

## Packed Tower Scrubbers

### Absorb and Collect Gases and Vapors

Packed Tower Scrubbers are designed for the capture of gaseous contaminants from air streams. They are also referred to as packed bed or packed column absorbers. Internal packing in the scrubber vessel provides a large wetted surface area to induce intimate contact between the contaminated air and the scrubbing liquid. The contaminant absorbs into the scrubbing liquid, to be held in solution or further neutralized. Recirculated scrubbing liquid typically contains alkaline, acidic, or oxidizing scrubbing reagents to achieve the desired outlet emissions.

### Custom Engineered for Your Specific Application

Sly's custom designed and fabricated Packed Tower Scrubbers are engineered for specific applications for optimum tower diameter, packing depth, recirculation rate, and the appropriate mist eliminator style. Packed Tower Scrubbers can be designed to handle a wide range of airflows and can be constructed from a variety of metallic and non-metallic materials. Packed tower systems, when designed correctly, can successfully absorb and neutralize harmful, toxic gas streams and exhaust clean air into the atmosphere. Applications range from product recovery to air pollution and odor control.

### How Packed Towers Work

In vertical, counter-current scrubber operation, the gas flows upward through the bed, while liquid irrigates downward by gravity. A liquid header evenly distributes the scrubbing solution across the top of the packing. Traveling a torturous route through the packing extends the contact time between the air and the liquid and increases the intimacy of gas and liquid contact. The type of gas and the desired removal efficiency will determine the bed depth, packing size, recirculation rate, and chemical requirement. Prior to leaving the scrubber, the scrubbed air passes through a mesh or chevron style mist eliminator to remove entrained droplets.

### Liquid Treatment Optimizes Efficiency

Packed Towers are commonly used to capture SO<sub>2</sub>, HCl, NH<sub>3</sub>, H<sub>2</sub>S, and other gases. Some applications may require the use of two or more chemical additives. The most commonly used chemical additives are:

- Sodium hydroxide (alkali) or sulfuric acid (acid) for pH control
- Sodium hypochlorite or hydrogen peroxide for ORP (oxidation reduction potential) control

Liquid can often be discharged to the sanitary sewer without further treatment.



*Packed tower for SO<sub>2</sub> absorption and neutralization for petrochemical industry.*

# Packed Tower Scrubbers

## Standard Equipment

- Stainless Steel and FRP Construction
- Packing to promote mass transfer
- Packing support
- Liquid distributor
- Mist eliminator
- Recirculation tank

## Optional Equipment and Features

- High alloy construction
- Mesh or chevron mist eliminators
- Pumps
- Exhaust fans
- Instruments
- Recirculation pump
- Chemical feed system



*Packed tower and quench of high alloy for pharmaceutical industry.*

