

# Outotec® Ventgas Scrubbers

## Efficient ventgas cleaning

Outotec® Ventgas Scrubbers minimize the environmental impact of the processes by efficient off-gas scrubbing. Outotec designs and delivers a complete off-gas scrubber solution, including equipment parts and process control needed for scrubbing.

Outotec has a long experience of designing gas cleaning processes and delivering the equipment for different operation conditions, from high-temperature environment of ferrochrome production to the relatively cool but acidic environment of electrowinning, in which Outotec® Acid Mist Capture System is used.

Ventgas Scrubber systems are designed from the process standpoint to support the functionality of Outotec process solutions, such as Outotec® Zinc solution Purification or Outotec® Sulfide Precipitation processes.

The complete Outotec equipment package delivery guarantees easy installation on site, minimizes installation time and reduces fitting problems.

### Scrubber delivery package

- Scrubber
- Demister and fan
- Pumps
- Pump tank
- Heat exchangers
- Instrumentation
- Control system

**Outotec**  
More out of ore

## Process performance

The design of Outotec® Ventgas Scrubbers is based on process know-how and long-term equipment design knowledge. The expertise of Outotec Research Center can be used to estimate process parameters and final emission values in specially challenging cases.

## Less maintenance

Outotec scrubber construction materials are selected according to process conditions to provide long equipment lifetime with minimum maintenance need. Fibre-reinforced-plastic (FRP) and steel are the materials used for scrubbers. Ventgas Scrubbers are designed to provide easy maintenance and safety.

## Expert services

Outotec can provide large array of services to support Your gas cleaning operations:

- Emission measurement
- Operation point evaluation
- Spare parts services
- FRP structure testing and maintenance supervision



## High concentration H<sub>2</sub>S gas cleaning

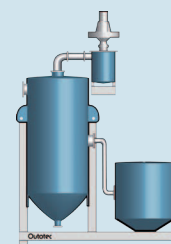
When exhaust gas with high hydrogen sulfide concentration needs to be cleaned, Outotec offers unique package including absorption reactor for coarse cleaning with proven Outotec gas dispersion with OKTOP® 2000 reactor technology and gas scrubber for cleaning of the final traces.

### Hydrogen sulfide scrubbing system includes:

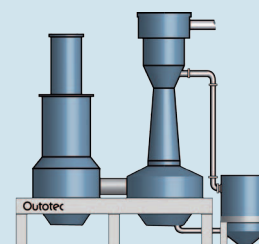
- OKTOP® 2000 reactor
- Outotec® Ventgas Scrubber package
- Outotec process automation

## Outotec® Ventgas Scrubbing equipment

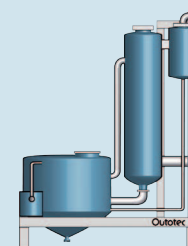
### Cascade scrubber



### Venture scrubber and ejector-venture scrubber



### Packed bed scrubber



## Outotec scrubbers for tankhouse acid mist capture - AMCS

Gas scrubbers are needed also in copper electrowinning plants. For this application, Outotec delivers a unique and effective acid mist capture system (AMCS). AMCS improves occupational health and safety, gives savings in corrosion-related maintenance and lowers operation costs through acid recycling.

### AMCS includes:

- Cell hoods
- Gas Ducting
- Scrubber
- Demister
- Fan
- Stack
- Wash water recycling system

