

# Metso

Metals refining

## Peracidox™ Scrubber



Design

Typically, the Metso Peracidox™ Scrubber is designed as a two-stage scrubber consisting of a venturi followed by a packed column or empty tower.

Efficiently reduce tail gas residual content while minimizing emissions and odor. This solution is an oxidative removal process, featuring high removal efficiency and ease of control with only a small amount of mechanical equipment required.

#### Flexible use for different processes & off-gases

The Metso Peracidox™ Scrubber can be utilized for various off-gas types containing SO<sub>2</sub>, NO<sub>x</sub> or H<sub>2</sub>S. Emission reduction takes place according to the following reactions:

- SO<sub>2</sub> + H<sub>2</sub>O<sub>2</sub> -> H<sub>2</sub>SO<sub>4</sub>
- H<sub>2</sub>S + 4 H<sub>2</sub>O<sub>2</sub> -> H<sub>2</sub>SO<sub>4</sub> + 4 H<sub>2</sub>O
- 2 NO<sub>2</sub> + H<sub>2</sub>O<sub>2</sub> -> 2 HNO<sub>3</sub>

#### High removal efficiency for SO<sub>2</sub>, NO<sub>x</sub>, H<sub>2</sub>S

This scrubbing process adds hydrogen peroxide at a slightly hyperstoichiometric rate proportionate to the size of the impurity load to be removed. The off-gas impurity content can be adjusted to customer standards and local requirements.

#### Low operating personnel costs

The highly automated operation of the Metso Peracidox™ Scrubber means that costs for operating personnel are low.

#### Low investment costs

Fiber reinforced plastic, which minimizes the investment costs, is the main material used in vessels of the Metso Peracidox™ Scrubber. These can be either partially or completely lined, depending on the application.

#### Flexible use for reaching emission limits and improving emissions

It can be installed as part of a complete new plant, or in existing ones to improve emissions. The design allows easy process adjustment for reaching different emission targets.

#### Applicable for highly corrosive gases leading to minimized maintenance and lifecycle costs

The materials used for constructing the Metso Peracidox™ Scrubber are carefully chosen in order to resist highly corrosive gases. This minimizes maintenance and lifecycle costs.

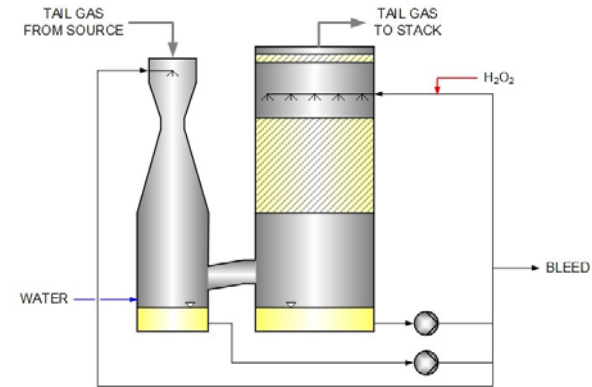
### Benefits

- Flexible use for different processes and off-gases
- High conversion/removal efficiency for SO<sub>2</sub>, NO<sub>x</sub>, H<sub>2</sub>S
- Flexible use for reaching emission limits & improving emissions
- Low investment costs
- Applicable for highly corrosive gases
- Minimized maintenance & lifecycle costs
- Zero waste: No liquid effluent is produced
- Low operating personnel costs

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**Zero waste:** No liquid effluent is produced  
Metso's Peracidox™ Scrubber produces sulphuric acid or nitric acid, which are valuable products.

Since the Metso Peracidox™ Scrubber allows the adjustment of the acid concentration within a certain range, the product acid concentration can either be adjusted to the requirement of the process to which the acid is fed, or to the market requirements.

### Typical application

- Reduction of SO<sub>2</sub> emissions downstream existing sulphuric acid plants
- Reduction of NO<sub>x</sub> emissions downstream existing nitric acid plants
- Recovery of HNO<sub>3</sub> from nitration processes
- Emergency Scrubber

**Read more at**  
[metso.com/portfolio/peracidox-scrubber/](https://metso.com/portfolio/peracidox-scrubber/)