PEF

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⇨PRODUCTS
  ⇨12.-FOOD & WATER
     TECHNOLOGIES
     AND
  13.-ENVIRONMENT

PROCESS DIAGRAM AND UNIT ELEMENTS ALLOCATION

MOTOR (r.p.m)

LAMP SWITCH
Interruptor de Lámpara

TIMER (min)

pH METER
Medidor de pH

TDS (TOTAL DISSOLVED SOLIDS)
AND TEMPERATURE METER
Medidor de TDS (Sólidos Disueltos Totales)
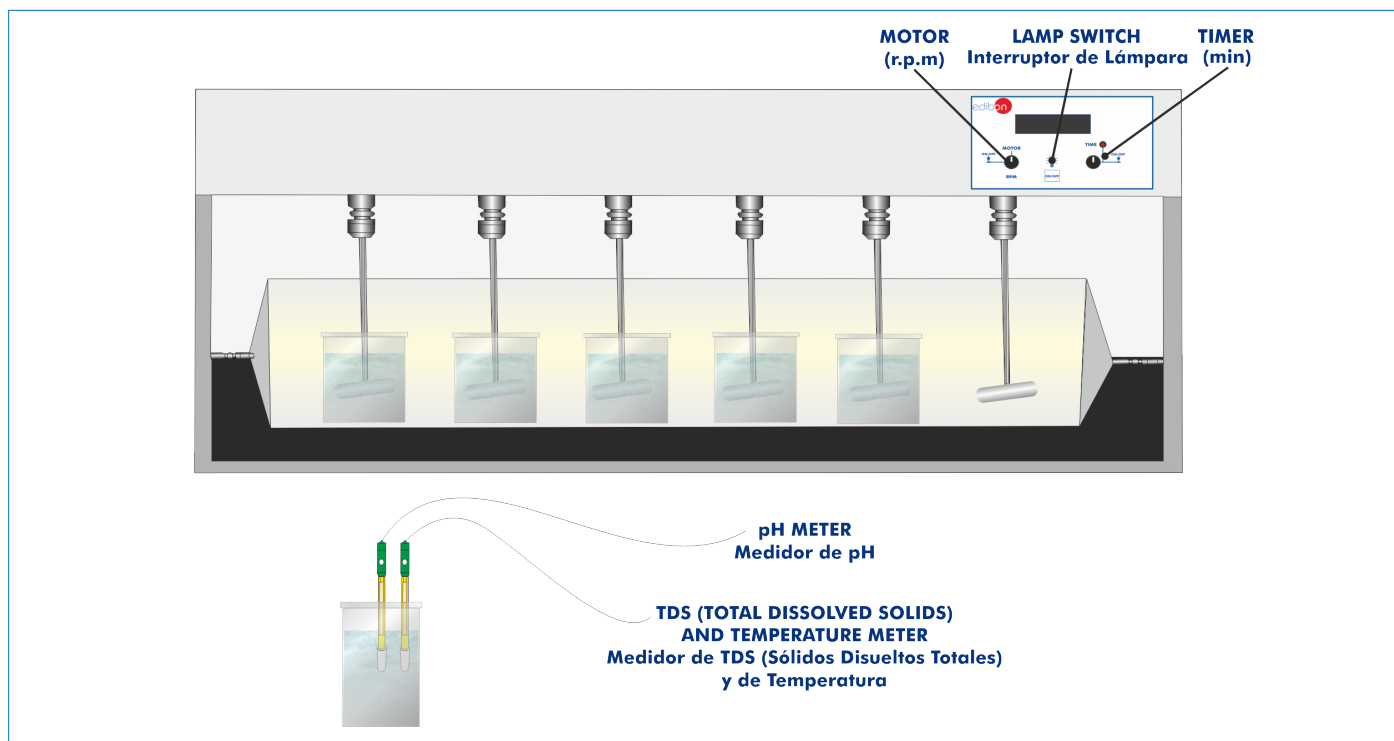y de Temperatura

ISO 9001: Quality Management (for Design, Manufacturing, Commercialization and After-sales service)

European Union Certificate (total safety)

Certificates ISO 14001 and ECO-Management and Audit Scheme (environmental management)

"Worlddidac Quality Charter" and Platinum Member of Worlddidac

INTRODUCTION

Drinking water or wastewaters, in different volumes, contain suspended material, solids that can be settled at rest or dispersed solids that do not settle easily. A substantial part of those solids that do not settle may be colloids. In natural conditions, they cause cloudiness, color, smell, taste and solids.

Water purification processes involve the collection of colloidal material, which is indispensable in the wastewater purification and treatment processes.

The coagulation and flocculation operations destabilize the colloids and make them settle. This is usually obtained with the addition of chemical agents and the application of mixing energy.

The Flocculation Test Unit, "PEF", allows to study the coagulation and flocculation operations and to analyze the main parameters that determine the colloids removal operation.

GENERAL DESCRIPTION

The Flocculation Test Unit, "PEF", shows the removal of dissolved substances by coagulation and flocculation.

It has six beakers where water to be tested is poured. Each one has one adjustable speed paddle stirrer.

The unit is illuminated from the base or from the rear side to allow a clear visualization of the supernatant particles.

The instrumentation of the unit allows to determine temperature, pH and total dissolved solids (TDS) to set, thus, the optimum conditions for flocculation.

SPECIFICATIONS

Bench-top unit.

Main metallic elements made of stainless steel.

Diagram in the front panel with distribution of the elements similar to the real one.

Flocculation test unit illuminated in the base or back part:

    Six stirrers with stainless steel paddles. Agitation speed regulation: 25 – 250 rpm.

    Six flocculating graduated vessels.

    Sample volume of each vessel: 1 l.

Control panel:

    Timer, range: 0 – 60 min approx.

    Lamp switch.

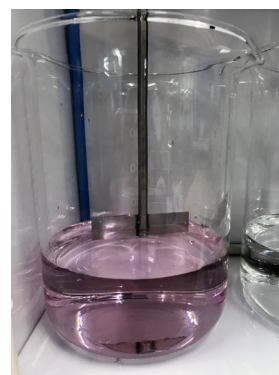   Rpm regulator and rpm display.

Meters:

    pH meter.

    Total dissolved solids (TDS) and temperature meter.

Cables and accessories, for normal operation.

Manuals: This unit is supplied with the following manuals: Required Services, Assembly and Installation, Starting-up, Safety, Maintenance & Practices Manuals.

PEF detail

EXERCISES AND PRACTICAL POSSIBILITIES

1.- Determination of optimum coagulant dosage.

2.- Study of coagula formation regarding to the mixing time and the agitation speed.

3.- Determination of optimum pH.

4.- Coagulation test in conjunction with activated carbon.

REQUIRED SERVICES

- Electrical supply: single-phase 200 VAC – 240 VAC/50 Hz or 110 VAC – 127 VAC/60 Hz.

DIMENSIONS AND WEIGHTS

PEF:

   -Dimensions: 750 x 250 x 500 mm approx.

                (29.53 x 9.84 x 19.68 inches approx.).

   -Weight: 30 Kg approx.

                (66 pounds approx.).

RECOMMENDED CONSUMABLES (Not included)

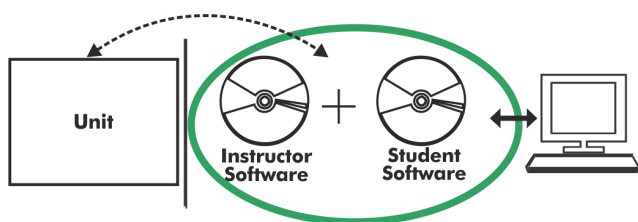- Activated carbon.

SIMILAR UNITS AVAILABLE

Offered in this catalog:

- PEF. Flocculation Test Unit.

Offered in other catalog:

- PEFC. Computer Controlled Flocculation Test Unit.

PEF/ICAI. Interactive Computer Aided Instruction Software:

With no physical connection between unit and computer, **this complete software package consists of an Instructor Software (EDIBON Classroom Manager -ECM-SOF) totally integrated with the Student Software (EDIBON Student Labsoft -ESL-SOF).** Both are interconnected so that the teacher knows at any moment what is the theoretical and practical knowledge of the students.
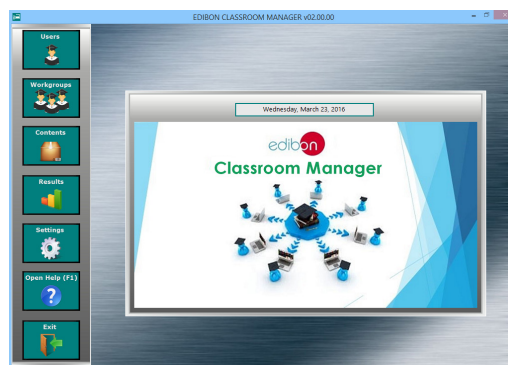
<u>Instructor Software</u>

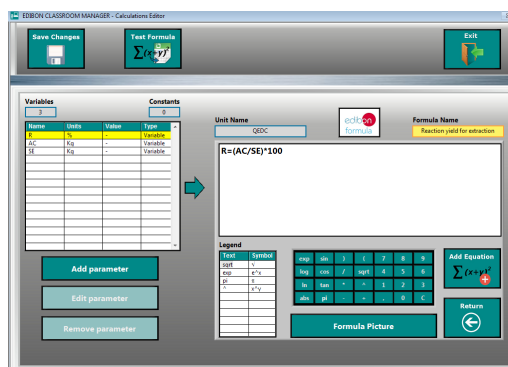### - ECM-SOF. EDIBON Classroom Manager (Instructor Software).

ECM-SOF is the application that allows the Instructor to register students, manage and assign tasks for workgroups, create own content to carry out Practical Exercises, choose one of the evaluation methods to check the Student knowledge and monitor the progression related to the planned tasks for individual students, workgroups, units, etc... so the teacher can know in real time the level of understanding of any student in the classroom.
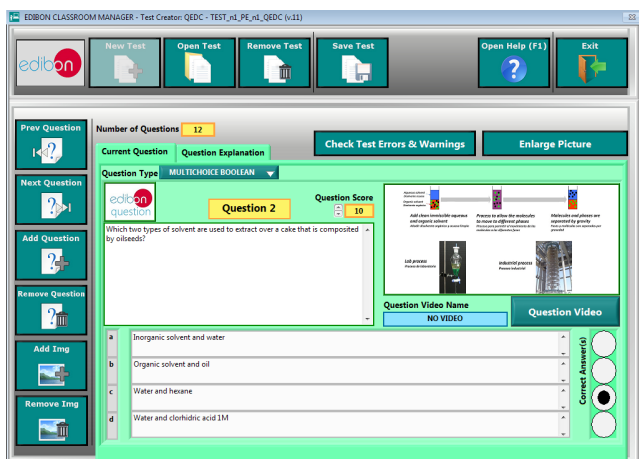
Innovative features:

• User Data Base Management.

• Administration and assignment of Workgroup, Task and Training sessions.

• Creation and Integration of Practical Exercises and Multimedia Resources.

• Custom Design of Evaluation Methods.

• Creation and assignment of Formulas & Equations.

• Equation System Solver Engine.

• Updatable Contents.

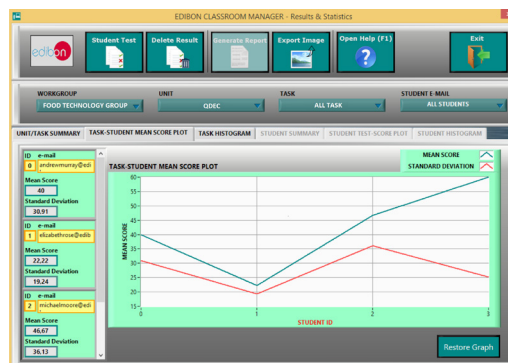• Report generation, User Progression Monitoring and Statistics.

ECM-SOF. EDIBON Classroom Manager (Instructor Software) Application Main Screen

ECAL. EDIBON Calculations Program Package - Formula Editor Screen

ETTE. EDIBON Training Test & Exam Program Package - Main Screen with Numeric Result Question

ERS. EDIBON Results & Statistics Program Package - Student Scores Histogram

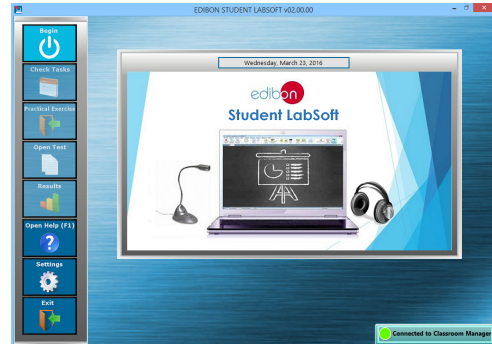## - ESL-SOF. EDIBON Student Labsoft (Student Software).

ESL-SOF is the application addressed to the Students that helps them to understand theoretical concepts by means of practical exercises and to prove their knowledge and progression by performing tests and calculations in addition to Multimedia Resources. Default planned tasks and an Open workgroup are provided by EDIBON to allow the students start working from the first session. Reports and statistics are available to know their progression at any time, as well as explanations for every exercise to reinforce the theoretically acquired technical knowledge.
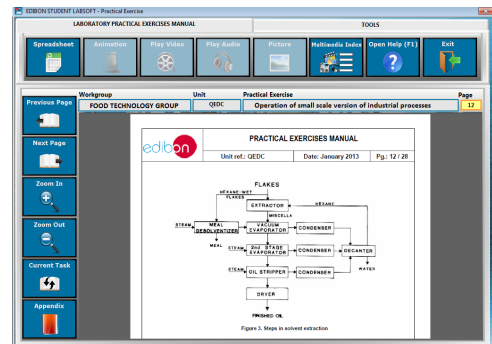
Innovative features:

• Student Log-In & Self-Registration.

• Existing Tasks checking & Monitoring.

• Default contents & scheduled tasks available to be used from the first session.

• Practical Exercises accomplishment by following the Manual provided by EDIBON.

• Evaluation Methods to prove your knowledge and progression.

• Test self-correction.

• Calculations computing and plotting.

• Equation System Solver Engine.

• User Monitoring Learning & Printable Reports.

• Multimedia-Supported auxiliary resources.

For more information see **ICAI** catalogue. Click on the following link:
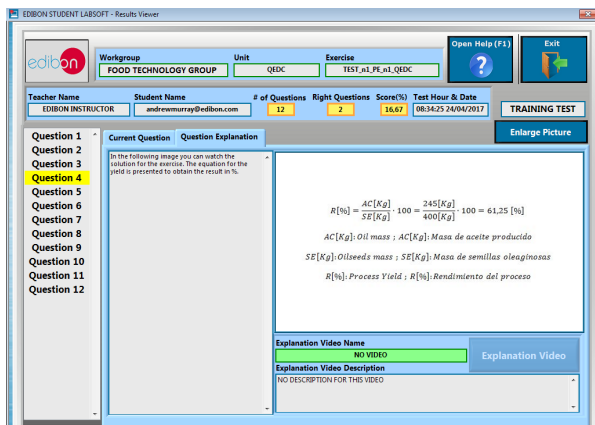
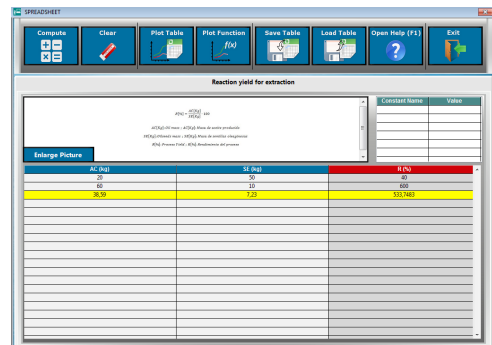www.edibon.com/en/files/expansion/ICAI/catalog

ESL-SOF. EDIBON Student LabSoft (Student Software) Application Main Screen

EPE. EDIBON Practical Exercise Program Package Main Screen

ERS. EDIBON Results & Statistics Program Package - Question Explanation

$$R[\%] = \frac{AC[Kg]}{SE[Kg]} \cdot 100 = \frac{245[Kg]}{400[Kg]} \cdot 100 = 61,25 \, [\%]$$

$AC[Kg]$: Oil mass ; $AC[Kg]$: Masa de aceite producido

$SE[Kg]$: Oilseeds mass ; $SE[Kg]$: Masa de semillas oleaginosas

$R[\%]$: Process Yield ; $R[\%]$: Rendimiento del proceso

ECAL. EDIBON Calculations Program Package Main Screen

✱ Specifications subject to change without previous notice, due to the convenience of improvement of the product.

INTERNATIONAL

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REPRESENTATIVE: