



FLUID MECHANICS

SEDIMENTATION STUDIES APPARATUS



DL DKT063

This trainer has been conceived for the study and the demonstration of the natural phenomenon known as sedimentation: the particles contained in a fluid, fallen by gravity, are collected at the bottom of a tank.

Sedimentation is used to clarify all water reducing turbidity. Depending on the characteristics of the suspension (heterogeneous mixture of dispersed solid particles in a fluid), the particles can settle in different ways depending on their density, their concentration in the solution and the density and viscosity fluid in which they are dispersed.

TRAINING OBJECTIVES

With this equipment, students can perform several experiments:

- Study of the characteristics and determination of sedimentation's curves of the same suspension with different solids concentrations.
- Influence of the density of a solid in the speed of sedimentation.
- Influence of density and viscosity of the liquid in the speed of sedimentation.
- Particle size distribution. Features of the sedimentation of solids of the same density and sizes of a different particle.
- Study of variation of the initial height in the speed of sedimentation.
- Study of the use of flocculants. Coagulation-flocculation.
- Comparing characteristics of sedimentation of different suspensions.

TECHNICAL DESCRIPTION

The system consists of 5 glass tubes placed in a graduated support with a backlit panel structure. It is possible to see through this system, the sedimentation process and its intermediate steps, so that the sedimentation speed can be measured.

The trainer is supplied with 5 beakers of 250 ml and a 2-liter jug where suspensions can be prepared and then they can be poured into the tubes. Tubes can be extracted from their site to be able to agitate them until obtaining a homogenous dissolution of the aggregated solids.

Requirements:
Power supply: 230V/50 Hz.



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TECHNICAL DATA

- Anodized aluminum structure.
- 5 removable glass tubes of 1000mm length and 51 mm internal diameter.
- 10 caps with locking mechanism.
- 5 fluorescent lamps.
- Translucent, graduated and backlit rear panel
- Waterproof stopwatch up to 10m resolution 1/100 s.
- 5 beakers of 250 ml.
- 2 liters' jug
- 50 ml pycnometer.
- Precision balance
maximum weight = 410 g / Accuracy = 0.1 g.
- Weight 200 g, for the calibration of the balance periodically
- Dimensions:
Height 1,230 x Width 800 x Length 620 mm.