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BIOLOGICAL TREATMENT OF INDUSTRIAL WASTEWATER IN A 2-STAGE ANAEROBIC FLUIDIZED BED REACTOR

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Biological purification of wastewater in fluidized bed reactors offers many advantages.

In these reactors, the biomass grows in thin layers on a heavy carrier kept in a fluidized state by an upward flow of wastewater. The carrier plus biolayer possess very good settling characteristics (≈ 50 m/hr), which enables the accumulation of high concentrations of biomass (up to 40 g VSS/l) in a tall slender reactor, while still maintaining high liquid superficial velocities (10-30 m/hr).

Owing to the high biomass concentration, a very high purification capacity and a short treatment time are possible.

Examples were given of experiments directed towards anaerobic purification of industrial wastewater on pilot, semi-technical and full-scale.

It was shown that treatment capacities of up to 50 kg COD/m^3 day are obtained on pilot and semi-technical scale (at 1-1.5 hrs treatment time).

Start-up results of the full-scale plant at Delft were outlined.