

GAS ABSORPTION TECHNIQUES - EXERCISE

Design packed bed tower

A 10,000 acfm (283,2 m³/min) exhaust from a heat treating process contains 25 mole percent ammonia, and the average exhaust conditions are 30°C and 1.0 atm. The efficiency of ammonia removal is 95% based on the following design parameters:

- Average tower temperature is 30°C
- Tower pressure is 1.0 atm
- Pure water is used as absorbing liquid
- Water rate is 1.5 times minimum
- Packing is 1.0-in. Ceramic Rasching rings

Estimate:

- L_{min}
- The diameter of the packed tower

Use annexes:

- «00_ANNEX 4b_Solubility data»
- « 00_ANNEX 1_Conversion Unit»