

Biofiltration for multiple H₂S-NH₃-toluene contaminated air treatment

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Biofiltration system has been introduced primarily as an practical alternative of traditional physical or chemical waste off gas treatment processes. Even though the results on the biological removal for the single gas system are many, it is not yet reported on the results for the simultaneous removal of the triple NH₃-H₂S-toluene contaminated waste air system. Fundamentally, it requires mixed heterotrophic and autotrophic microorganisms, and also needs the nitrification microorganisms for the NH₃ decomposition. Moreover, very little is known the interactions among the three gases in the simultaneous removal by the biofiltration

In this work, we are going to discuss the biofiltration for the removal of the triple NH₃-H₂S-toluene gases containing in the waste air system. In the biofiltration experiments, we are using mixed microorganisms for the simultaneous NH₃, H₂S and toluene metabolisms. The experimentally observed removal efficiencies and elimination capacities (EC) will be presented. Finally, we are also providing the experimentally obtained kinetic parameters.