

# BACTERIAL CULTURE IN ANAEROBIC ENVIRONMENT

## REFERENCE : MP45



*Non contractual photo*

**SERVICE : 220 V SINGLE PHASE - 50 HZ -  
1.5 KW**

**DIMENSIONS : 1400 X 600 X 1900 MM**

Under the terms of anaerobic fermentation, anaerobic digestion or anaerobic digestion, the transformation of organic compounds into methane and carbon dioxide under the action of microorganisms. This transformation of organic matter into biogas is carried out by complex bacterial populations under very specific environmental conditions (strictly anaerobic environment, with a Red-Ox potential of around 250 mV, pH close to neutrality). Anaerobic fermentation is mainly applied to the treatment of activated sludge from aerobic treatment of urban wastewater (digestion of urban wastewater sludge) and treatment of industrial wastewater containing high concentrations of easily biodegradable compounds (agro-food industries). . In a properly functioning fermenter, the rate of removal of COD (Chemical Oxygen Demand) can reach 80% provided that the residence time is sufficient because the methanogenic bacteria work slowly.

- Hydrodynamic study of a liquid-solid fluidized bed
- The study of anaerobic fermentation in a fluidized bed
- The study of the removal efficiency of the COD as a function of the volume load and the transit time
- The study of the composition of biogas according to the organic load
- The study of the losses of charges
- The apparatus consists essentially of a methanization reactor mounted on a frame, as well as its storage, control and measurement devices.

### Technical specifications :

- Waste water can.
- Wastewater supply pipe to the PVC reactor
- Supply line of reagents to the PVC reactor
- Methanization reactor of the cylindrical column type, 316 L stainless steel, consisting of:
  - Bottom bell for the supply of wastewater and reagents, in stainless steel.
  - Perforated filling support grid made of PVC,
  - Granular filling for the support of the bacterial bed
  - Stainless steel lining to prevent mechanical entrainment of the bacterial bed
- Separator grid of the upper compartment of the PVC reactor
- Upper bell (separate compartment of the reactor itself), made of stainless steel. used for the liquid - gas separation, the sampling of the recycled liquid and the purified liquid.
- Secondary clarifier for sludge recycling
- Overflow from the effluent leaving the reactor, 316 L stainless steel
- Biogas sampling line leaving the reactor.
- Reactor sludge recycling line with shut-off valves at the suction and discharge of the recirculation pump and stainless steel ball-type discharge valve.
- decanter

- Support frame made of 304 L stainless steel square tube with aluminum clamping nuts
- Temperature sensor.
- Sewage pump in the variable speed reactor.
- Reagent supply pump in the variable speed reactor.
- Pump for recycling liquid from the variable speed reactor.
- Temperature controller, display of measurement and setpoint
- Timer for reagent supply cycles
- Timer for recycling cycles
- Timer for the supply of wastewater
- Heating cable for reactor tracing
- lagging
- PH measuring probe with transmitter
- Red-Ox potential measuring probe with transmitter
- To fix bacteria on the support: sludge from the anaerobic digester of an urban water treatment plant.