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IQ 01.5 - CONVECTION DRAINER

The objective of the IQ 01.5 equipment is to analyze the drying by convection of the element to be studied, modifying the environment in which it is and reflect the data of the changes produced.

This process is widely used in the food industry, and can be viewed and studied very easily. By means of the control knobs, the air velocity and the heating power can be varied, so that we can study the phenomenon of drying in different operating regimes.

The transparent register allows to visualize the solid to be dried during the process, while a precision electronic balance indicates the produced mass variation.

The temperature, humidity and air velocity sensors indicate the parameters of the process, which allows the student to perform different experiments.

The manual, shows the experiments to be carried out by the students, along with the data log tables, on which the student will work with the data obtained in the experiment.

IQ 02.1 - CYCLONE SEPARATION

Cyclones are widely used equipment in the industry that allows the separation by centrifugal force of solid particles that are suspended in a gas. They are simple equipments whose operation is based on the separation of the particles by means of the centrifugal force, and that without having movable parts they have a very simple maintenance. As inconvenience we can emphasize that they are not flexible to the changes of concentration, flow or size of the particles.

With this IQ 02.1 centrifugal separation equipment, it is intended to study how cyclones, which are gas cleaning devices with particles, remove these from the gas stream.

IQ 20.1 - PASTEURIZATION STUDY

The IQ 20.1 equipment has been developed for the small-scale pasteurization process in the laboratory.

The equipment allows to carry out the process of pasteurization with small quantities of product, which allows the use in a practical environment in a fast form, and allowing to the student a perfect understanding of the process.

The system allows to modify the variables of the process allowing more practical versatility.

The equipment has three plate heat exchangers, in which the processes of heating, exchange and cooling can be clearly identified.

The system is controlled by a computer (PC included) are software.

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TA 02.2 - SEDIMENTATION TANK

With this equipment is intended to study and visualize in a continuous regime, the natural phenomenon called sedimentation, whereby particles that are denser than the fluid that contains them and in which they are dispersed, fall by gravity depositing in the bottom of the container.

Sedimentation is used to clarify all types of water, reducing turbidity. Depending on the characteristics of the suspension (heterogeneous mixture formed by solid particles dispersed in a fluid), the particles will sediment in different ways depending on the density of them, its concentration in the solution, and the density and viscosity of the fluid in which they are dispersed.

The sedimentation tank has a lower tank of mixture in which a suspension is prepared by adding the additive whose sedimentation we want to study. In addition, the mixing tank has a stirring system to prevent sedimentation of the suspension.

TA 03.2 - SEDIMENTATION STUDY

The objective of this equipment is to study and visualize the natural phenomenon called sedimentation, whereby the particles denser than the fluid that contains them and in which they are dispersed, fall by gravity depositing in the bottom.

Sedimentation is used to clarify all types of water, reducing turbidity. Depending on the characteristics of the suspension (heterogeneous mixture formed by solid particles dispersed in a fluid), the particles will sediment in different ways depending on the density of them, its concentration in the solution, and the density and viscosity of the fluid in which they are dispersed.

The equipment consists of 5 glass tubes placed in a support structure with a backlit graduated panel. Using this system we obtain an optimal visualization of the sedimentation process and its interfaces, with which we can measure the velocity of the sedimentation. Five 250 ml beakers and a 2 liter jar are supplied to prepare the suspensions that are to be introduced into the tubes. These can be extracted from their location to be able to agitate them until obtaining a homogenous dissolution of the aggregated solids.

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