

Instructions

TEST INKS

Test inks are liquids that are used to measure the surface energy.

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Note / Important:

Please note that test inks are a quick method for estimating surface energies.

Measurement series with multiple measurements can reduce the error tolerances.
However, these cannot be completely ruled out.

As with any measurement method, a critical examination of the measurement results is essential when determining surface energies using test inks. The measured values determined using test inks to measure the surface energy are relative values and can only be compared with other measuring methods to a limited extent. The surface energy determined can only ever be a measure of the current condition of the substrate, as experience has shown that the surface energy decreases with storage time.

Close immediately after use and store in the dark!

The shelf life of the test inks is six months after opening the bottles if stored correctly (dark + no direct sunlight).

The inks and brushes must not be contaminated or mixed with other test inks or other liquids.

Hazard warnings: Safety data sheet

https://www.plasma.com/downloads/

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Surface energy is a vital aspect when it comes to the adhesion of inks, paints, adhesives etc. It is specified in mN/m (millinewton per meter).

With some exceptions, the following applies in general:
The higher the surface energy of a material, the better the adhesion of a substance applied to its surface.

A low surface energy may be attributable to the properties of the material. Many synthetic materials, for example, are characterised by a low surface energy and thus need chemical or physical pre-treatment to improve the adhesion.

Determination with test inks is a simple method for measuring the surface energy of a wide range of materials such as plastic, metal, glass or composites. Test inks are an excellent tool for quality assurance during ongoing production as well as for the determination of the exact parameters of a plasma pre-treatment.

Please read these instructions and note the reverse side!

How to use the test inks:

1. *It is known from experience that untreated materials have a low surface energy. Therefore, it is advisable to first select a test ink from the bottom measuring range.*

2. *Then, observe the behaviour of the brush stroke applied to the surface of the material for 3 seconds. The evaluation is now based on the judgement of the brushstroke:*

   · *When the brush stroke contracts, the surface energy of the material is smaller than that of the test ink. Repeat the test with a lower value of the test ink and step by step select smaller values until the brush stroke does not change. In this way, you gradually approach the correct value of the material.*

   · *When the brush stroke remains intact, the wettability of the material is good and the surface energy is at least the same as the value of the test ink.*

   · *When the brush stroke disperses, the surface energy of the material is greater than that of the test ink. In this case, repeat the test with a higher value of the test ink and step by step select higher values until the brush stroke does not change.*

3. *Plasma treatment influences the surface energy and changes the wetting result. The required surface energy is determined by means of further passes, modified if necessary and documented.*

