

Aerobic granules cultivated using industrial rubber wastewater: Effect of size distribution and Performance of granules.

Abstract

Sequential batch reactors (SBR) have been successfully developed granular sludge using industrial rubber wastewater on a cylindrical shaped SBR. SBR was introduced to industrial wastewater with varying chemical oxygen demand (COD) loadings from as low as 0.01 to 0.28 kgCOD/m³/d. First phase of experiment utilized 24 hours cycle time whilst second phase of experiment utilized 4 hours cycle time. Granules were successfully developed at the second phase (4 hours) of experiment. Fortunately, the overall performance for both cycles were excellent. COD removal efficiency throughout the experiment was kept at about 78 % to 98 %. Although higher COD removal was observed for both cycle, granulation did not occur in the first phase (24 hours). Decrement of cycling time to 4 hours promotes the growth of dense and structured sludge granules.