

Clean Technologies



XLP-310 the next generation MECS[®] ribbed ring catalyst



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For nearly twenty years, XLP-110 has proven itself to be the workhorse catalyst of the sulfuric acid industry. The newest MECS® ribbed ring catalyst, XLP-310, builds upon the proven, always reliable, XLP-110 technology, and provides even higher levels of conversion, further enhancing the versatility and value of the XLP catalyst portfolio already trusted by so many sulfuric acid plants worldwide.

Experience and technical evolution

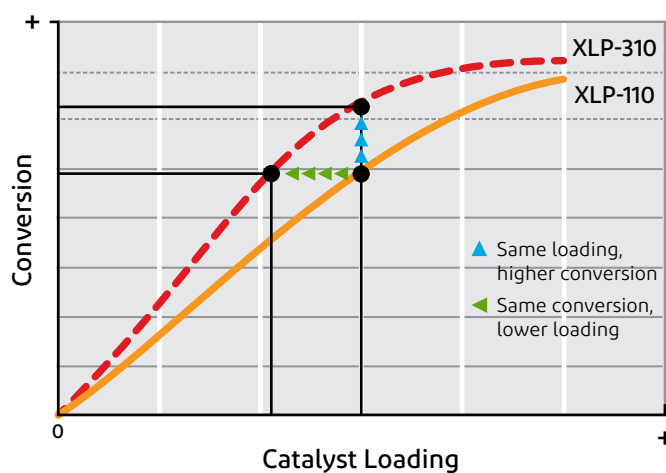
Over a hundred years ago, MECS (now DuPont Clean Technologies) began its commitment to the sulfuric acid industry. Today it provides proven processes, innovative technologies and responsive technical services on a global basis from locations throughout the world. Accordingly, the performance characteristics of MECS® catalyst continue to improve, especially for demanding applications. At the same time, financial pressures have driven the need to maximize production of existing sulfuric acid plants, while at the same time stricter air quality regulations have required sulfuric acid plants to achieve unprecedented low levels of SO₂ emissions. MECS® XLP-310 catalyst is a timely innovation for this mature industry and effectively meets these emerging challenges head on.

The perfect choice for plant upgrades and converter revamps

The new MECS® XLP-310 catalyst is an excellent choice for acid plant converter upgrades, lower converter passes, and

especially where conversion may be maxed out and the need for more expensive cesium catalyst is unwanted or unnecessary. Thanks to its advanced formulation and higher activity (Figure 1), XLP-310 gives your plant the flexibility to either increase conversion and reduce SO₂ emissions or reduce revamp costs by utilizing a smaller quantity of catalyst at a fixed SO₂ emission level. As an added benefit, XLP-310 and XLP-110 share a common shape. Therefore, they can be easily interchanged, with no impact on pressure drop.

Figure 1. Comparison of XLP-310 and XLP-110 volumetric activity

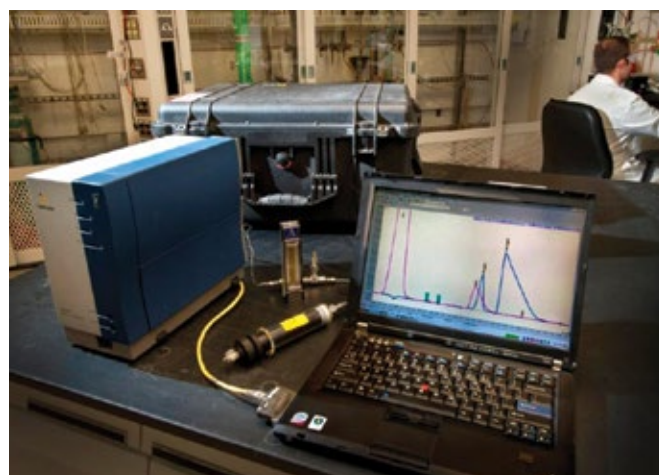


MECS® XLP-310 advantages

- Excellent value for increase in conversion afforded
- Low SO₂ emissions and reliable acid production
- Specially designed for lower converter passes
- Same shape as commercially proven XLP-110
- Low screening losses demonstrated in field trial
- Ribbed ring shape delivers low pressure drop
- XLP catalyst continuously in service since 2003

Field performance demonstrates impressive results

After several years of reliable performance using MECS® XLP-110, a field demonstration case was conducted in a large, world class sulfuric acid plant where MECS® XLP-310 was installed in converter passes 3 and 4 in addition to an XLP mix in pass 2. MECS® PeGASyS™ showed that overall conversion increased from 99.5% to 99.8% (Figure 2). Due in large part to the MECS® catalyst upgrades, the capacity at the plant increased by 12% while SO₂ emissions declined by 60% during this multi-year time period.



PeGASyS™ the next step to maximize converter performance

A PeGASyS™ test is a comprehensive examination of the gas side of a sulfuric acid plant using a portable gas chromatograph and proprietary diagnostic software. By acquiring data at different points in the process, PeGASyS™ can identify the following conditions specific to converter and catalyst performance:

- Pressure drop through catalyst bed
- Quantification of catalyst effectiveness
- Overall bed conversion efficiency
- Overall SO₂ emissions
- Recommended screening of catalyst for optimal results

To determine which of the MECS® XLP-310 attributes and advantages can work best for your plant, please contact your local representative, MECS® catalyst engineer, or visit the PeGASyS™ web page at www.cleantechnologies.dupont.com to schedule a PeGASyS™ test today.

Figure 2. MECS® XLP-310 cumulative conversion results

| | Year 1 | | Year 4 | |
|--------------------------------|-----------------------|------|-----------------------|------|
| Relative Capacity | 1.00 | | 1.12 | |
| Relative Emissions, ppm | 1.0 | | 0.4 | |
| | Catalyst Conversion % | | Catalyst Conversion % | |
| PASS 1 | XLP-110 | 56.5 | GR-330/XLP* | 60.7 |
| PASS 2 | XLP-110 | 61.1 | XLP* | 61.2 |
| PASS 3 | XLP-110 | 55.0 | XLP-310 | 65.7 |
| PASS 4 | XLP-110 | 93.3 | XLP-310 | 96.1 |
| Cumulative Conversion % | 99.5 | | 99.8 | |

*Mix of XLP-110 and XLP-310

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DuPont Clean Technologies

The Clean Technologies division of DuPont is a global leader in process technology licensing & engineering, offering critical process equipment, products and services that enable an array of industrial markets, including phosphate fertilizer, non-ferrous metals, oil refining, petrochemicals and chemicals, to minimize their environmental impact. We provide extensive global expertise across our portfolio of offerings in key applications.

MECS[®] sulfuric acid technology encompasses engineering design, services and high-performance products, many of which have revolutionized the performance, quality and cost-effectiveness of acid plants world wide. MECS[®] heat recovery systems (HRS[™]), MECS[®] SolvR[®] and MECS[®] MAX3[™] along with reliable specialty products such as Brink[®] mist eliminators, DynaWave[®] scrubbers, ZeCor[®] corrosion resistant alloy products, acid coolers and MECS[®] catalysts all designed for this demanding operating environment. Since 1925, we have been and continue to develop a full range of high performance catalyst products which allow sulfuric acid plants to run at greater production rates while lowering emissions. MECS[®] catalyst innovations combined with PeGASyS[™], the industry's premier gas chromatography diagnostics, make our company the first call for sulfuric acid plant engineers worldwide.

We are dedicated to helping our customers produce high-quality products used in everyday life in the safest, most environmentally-sound way possible, with a vision to make the world a better place by creating clean alternatives to traditional industrial processes. **We make everyday life better, safer, cleaner.**



Primary Global Offices:

North America

DuPont Clean Technologies

MECS Headquarters

Chesterfield, Missouri USA

Tel: +1-314-275 5700

<http://bit.ly/Contact-MECS>

Europe/Middle East/Africa

Brussels, Belgium

Tel: +32-2-658 2620

<http://bit.ly/Contact-MECS>

Asia Pacific

Shanghai, China

MECS Chemical Plants

Equipment (Shanghai) Co., Ltd

Tel: +86-21-3862 2888

<http://bit.ly/Contact-MECS>

South America

Alphaville, Sao Paulo, Brazil

Tel: +55-11-4166 8935

<http://bit.ly/Contact-MECS>

For our other global locations go to: www.cleantechnologies.dupont.com/contact/locations/



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MECS[®] catalyst