



Elessent™
MECS® TECHNOLOGIES

CATALYST FOR SULFURIC ACID GEAR® HEXA-LOBED RINGS



High-performance catalyst since 1925.



LOWER SO₂ EMISSIONS, INCREASED ACID PRODUCTION

GEAR® (Geometrical optimization – Enhanced surface area – Activity improvement – Reduced pressure drop) is the newest catalyst for sulfuric acid from MECS®, Inc (MECS®). The enhanced surface area of GEAR® catalyst increases accessibility of the catalyst active sites, improving the effectiveness of each catalyst ring. An advanced formulation and unique hexa-lobed ring shape combine to elevate the catalyst activity compared to ribbed-ring shaped catalyst. Improved activity of the GEAR® catalyst increases SO₂ to SO₃ conversion. Sulfuric acid plants now have the choice of reducing stack SO₂ emissions, increasing sulfuric acid production or both.

FEATURES AND BENEFITS

LOWER SO₂ EMISSIONS AND INCREASED ACID PRODUCTION

- Advanced formulation offers higher conversion and/or greater plant capacity
- Catalyst active sites are easily accessed through enhanced surface area
- Super GEAR™ provides 50% to 60% higher volume-based activity than conventional catalyst

ENERGY SAVINGS

- Lower pressure drop than ribbed rings
- Reduced main compressor power requirement

LONGER PRODUCTION CYCLE

- Improved dust handling
- Slower pressure drop evolution
- Longer time between turnarounds



PROVEN PERFORMANCE

- Continuous service since 2008
- Same durability as MECS® XLP series catalyst
- Low screening losses demonstrated

Elessent Clean Technologies
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CATALYST FOR SULFURIC ACID GEAR® HEXA-LOBED RINGS

ENERGY SAVINGS & EXTENDED OPERATING TIME

Optimization of the GEAR® catalyst shape results in a lower pressure drop catalyst, resulting energy savings that are realized at initial start-up and throughout the production campaign.

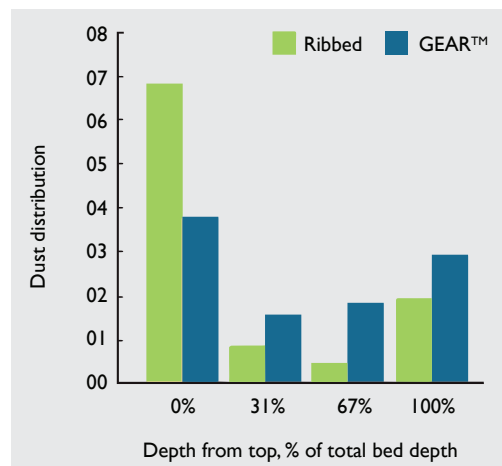


Figure 1
Comparison of dust distribution in catalyst beds after three years of operation

When compared to a generic ribbed ring catalyst, GEAR® has better dust distribution throughout the catalyst bed (Figure 1). Given the same dust loading, pressure drop rises more slowly over time with GEAR® catalyst, translating into longer times between required turnarounds.

WHAT MAKES MECS® SUPER GEAR™ SO SUPER

The advanced formulation of Super GEAR™ and unique hexa-lobed ring shape combine to elevate the catalyst activity compared to conventional ribbed-ring shaped catalyst (Figure 2). Breakthrough catalyst technologies such as the new MECS® Super GEAR™ will address emissions, production and energy issues and further enable sulfuric acid plants to operate at peak environmental levels while serving stakeholder needs.

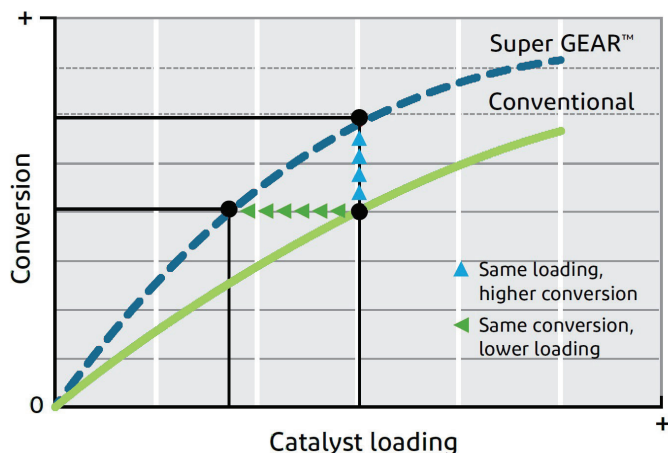


Figure 2
Performance comparison of Super GEAR™ and conventional catalyst



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