Granular Aerobic Reactor

GAR is a type of sequential biological reactor (SBR) system, which performs different phases (Filling, reaction, decantation and emptying) in the same vessel. This technology carries out the removal of organic matter, nitrogen and phosphorus in compact and more efficient systems than conventional activated sludge. Anaerobic, anoxic and aerobic conditions are established within the granules, so that the removal of the different pollutants from the wastewater takes place in a single unit. In addition, the granular sludge has a high settling velocity compared to the flocculent biomass typical of activated sludge, which makes it possible to separate and retain the sludge within the reactor itself without the need to install an additional settler.

KEY POINTS:

- Treatment of screened raw wastewater
- High process stability and flexibility
- Allows treatment of high organic loads per unit volume
- Simultaneous biological processes
- Complex operation. Needs specialized personnel for process control
- Improved sludge separation

MAIN FEATURES

- ✓ Flexibility: Adaptability to changes in discharge through modification of anaerobic – anoxic – aerobic - decantation times.
- ✓ Possible N and P removal.
- ✓ Simplicity: All processes in a single tank.
- ✓ Excellent clarification with high settling velocity (granules).
- ✓ Reduced volume of excess sludge
- ✓ Intensive system with very low surface < 0.1 m^2/PE
- ✓ Intensive System/Energy consumption: 0,4-0,5 kWh/m^3
- ✓ Maintenance of mechanical elements (pumps, blowers, diffusers, decanter, valves).

Innovative Intensive Systems