Mobile Surface Analyzer

MSA Flexible Liquid

Fast, automatic, and non-destructive wetting analysis with your liquids of choice

In the Flexible Liquid configuration, the Mobile Surface Analyzer – MSA carries out automated contact angle measurements between freely selectable liquids and solid samples. The focus lies on non-destructive analysis with formulations such as inks, coatings, or adhesives, to evaluate their wetting behavior in real processes.

Tasks and applications

- Analyzing the wetting behavior of formulations such as paints, coatings, or adhesives on solid materials
- Checking wettability of plastics, glass, ceramics, wood, paper, or metal
- Quality assurance of activation processes such as plasma treatment, flame treatment, or corona treatment
- Measurement on large workpieces and finished products such as car bodies, aircraft parts, or walls

Measuring methods and options

- Contact angle of a drop on a solid surface
- Surface free energy of a solid using contact angle data
- Surface tension using the constrained sessile drop method

An automatic contact angle instrument in the palm of your hand

A quality camera, lighting, and a software-controlled dosing unit – everything necessary for reliable contact angle measurement is integrated in a light, hand-held device: the MSA Flexible Liquid. With its very small footprint, the instrument can be placed on large workpieces in any spatial orientation without the need to cut them to size. After quickly inserting and filling a cartridge, wetting behavior can be measured within seconds by just pressing a button.

Wetting analysis with almost any liquid

The MSA Flexible Liquid is ideal when you want to know the wetting behavior of a formulation with unknown surface tension rather than that of a standard test liquid. The measurement reveals how your actual liquid behaves on your solid. This helps to optimize paints, adhesives, and other liquids as well as the surface properties of solid materials. Since disposable cartridges are used, contaminating or hardening liquids are no problem at all.

Software with versatile automation and evaluation options

The ADVANCE software for the instrument has versatile and intuitive options for automations which completely control the dosing process, the accurate and robust analysis of the drop image, and the evaluation down to an automated result export. This whole process can be started just by pressing the instrument's measurement button. When using two or more test liquids with known characteristics, ADVANCE also calculates the surface free energy of the material. Notably the determined polarity of the surface gives direct feedback to the effect of pretreatment methods such as plasma treatment.

Specifications

Camera system	
Connection	USB 3.0
Performance	25 fps at 1000 × 700 px
Illumination	
Type	high power LED, adjustable
Dosing system	
Dosing	single direct dosing
Resolution	0.25 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