

ABSTRACT

An apparatus for feeding some gas, such as air or oxygen, into the mixed liquor of a bioreactor is described. The apparatus is formed of an impeller and an annular air/gas distributor housed within an aeration chamber. The liquid is drawn into the aeration chamber by the rotating impeller and is mixed with air released from the annular air distributor. The gas and liquid mixture is directed downwards towards the bottom of the bioreactor when the aerator is top mounted and used in biofilm reactors. For bottom mounted aerators used in suspended growth bioreactors, the gas-liquid mixture is directed down through the release chamber and out through the dispersion box. The apparatus is used in a continuous process which increases the transfer of oxygen into water, wastewater or slurries, providing efficient oxygen diffusion in shallow liquid levels (down to 0.45m) by establishing strong agitation and a higher pressure zone within the aeration chamber.

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