

Instruction for use Test Pens 32 – 70 mN/m



Danger

Measuring surface tension of plastics

Testing the wettability of plastic films is defined in DIN ISO 8296 in accordance with ASTM D 2578. By comparison, however, the ASTM method gives somewhat lower values. The procedure is a fast, simple and reproducible means of making a relative assessment of the adhesion of printing inks and glues on the films

- **Application:**

The test method is based on assessing the wetting of inks of different surface energies on the plastic surface to be tested. This surface must be neither printed nor coated. Dip the brush on the bottle cap into the test solution, wipe off excess ink on the edge of the bottle neck and apply the ink immediately to the surface to be tested. The test pen can be used as any other normal felt-tip pen. The stripe of ink should not be less than 100 mm. If the edges of the liquid contract and form droplets within two seconds of application, repeat the test with ink of lower surface energy until the edges remain intact for two seconds. If the edges of the liquid remain intact for longer than two seconds, repeat the test using ink of higher surface energy until the time of two seconds is obtained. The value indicated on the bottle, the test pen then corresponds to the surface energy of the plastic. Surface energy values are given in mN/m (= dyn/cm). Conduct the test in the standard laboratory atmosphere 23/50, i.e. at 23° C +/- 2° C ambient temperature and relative humidity 50% +/- 10%.

The solutions must not be mixed together. To ensure that brushes for different test inks are kept apart, open only one bottle at a time. Close the bottle immediately after each test to prevent humidity absorption.

Replace the cap of the test pen immediately after every use to prevent drying out. Contamination of the felt tip will produce false test results and render the test pen unusable.

To obtain best results, extreme cleanness is required when testing. Fingerprints or any other form of contamination on the test surfaces will produce false test results.

- **Hazard statements / Precautionary statements**

The test inks, test pens contain considerable amounts of formamide and 2-ethoxyethanol. Both substances are classified as toxic (T). Avoid all direct contact with the skin and inhalation of the vapours. **Do not work** with the test inks, test pens during pregnancy. Safety data sheets are available on request.

Consider following Hazard (H)-statements und Precautionary (P)-statements:

H226: Flammable liquid and vapour. H360FD: May damage fertility. May damage the unborn child. H351: Suspected of causing cancer, H331: toxic if inhaled. H302: harmful if swallowed.

Prevention: P210: Keep away from heat/sparks/open flames/hot surfaces. No smoking. P201: Obtain special instructions before use. Work under hood.

Response: P304 + P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. P308 + P310: IF exposed or concerned: immediately call a POISON CENTER or doctor/physician. Restricted to professional users.

Test inks, test pens 32-56 mN/m: EC-No. 203-804-1, EC-Label, UN-No. 11711

- **Shelf life**

Shelf life of test inks is 18 months and the test pens 12 months. Dispose test inks, test pens after this period. Keep the inks, test pens from light and store them firmly closed by room temperature.

- **Term of usage:**

Maximum usage of the test ink after first use is six months. Note the date of first use in the designated label on the bottle. Maximum usage of the test pens after first use is three months.

- **Disposal considerations:**

Product:

Chemicals must be disposed of in compliance with the respective national regulations. Contact either the authorities in charge or approved waste disposal companies which will advise how to dispose of special waste.

Packaging:

Product packaging must be disposed of in compliance with the country-specific regulations or must be passed to a packaging return system. Contact either the authorities in charge or approved waste disposal companies which will advise how to dispose of special waste.

Tested samples:

Collect samples measured with test inks, test pens in closed bin. Samples contaminated with test inks, test pens must be disposed of in compliance with the respective national regulations. Contact either the authorities in charge or approved waste disposal companies which will advise how to dispose of special waste.