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Engineering and Technical
Teaching Equipment

EMAN

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↳PRODUCTS
  ↳12.-FOOD & WATER
    TECHNOLOGIES

INTRODUCTION

The butter is a emulsion of fat, water and milk solids obtained as a result of the churning, kneading and washing of the conglomerates of fat globules. It is formed by the churning of cream or milkfat and is suitable for human consumption with or without biological maturation produced by specific lactic bacteria.

The Butter Maker Teaching Unit, "EMAN", has been designed to introduce the user into the butter making process, a process that has basically remained the same from its origins. On the other hand, the unit includes present day technical innovations to add quickness and safety to a thousand-year old product and process.

GENERAL DESCRIPTION

The Butter Maker Teaching Unit, "EMAN", has been designed to provide practical training in the manufacture of butter.

The main element is a 25 l capacity tank made of stainless steel. At the top, a cover made of stainless steel with four catches closes the tank. The cover has a transparent sight glass to check the state of the product inside.

A four-blade stirrer located inside the tank will churn the product.

The motor is the most important element of the unit, since it makes the inner blades rotate. This motor is controlled by two switches, a green one to start it and another one to stop it.

The unit also includes a safety system that blocks the blades when the upper cover is not correctly fit.

A knob allows the release of the blades to facilitate the cleaning of the tank.

SPECIFICATIONS

Bench-top unit.

Anodized aluminum frame and panels made of painted steel.

Main metal elements made of stainless steel.

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

A minimum of 4 Kg of cream and a maximum of 12 Kg per batch can be used for butter production.

6 Kg of butter are approximately obtained (from 12 Kg of cream).

Stainless tank with a capacity of 25 l.

Upper cover of stainless steel with catches and product sight glass.

Knob to release the stirrer blade.

Safety system that blocks the stirrer blades when the upper cover is not correctly fitted.

Electric motor.

Blade stirrer coupled to the motor.

Thermometer.

Upper valve for the inlet of fresh water to clean the butter.

Lower valve to drain the whey and the water.

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.

EMAN detail

EXERCISES AND PRACTICAL POSSIBILITIES

1.- Production of butter from different types of liquid cream.

2.- Production of butter by different methods with analytical and qualitative resolutions.

3.- Temperature study and agitation during the process.

4.- "Phase inversion" of the oil/water emulsion which occurs in churning.

5.- Thermodynamic evolution analysis of the butter production process.

6.- Study of the influence of the process time on the final product.

7.- Study of the influence of the turning speed on the final product quality.

REQUIRED SERVICES

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

- Water supply and drainage.

DIMENSIONS AND WEIGHTS

EMAN:

    -Dimensions: 550 x 470 x 410 mm approx.

                    (21.65 x 18.50 x 16.14 inches approx.)
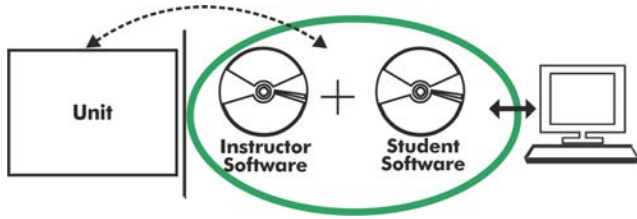
    -Weight: 40 Kg approx.

      (66 pounds approx.)

REQUIRED CONSUMABLES (Not included)

- Liquid cream with a minimum fat content of 33%.

AVAILABLE VERSIONS

Offered in this catalog:

- EMAN. Butter Maker Teaching Unit.

Offered in other catalog:

- EMANC. Computer Controlled Butter Maker Teaching Unit.

EMAN/ICAI. Interactive Computer Aided Instruction Software System:

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.
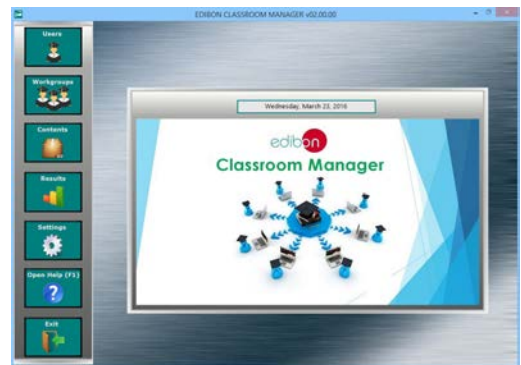
Instructor Software

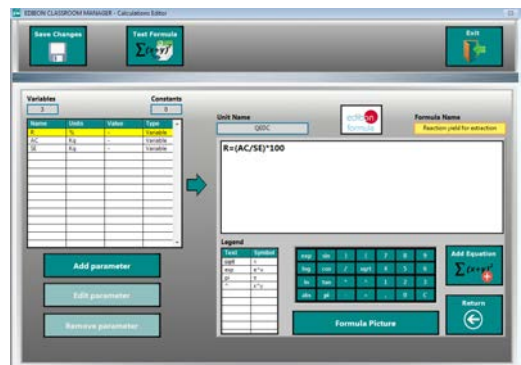### - ECM-SOF. EDIBON Classroom Manager (Instructor Software).

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.
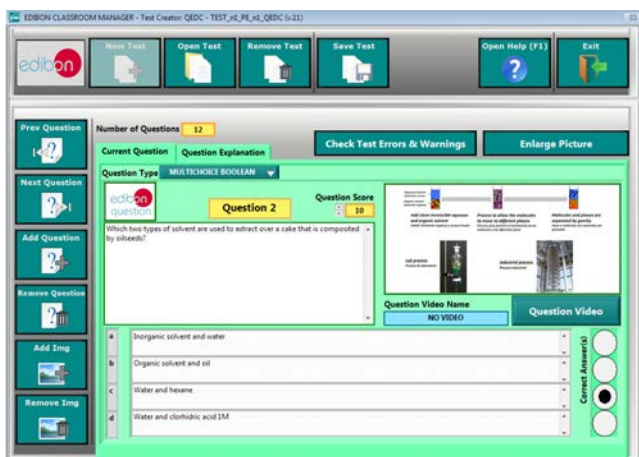
Innovative features:

• 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.
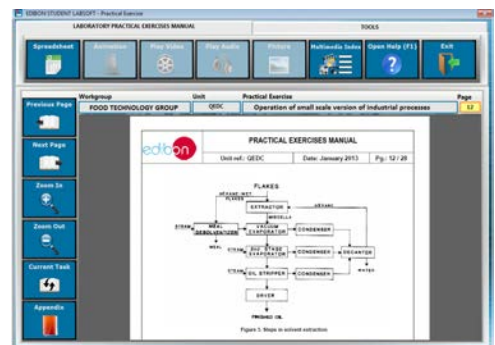
Innovative features:

• 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.

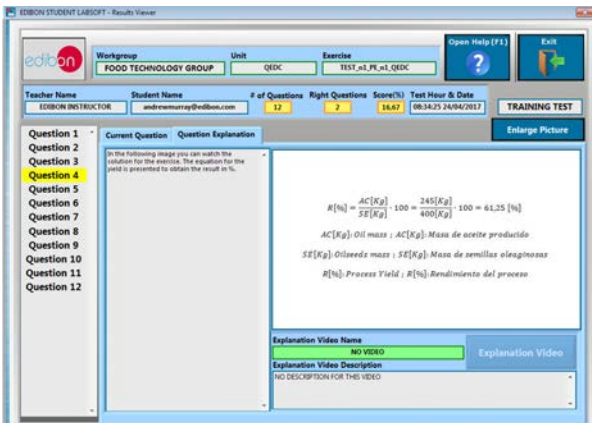For more information see **ICAI** catalogue. Click on the following link:

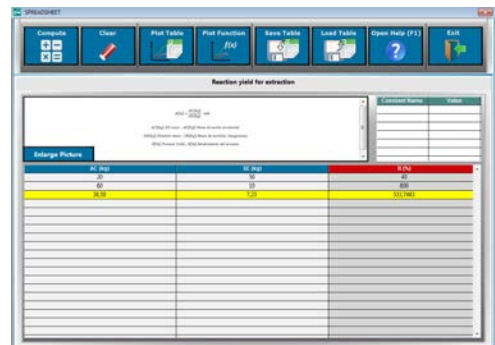www.edibon.com/en/files/expansion/ICAI/catalog

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

ECAL. EDIBON Calculations Program Package Main Screen

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

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INTERNATIONAL

C/ Julio Cervera, 10-12-14. Móstoles Tecnológico.
28935 MÓSTOLES. (Madrid). ESPAÑA - SPAIN.
Tel.: 34-91-6199363   Fax: 34-91-6198647
E-mail: edibon@edibon.com   Web: **www.edibon.com**

Edition: ED01/19
Date: March/2019

REPRESENTATIVE: