Linnaeus ECO-TECH 2016
Kalmar, Sweden, November 21-23, 2016

MODIFIED SEQUENCING BATCH AIRLIFT REACTOR CAPABILITY IN MTBE REMOVAL

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Abstract

The aim of this study was to investigate MTBE removal efficiency using Sequencing Batch Airlift Reactor (SBAR) and to determine the share of aeration and adsorption processes during the operation. The present study was conducted with a new design of the system (cubic area and embedded baffle). The reactor was applied in 4-h cycles, which included 2 min filling, 210 min aeration, 5 min sedimentation, 8 min draw, and 15 min idle time. One week after start-up, the initial brown granules were observed. During the operation, some granules were formed with the size of 2–6 mm, average settling velocity and density of 0.66 cm/s and 0.06 g/mL, respectively. The results showed that COD removal efficiency was over 94 percent.

Keywords

Aerobic bio-granule, COD, Diameter, Density, MTBE