Evaluation of Organic and Inorganic Biofilter Media in the Treatment of Toluene-Containing Gas

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Abstract

Degradation capabilities of four biofilters with different packing materials inoculated with toluene-degrading Bacillus sp strain were evaluated in this study. The packing materials were compost and wood chips as organic media, and rock wool and polyurethane foam as inorganic media. The biofilters with designed bed volume of 0.002512 m^3 were not significantly high at 48.34% and 63% respectively after 31 days. Pressure drop for all columns were low, below 50 mm Aq. Bacterial count in terms of CFU/g medium showed high growth in compost (1.49E+10) and rock wool medium (1.54E+09) after 31 days. Mass loadings were from 4 to 30 g toluene/m^3 of bed/ hour and will be increased to determine the maximum elimination capacities of the biofilters, as the study will be continued in the next experiments.

References

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