

عنوان مقاله:

Raschig Rings Versus PVC as a Packed Tower Media in Scrubbing Ammonia from Air

محل انتشار:

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خلاصه مقاله:

The selection of the packing media is concerned when ammonia is going to be scrubbed through a packed tower. In this study, a packed tower with two types of packing including raschig rings and PVC were used to remove the ammonia gas from air stream. Three gas flow rates as well as three ammonia concentrations and three pH of scrubbing liquid were applied. The level of ammonia at the inlet and outlet of the packed tower was measured through a direct reading device. The removal efficiency of column significantly increased in both modes, packed with raschig rings and PVC ($p < 0.001$) as the inlet concentration of ammonia gas was increased. With decreasing pH of scrubbing liquid from 7 to 5, the removal efficiency of the tower packed with raschig rings significantly increased ($p < 0.01$). The head loss across the bed was significantly increased ($p < 0.001$) as air flow rate increased from 5 to 10 and 10 to 15 l/s. The head loss across the bed was also higher when column was packed with raschig rings rather than packed with PVC. The lower ammonia removal efficiency of PVC rings could be ignored considering their other advantages such as light weight, low head losses, low initial and operating costs.

کلمات کلیدی:

Raschig rings, PVC, Packed tower, Ammonia removal, Efficiency, pH

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