The right temperature worldwide

LAUDA

The handy LAUDA bubble pressure tensiometer MPT C also records millisecond fast surfactants.

NEW

LAUDA bubble pressure tensiometer MPT C

Product information

Bubble pressure tensiometer MPT C

A further bubble pressure tensiometer has been added to the family of LAUDA tensiometers in the form of the new MPT C. With the little brother to the PC-controlled MPT 2 tensiometer – which has established itself in the field of scientific research – the final step has been taken for the full automation of dynamic surface tension measuring.

Special features of the MPT C

Ultimate user-friendliness is achieved without having to take a detour via the PC. The extremely compact "stand alone" device offers all the necessary features for the simple measurement of surface tensions in the laboratory or as a mobile device.

The measurements are precise and reproducible, yet time-consuming settings can be presented, stored and transferred to a PC at the touch of a button. Like the computer-controlled MPT 2, the measuring method according to Fainerman also guarantees exact surface tensions of even extremely small surface ages and the accompanying "real" bubble age.

The control offers the user two measuring procedures. In the first mode, the bubble frequency is reduced in stages, whereby a specified flow area is gradually passed through in order to clearly determine and represent the dependency of the dynamic surface tension from the surface age.

The flow is re-adjusted at every single measuring point and is identified as measured value. The evaluation of the measurements and the necessary correction, such as for calculating the dead time, is carried out on a scientifically-founded base.

In the "constant flow" mode, the bubble frequency and, thus, the surface age, is kept constant in order to document any changes in the surfactant concentration, e.g. in the course of reactions.

Various areas of application

Thanks to the self-explanatory user guidance, the simple cleaning of the capillaries as well as the compact structure of the unit, the unit is especially suitable for the quality control of dynamically-critical surfactant solutions or for the fast determination of a surfactant in concentrations above the critical micelle concentration.

Its robustness, user-friendliness as well as its high degree of precision predestines the MPT C for the use in quality control, for example. Measurements are carried out completely independently by the user and documented along with the necessary settings, thus complying with the strict specifications of the GLP guidelines.

Example: optimisation of the surfactant dosage:

It is only by measuring the surface tension of extremely short-lived surfaces that the surfactant content can also be determined above the critical micelle concentration and be optimised directly in the process or a dosage formula be created from it.

New measuring options

- ➢ *Extremely broad dynamic range from 1 ms to several seconds*
- ➢ *Automatic recognition of the transition point bubble/steel area*
- ➢ *Tabular representation of the dynamic surface tensions, number of measuring points, real bubble age*
- ➢ *Graphic representation of the dependency on the bubble age, linearly or logarithmically*
- ➢ *User-defined measuring point density and duration of the measurement*
- ➢ *Storage of up to 50 measuring results including the accompanying parameters*
- ➢ *Numerical description of samples determined by the user*
- ➢ *Immediate or later output of the measured values on an optional printer or PC via RS 232 interface*
- ➢ *Slip-in cards with relay output in order to control the processes via the surface tension*

Simplest handling via external remote control and the ergonomically-designed measurement desk

The external, handy Command remote control with large graphic display can be intuitively used without the need for any special know-how. The integrated microcontroller enables a multitude of options. The program offers a series of useful testing methods with which, for example, it can automatically carry out a scan of the dynamic surface tensions over a range of 1 millisecond, thus recording the adsorption kinetics of even very fast surfactants in a complete, comprehensive manner. This method of measuring was formerly only realised by means of the computer-controlled MPT 2 bubble pressure tensiometer.

The ergonomic measurement desk contains the sensitive pressure sensors: also integrated are the holder for the capillaries included as standard accessories, humidifier and test tubes. A temperature probe, combined with the LAUDA thermostats can guarantee the maintenance of the temperature. The measuring capillary can be inserted directly into the reaction receptacle via a hose connection up to one metre in length or via a flow cell (bypass) for the "online" monitoring of the surfactant reactions. This enables, for example, the control of the surfactant consumption during the washing process.

Technical data

Immediate or later output of the measured values is optional via a printer or a data transfer program on the PC via the RS 232 interface. The measurement and the documentation of the temperature in the sample can also be carried out by means of an optional digital temperature probe. In addition to the proven PVDF-coated glass capillaries, steel capillaries (such as for highly alkaline samples) and disposable capillaries are available.

Technical data of the MPT C		
Measured value		Dynamic surface tension, Fainerman method
Measuring modes		Constant flow, phased flow changes, quick scan
➢ Resolution	mN/m	0.1
Measuring range of surface tension	mN/m	10 - 100
Dynamic range	ms	1 - 2.000
Monitoring modus “constant flow“	min.	1- 60 and more
Temperature range (sample)	° C	5 - 85
Temperature measurement		Digital (optional)
➢ Resolution	° C	0.1
➢ Precision	° C	± 0.5
Display size/type	mm	320 x 240 graphic display, 11 x 40 characters
Modes of display		Tabular, graphic: surface tension as a function of the surface age (t, Log t)
Selection of measuring mode		Menu-controlled
Parameter input		Menu-controlled
Sample description		Numerical
Measuring point density mode “constant flow“	s	Selectable
Measurement value		Max. 50 results with date and time
Duration of experiment	min.	3 - 20 (depending on the measuring point density)
Interfaces		RS 232
Documentation		Printer, PC (optional)
Software for data transmission		For PC running WINDOWS 95 and higher (optional)
Weight	kg	Approx. 4.0
Power consumption	W	0.01
Size of the measuring console (BxDxH)	mm	300 x 300 x 300
Power supply	V	External power supply, 90 - 264

Standard accessories

- Two glass capillaries
- Set of beakers to take samples
- Humidifier

Further accessories

- Digital temperature probe for measuring in the sample
- Software for PC under WINDOWS (optional)
- Double-walled thermostating vessel
- Diverse types of capillary
- Protocol printer
- Online flow cell
- Membrane pump for capillary rinsing

Measuring standards

- ASTM D 3825

Steel and glass capillaries for various samples.

Complementary accessories simplify work.

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