



Raschig USA Inc. ®

Chemicals / Pharmaceuticals Packed Bed Wet Scrubber Design Basics

Chemical and Pharmaceutical Industries Air Pollution Control

Trace chemical vapor releases occur in numerous industries such as chemical and pharmaceutical manufacturing. Typical species so released are gases such as Hydrochloric (Muriatic) Acid (HCl), Ammonia (NH₃) and others. A common method of removal of such compounds from an air stream is to 'scrub' the air – i.e. – pass the air up through a packed bed in a tower as water passes down the tower. In many instances there is a specific chemistry used in the scrubbing water to achieve the needed mass transfer in the tower. Note the flow pattern is counter-current. Also in some instances the tower may pass the air horizontally as the water falls vertically. In the tower the offending chemical is transferred out of the passing air into the water. (Also, scrubbing liquids other than water are possible, but are rarely encountered in normal practice.)

Wet Scrubber Design Basics

What Raschig USA Can Supply to the Project

Typically our air pollution design engineer needs these data to design a scrubber:

Volumetric Air Flow

Air Temperature

Air Pollutant and Maximum Concentration of the species in the air flow

Required Capture (Removal) Efficiency of the Scrubber

We would be pleased to design the packed bed required and to quote the volume of random packing needed for that bed. Typically 3.5" Jaeger Tri-Packs® are used. This packing allows for maximum air / water intimate contact within the tower. Also this packing is well established to be easy to pack very uniformly to form a consistent packed bed in a tower as well as to be fouling resistant. But based upon the specific needs of the project, other sizes of packing are available. Note this in the photo here.

With the above data Raschig-USA can return a design that specifies tower diameter, packing choice and packed depth, required water flow with possible chemical additives specified as well as the pressure drop across the tower.



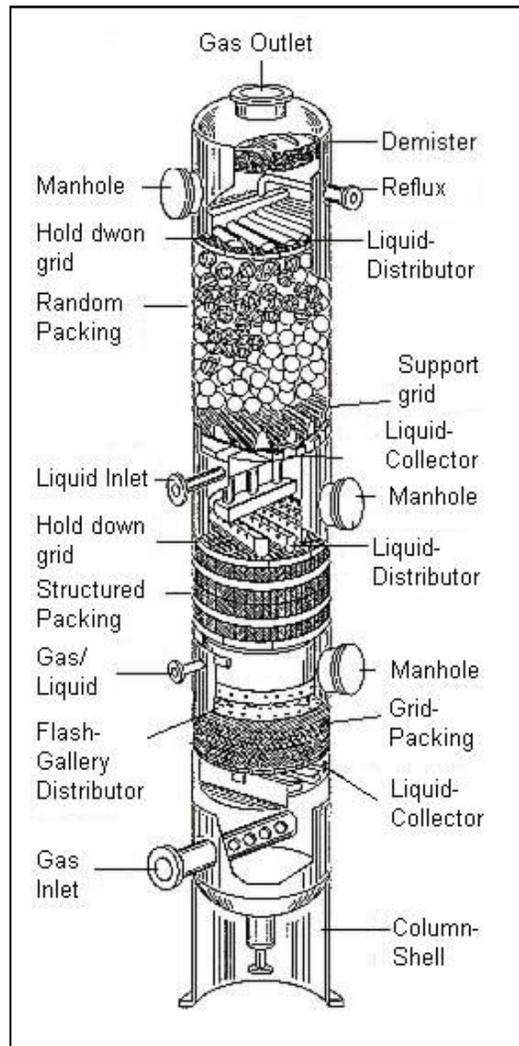
Tower Internals: Raschig USA also carries a full line of liquid distributors, packing supports, hold down grids, mist eliminators and other tower internals. All of these items will be sized, if needed, based upon the specific needs of the project. If required in the project we will be pleased to quote these items.

Design assistance is complimentary and quotations are provided with no obligation to order.

Contact:

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Note – fill this space with photos of internals?
