Mobile Surface Analyzer

MSA One-Click SFE

Measuring surface free energy in a second with only one click

Designed according to the requirements of quality control, our Mobile Surface Analyzer – MSA measures surface free energy with two liquids and fully automatically using the “One-Click SFE” method. Using a Liquid Needle dosing unit, the MSA doses two parallel drops with one click, followed by the direct analysis of the contact angles and the derived results of the surface free energy. All steps are automated and happen within a second. The results enable well-founded statements about wettability by aqueous or organic liquids. The MSA supports you in your quality assurance in the pre-treatment and coating of solid materials in an ideal way.

Tasks and applications

- Measurement on large workpieces and finished products such as automobile parts
- Determination of the wettability of solid materials before coating or bonding
- Quality assurance of cleaning steps as well as pretreatment and coating processes
- Testing the effectiveness of hydrophobic coatings

Measuring methods and options

- Measurement of contact angle
- Calculation of surface free energy according to Owens-Wendt-Rabel-Kaelble, Wu, Zisman, and Fowkes

Simple in operation and versatile in use

The MSA One-Click SFE is optimally equipped for the mobile and non-destructive quality control due to the power connection to a notebook and its low weight and small footprint. The instrument analyzes samples of any size, such as automobile bodies. It provides reliable values even when measuring vertically or overhead and also works on slightly convex samples.

The intuitive ADVANCE software for the instrument uses proven scientific methods to calculate the surface free energy. Notably the determined polarity of the surface gives direct feedback to the effect of pretreatment methods such as plasma treatment.

Non-destructive quality control

Also works on curved samples and even vertically or overhead

Innovative Liquid Needle dosing technology

The integrated Liquid Needle dosing unit dispenses two parallel drops within milliseconds with high volume precision. This simultaneous dosing of two drops eliminates the need to change the test liquid during the measurement, as is the case with conventional dosing techniques. The kinetic energy is kept low in order to prevent unwanted prewetting of areas around the drop, which could falsify the result.

Cartridges that can easily be refilled outside the instrument make for simple operation of the dosing system. Fully charged, the instrument is capable of dosing 1000 droplets of each liquid.

Specifications

Camera system	
Connection	USB 3.0
Performance	25 fps at 1000 × 700 px
Illumination	
Type	high power LED, adjustable
Dosing system	
Dosing	Liquid Needle
Resolution	0.1 µL

Contact angle	
Range	0 to 180°
Resolution	0.01°
Instrument dimensions	
Footprint	84 mm × 32 mm (W × D)
Height	112 mm
Weight	0.85 kg