a suitable CAP (Catalyst Activity Profile) or catalyst loading plan is required.

The new **FORMOX™** Lean Productivity System (LPS) catalyst focuses on a segment of plants where the productivity is moderate, but operating point still flexible. The development has aimed to maximise the utilisation of the catalyst in each catalyst load, i.e. minimise the total amount of catalyst required, decrease the pressure drop over the reactor and at the same time obtain the highest possible yield and lifetime.

The new **FORMOX** LPS catalyst offers a more suitable and optimised CAP product to plants operating in this regime. A huge benefit from the lower and slower pressure drop development is the ability to maintain the original capacity substantially longer. The drop in plant output due to increasing pressure drop over the reactor is thus significantly postponed, maintaining the productivity and available product out of the plant over a longer period of time and over a longer range of the specific production (SP), which is a great benefit. There is no difference between a traditional KH-type or LPS in terms of methanol in product or formic acid levels.

A comparison between a standard **FORMOX** KH-catalyst load and the new **FORMOX** LPS used in the typical operating regime is presented opposite.

Parameter	FORMOX KH-type	FORMOX LPS
MeOH inlet concentration to reactor, vol%/wt%	<8/9.1*	<8/9.1
Yield (MeOH to HCHO)**	92-93	92-93
Power consumption (blowers)***	100%	92-97%
Savings in power, kEUR/year (120 MTPD plant)****	0	5-25
Additional maintained production from SP 5	0	10-15%
Load cost (catalyst+ceramic rings)	100%	90-95%
Lifetime in S.P.@ 7.5 vol% MeOH*****	18-25	20-28

* for standard load, not high inlet CAP

**Average over economical lifetime

***Reference value 65 kWh/tonne 37%

****350 operating days and EUR 0,09/kWh

*****Depending on requirements for yield & MeOH in product

The only limitation compared to the normal **FORMOX** KH-catalyst series CAPs is the ability to operate at higher methanol inlets.

The LPS has been optimised to perform at its best between 6 and 8 vol% in methanol inlet and will not perform as well at higher methanol inlets.

If you are interested in more information on the **FORMOX** LPS, please get in touch with your JM formaldehyde sales contact.

SE-284 80 Perstorp, Sweden.
Tel +46 435 380 40 e-mail: formox@matthey.com
www.matthey.com

For further information on Johnson Matthey, please contact your local sales representative or visit our website. FORMOX is a trademark of the Johnson Matthey group of companies

Johnson Matthey
Inspiring science, enhancing life

© 2019 Johnson Matthey group
1729JM/0319/0/ENR