Elessent™
MECS® TECHNOLOGIES

BRINK® PT FILTERS
PLATINUM RECOVERY FILTERS FOR NITRIC ACID PLANTS

BRINK® Pt FILTER, UP TO 60% PLATINUM RECOVERY

In the nitric acid plant, the Brink® Pt filter by MECS, Inc. (MECS) is housed in a separate vessel and installed in a horizontal orientation following the waste heat boiler. As air and ammonia are burned at the platinum catalyst gauze, within the converter vessel, a gradual catalyst breakdown occurs, and the resulting platinum dust is carried downstream to the Brink® Pt flter and is captured. The Pt filter has an estimated platinum collection efficiency of nearly 100% of contactable and collectable Pt dust.

When the Pt filter has been in service for one or two production campaigns, it is taken from service and the outer screens are removed so that the special ceramic fiber embedded with the platinum dust may be accessed. The platinum embedded ceramic fiber media is removed and returned to a precious metal processor for reclamation. A spare Brink® Pt filter is placed in the filter vessel, and the empty Pt filter cage is then returned to MECS to be repacked.

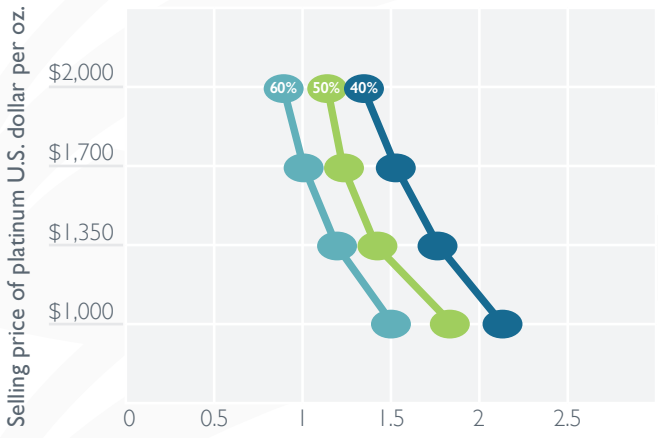
Based on reports from existing MECS customers, the Brink® Pt filter collects up to 60% of the platinum catalyst burnoff. This overall recovery is based on credits secured from the precious metal processor compared with the platinum lost from the gauzes.

A NEW BRINK® Pt FILTER IN A CONCENTRIC DESIGN, FEATURING AN INTERNAL CAGE-TYPE STRUCTURE AND ROBUST CONSTRUCTION

FEATURES AND BENEFITS:

- Internal cross brace supports added for structural strength
- High-temperature engineered ceramic fiber used for collection media
- Filters are repackable by MECS for cost savings
- Eliminates unnecessary loss of costly platinum catalyst
- Collection efficiency approaches 100% of contactable and collectable platinum dust
- No moving parts–continuous operation with low maintenance
- Low pressure drop–typically 0.5 psi (350 mm/wc) when clean
- Fast return on investment–as short as 1.5 months

PAYOUT PERIOD (MONTHS)



Elessent Clean Technologies
MECS® Technologies
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BRINK® FILTERS FOR NITRIC ACID PLANTS

MECS PROVIDES BRINK® HIGH-PERFORMANCE FILTERS FOR THE ENTIRE GAS STREAM IN A NITRIC ACID PLANT.

Brink® air filter: This filter removes line scale and oil mist from the air stream that cause decomposition of the ammonia and contamination of the platinum gauze. Effective use of this filter provides higher ammonia conversion efficiency.

Brink® NH_3 filter: This filter removes iron contaminants and oil particles that cause decomposition of the ammonia and poisoning of the platinum gauze. Effective use of this filter also provides a higher ammonia conversion efficiency and longer production campaigns.

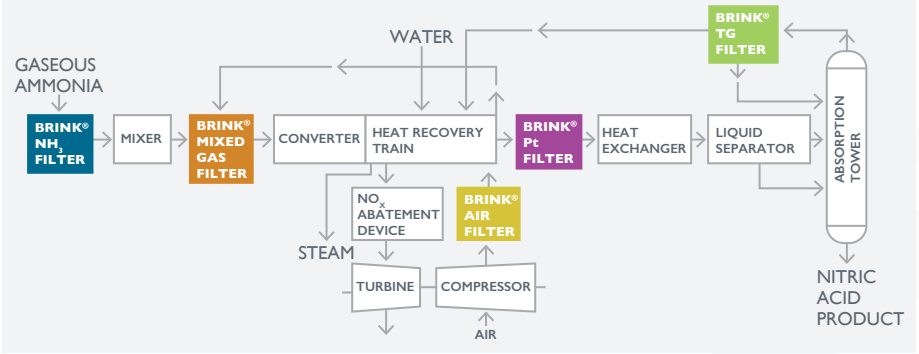
Brink® mixed gas filter: This optional second-stage polishing filter further removes line scale and oil mist from the air stream that cause decomposition of the ammonia and contamination of the platinum gauze. Effective use of this filter provides more operating efficiency, ensuring higher ammonia conversion and longer service campaigns.

Brink® Pt filter: This filter captures up to 60% of the platinum burned off the platinum catalyst gauze. At current pricing for platinum, this single filter makes a dramatic savings contribution to the operations of the nitric acid plant..

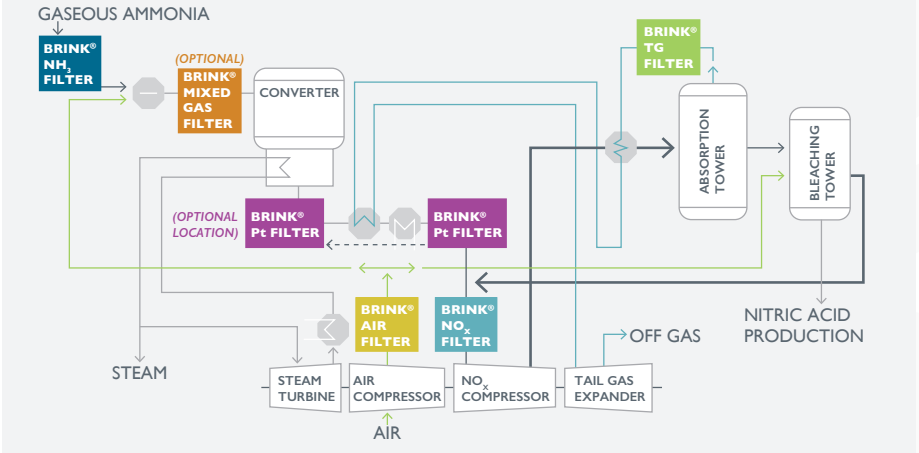
Brink® TG filter: This filter collects nitric acid mist carried over from the absorption tower tail gas. Effective use of this filter reduces or eliminates the need for replacing downstream equipment (reheater bundles) and collects HNO_3 that would normally be lost.

Brink® NOx compressor filter: This bicomponent cylindrical filter with baffle screen pre-separator helps prevent fouling of the compressor to reduce maintenance and increase campaign service life.

HIGH-PRESSURE PLANT



DUAL-PRESSURE PLANT



GLOBAL OFFICES

NORTH AMERICA

Global Headquarters
Saint Louis, Missouri, USA

ContactUs-NA@ElessentCT.com

LATIN AMERICA

ContactUs-LA@ElessentCT.com

EUROPE | MIDDLE EAST AFRICA | INDIA

EMEAI Headquarters
Hoeilaart, Belgium

ContactUs-EMEAI@ElessentCT.com

ASIA PACIFIC

AP Headquarters
Shanghai, China

ContactUs-AP@ElessentCT.com

Jakarta, Indonesia

ContactUs-INDO@ElessentCT.com

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MECS® Technologies
MECS.ElessentCT.com

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