
The PL™ Methanisation Process

A fully controlled
Technology



A 5000 m³ digester built for methanisation of reject material coming from a distillery



Vue des pompes et des vannes automatisées

A mixing system fully hydrolic allows not to have not any dynamic mechanical parts inside the digester. The judicious and improved choice of the suction area, as well as their design,unic in this field, allows to guaranteea fully permanent action of the digester, without any risk of stoppage

The delivery of recycled liquid on top of the digester has been improved for a long experimentation. It allows a uniform distribution of the liquid on the total hydrolic surfaceof the digester avoiding as such the accumulation of floating material and inert area.

The perfect homogeneously of the hydrolic volume of the digester and the speed circulation of the liquid moved in the hydromechanical circuit, fully external of the mixing, have been specially designed in order to preserve the integrity of the active biomass

keeping the internal temperature of the digester in between 35 to 37°C (mesophil treatment) or 55 °C (Termophil treatment)is insured by the way of a thermal exchange system designed to take care of the biomass specificity, which is a living material of a great fragility. The design of this thermal exchanger allows a very low loss of charge according to the fast change of pressure which can destroy a lot of anaerobic bacteriaes.



**Echangeur multitubulaire
à contre-courant**

The non stop operation is warrantied all along the digester life.No internal maintenace is needed. Nothing can disturb the internal equipment



Système robotisé de recyclage

All the non static apparatus are outside of the digester; The pumps do not need any specific maintenance. They can work non stop for many years. They can't be blocked. They have a special design which grant them the possibility to take care of very delicate materials. They can take in charge many different types of materials .

The measurement equipments: Ph meter, etc... are installed in one of the recycling pipe so like that the signals trapped give a correct figure of the hydrolic volume of the digester. The totality of these special features, versus the other well know systems, give to this process an exeptionnal yield. This has been proved for many years now.

Digesters of different volumes are possible. They are designed in taking care of the nature of the different waste material treated, of the volume and the result expected i.e. energy production, purging or both at the same time. The volume treated can be from 200 to 5000 m³ and more if necessary.

Each project has some special features which must be taken in charge in the design in order to give the correct answer to the expected results.

The regularity of operating for the digester allows a significant reduction for the polluting load of the methanised products.

The result of that is being visible through a reduction of the soluble COD.

The excess of mineral material is taken out continuously from the digester. For that a specific technical adaptation is used to separate the mineral material and keep only the fraction of biomass expected. This technique of selective sorting is a specific feature of this process.



The process is fully remote controlled using the modern but reliable electronic devices. A dedicated software allows to pilot the complete system in using the data collected which are permanently updated.

Interface des automatismes

The different parameters (pH, COD, Temperature..) of the biogas produced, are analyzed constantly and permanently.

Taking in charge these different parameters the software is able, to adapt the operating rate of the digester, to compute the amount of material needed by the digester, the frequency and duration of the recycling steps as well as the other vital functions



Computer control system

The remote control system allows a continuous control of the correct operation of the plant. It is also able to react and take the right decision in real time if necessary. This allows to use a non skilled computer technician.

The job of the technician is limited to get a couple of material sample to be analyzed such as : rate of dry material organic material COD, AGV...

The results of these analysis are transmitted to the remote control system where they can be treated and included in the executive program



Laboratory for in site measurements

The total of these data among which (like hydrolic system, sorting of mineralized material,) are innovations coming from the experimentation and know how and give a significant advance technology



Biogaz security

Biogaz is picked up at the top of the digester . The production is controlled and registered in real time. The pressure and security of the system are fully automatic



Special biogaz storage « Gazometer »

To be able to adapt production and consumption, the biogaz is stored in a specific tank named « Gazometer » which is made with a double and soft plastic menbrane



Automatic pressure system

Biogas can have different treatment depending upon the usage like desulfurisation, etc...To be transported toward the user it is put under pressure



Boiler

Biogaz is valorized in different ways like co-generation (Electricity+ heat) or just used in a boiler or anything else which need to be heated.