

**KINETICS OF DENITRIFICATION BY A MIXED CULTURE OF
PSEUDOMONAS DENITRIFICANS AND *BACILLUS SUBTILIS***

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ABSTRACT

The biological kinetics of denitrification have been studied and several models to be used for design purposes with varying degree of complexity have been presented in recent years. However, most of these kinetic studies were performed with mixed (and not well defined) population systems, such as *activated sludge*. The present work was focused on the study of denitrification by mixed cultures of the denitrifiers *Pseudomonas denitrificans* and *Bacillus subtilis* under anoxic conditions in a defined synthetic medium. Moreover, a kinetic model was developed to describe the behavior of these two bacteria in mixed cultures, based on the kinetic models that have already been developed for each bacterium separately (Kornaros, 1998; Zissi, 1999). This model can accurately predict the biomass growth of the mixed cultures under limiting conditions of organic carbon and nitrates and nitrites, which are contained at the synthetic medium.