Institute of Chemical Engineering

Cometabolic biodegradation of 4-chlorophenol by stenotrophomonas maltophilia KB2 strain

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Abstract: The cometabolic biodegradation of 4-chlorophenol by Stenotrophomonas maltophilia KB2 strain in the presence of phenol as the sole carbon and energy source was studied. The experiments were carried out in a batch bioreactor. The tests were conducted at 30°C, pH 7 and oxygenation maintained at the level of 5–7 $mg \cdot l^{-3}$. The effect of changes in initial concentration of both substrates on the rate of biomass growth and substrates transformation were analyzed. The initial concentration of phenol was changed within the range of 50–300 $g \cdot m^{-3}$ and 4-chlorophenol within the range of 25–100 $g \cdot m^{-3}$. The values of growth substrate transformation yield (W) and the f coefficient, indicating the fraction of reductant from phenol oxidation used to transform 4-chlorophenol, were also estimated.

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