

### Aerobic granular as a biocatalyst for the mineralization of phenol

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The purposes of this research are to evaluate the aerobic granulation process and phenol mineralization in a sludge blanket reaction (SBR) process. A tubular reactor with volume of 2.0 L was inoculated with activated sludge and fed with phenol as sole carbon source, at a rate of 1230 mg phenol l<sup>-1</sup>d<sup>-1</sup>, in 3 cycles per day during 90 days. The mature granules were compact and fully matured on day 40; size distribution was comprehended between 3 and 13 mm. Aerobic granular sludge exhibited good performance in the organic and nutrient removal efficiencies of 99% phenol, 97.5% NH<sub>4</sub><sup>+</sup> -N, and 66.9% PO<sub>4</sub><sup>3-</sup>-P. This study provides experimental evidence of using activated sludge from a municipal wastewater treatment plant to degrade another toxic chemical, and easily to get successful and stable aerobic granules.