COD CONCENTRATION

The application of UASBR reported to be feasible for wide range of COD and BOD concentrations for different industrial wastewaters. The reactor can give efficiency in the range 75 to 90% for COD concentration ranging for 1000 to 20,000 mg/L. The efficiency of the reactor is governed by the loading rates applied on the reactor rather than COD and BOD concentration. In general it is observed that when OLR is between 2.0 to about 10 kgCOD/m^3 d. the reactor can give efficiency in the range of 80 to 90% irrespective of COD concentration when COD concentration is greater than 1000 mg/L. Under certain situations even lower COD removal is reported within these loading conditions. For loading other than this, in general, the efficiency reported is lower. Except in few cases where efficiency as high as 85% can be observed for loading greater than 10 kgCOD/ m^3 d.

For low strength wastewater like sewage with COD concentration 300 to 800 mg/L (BOD 200 to 500 mg/L) this reactor is reported to give efficiency in the range of 50 to 85 %. Higher efficiency is reported when the loading is about 2.0 kgCOD/ m^3 d. with low HRT of about 6 hr.

For start-up of the reactor the COD concentration of the wastewater should be preferably about 1000 to 3000 mg/L to allow high hydraulic loading rate. The predetermined level of substrate concentration, if greater than 2000 mg/L, should be achieved in steps only after formation of granules in primary start-up [Compos and Anderson, 1992].