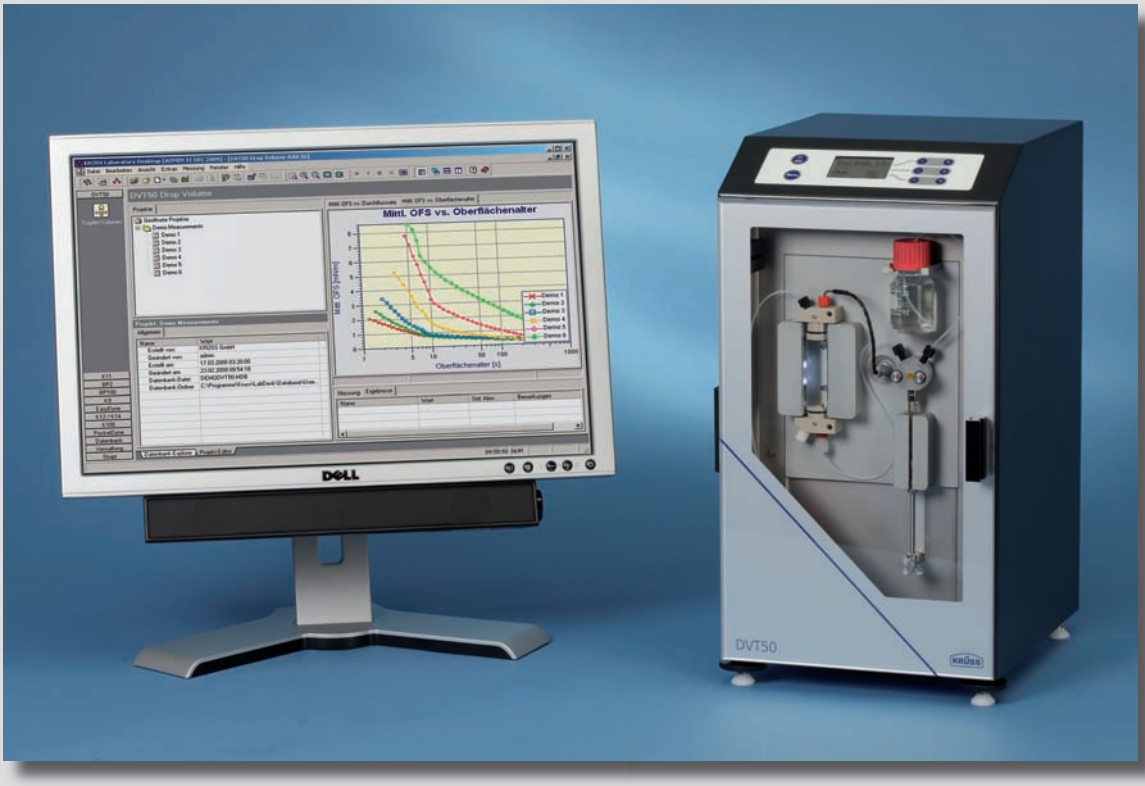
INFORMATION

Drop Volume Tensiometer DVT50



The interfacial tension value is often a question of time and speed. The DVT50 measures the dynamic interfacial tension as a function of the interface age and provides important information about the adsorption kinetics of surface-active substances.

- **Measuring range from 0.1 to 100 mN/m**
- **Measurement of dynamic interfacial and surface tension**
- **Defined measuring conditions by thermostatting both the dispensed phase and the surrounding phase**
- **Small sample amounts of the dispensed phase**
- **Rapid sample exchange thanks to simple filling and cleaning procedures**
- **High reproducibility thanks to fully automated measuring procedure**

Solutions for a lot of applications

Whether pumping, stirring or flooding - oil-water interfaces are always in motion. This is why speed is important: an effective surfactant in static tests may be unsuitable for technical use if it is too slow. A concentration that is adequate for stationary interfaces may turn out to be too low under dynamic conditions.



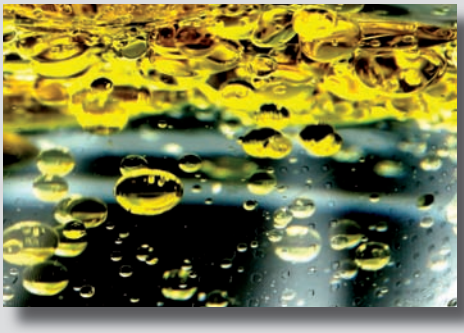


- **Emulsification in the pharmaceutical and cosmetic industries**
- **Food manufacture**
- **Cleaning**
- **Oil production**
- **Surfactant formulation**
- **Purity testing of hydrophobic liquids**
- **Solvent-free degreasing**

The DVT50 is a speedometer for surfactants. It approaches dynamic process conditions and measures the interfacial tension as a function of the interface age.

The DVT50 can also be used wherever surfactants interfere because even trace impurities are visible in the measuring curve.



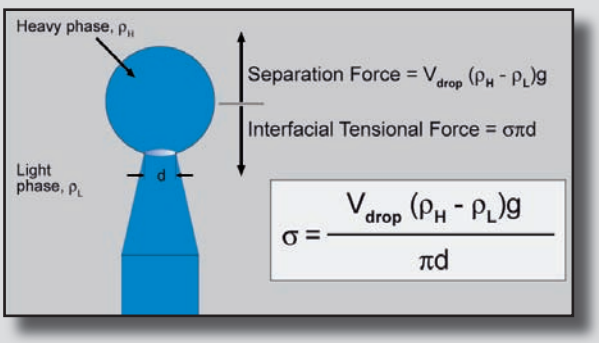


Technology with a lot of ideas

A drop that is dispensed through a capillary into a surrounding phase is initially held at the tip due to interfacial tension. It is only released when, at a certain drop volume, the buoyancy or weight compensates for the interfacial tension.

The DVT50 detects the release of each drop and determines the volume that passes between two detector signals.

The time difference between two drops corresponds to the interface age. By varying the drop phase flow rate, a plot of interfacial tension against interface age can be obtained.



Force equilibrium at the capillary tip

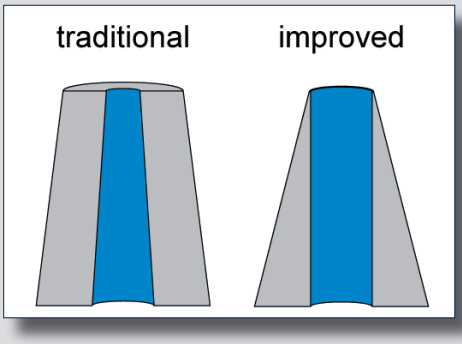


Construction with a lot of know-how

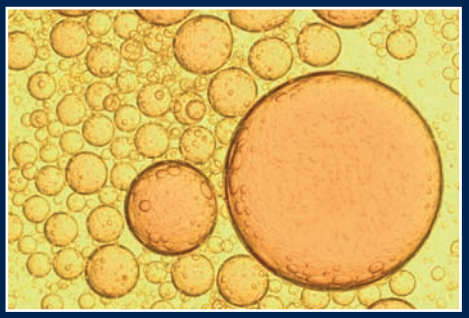
The instrument is very versatile thanks to the wide interfacial tension measuring range and the possibility of thermostatting both liquid phases. The dispensing stroke resolution of 0.1 μm ensures extremely high-precision volumes.

Very simple handling during filling and cleaning – combined with the software's easily programmable measuring sequences – ensures smooth measuring procedures for high sample throughput. The closed system with non-sensitive materials allows the measurement of many hazardous substances.

The DVT50's conical capillary minimises contact between the tip and the drop liquid. This allows interfacial tension to be calculated directly from the drop volume, avoiding the correction calculations typical for drop volume methods.



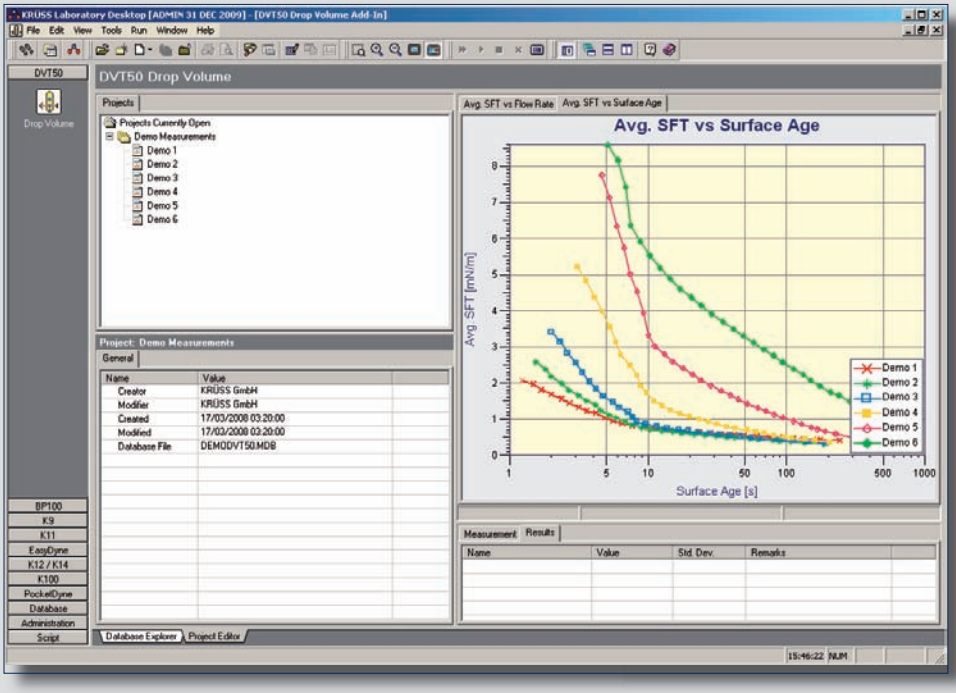
- **Measuring range 100 mN/m down to 0.1 mN/m**
- **Measured value resolution 0.001 mN/m**
- **Flow rates from 0.27 to 660 µl/min**
- **Automatic refill of drop phase liquid during the measurement**
- **Temperature measured inside of the surrounding phase**



Software with a lot of intelligence

LabDesk is the easy-to-use universal software for KRÜSS tensiometers. Measurements are easily programmed and are carried out fully automatically. User defined tolerance values for the standard deviation shorten the measuring time. Standard plots are generated automatically.

Data from different instruments can be managed in common databases. The program also benefits from convenient export functions and an extensive and extendable substance database.



Technical data	DVT50
	
Dynamic SFT / IFT	
Measuring range	0.1 to 100 mN/m
Resolution	0.001 mN/m
Reproducibility (Rel. SD at 45 mN/m)	< 0.2 %
Syringe Drive	
Flow rate (with 500 µl syringe)	0.27 to 660 µl/min
Resolution	0.1 µm
Automatic Refill	Yes
Temperature Control	
Temperature range	-10 to 90 °C
Components under control	Cell, Syringe, Reservoir
Housing	
Size (L×W×H)	280×240×455 mm
Weight	13 kg
Power	
Power supply	12 V DC, 100 to 240 V AC (47 to 63 Hz)
Power consumption	Typical 6 W, max. 10 W
Interfaces	
PC	USB, RS232
Auxiliary	RS232

Measuring methods

- Surface tension
- Interfacial tension (rising drops)
- Interfacial tension (falling drops)

Standards

- ISO 9101
- ASTM D2285
- UNE 55840:1989-11-21
- GOST R 50097

Accessories

- Temperature probe for measurement of surrounding liquid
- Various dosing cylinder
- Various capillaries
- Various thermostats

Technical specifications are subject to change without notice.

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