



## **SURFACE TENSION TEST INKS / DYNE LEVEL TEST PENS**

Conforming to ASTM D2578-67 and DIN 53 364 Test Procedures

Our Test Pens are designed to indicate film surface treatment levels on polymer based substrates and establish that the material is correctly treated prior to printing. The barrel of the pen is printed with the minimum Dyne level that the ink will determine.

### ***Instructions for using Test Fluids***

Surface test fluids were introduced to give an accurate measurement of graduated surface tension levels. The fluid is applied to the surface or substrate until a satisfactory dyne level is found. Spread the test fluid from the felt tip pen lightly over an area of approximately 7cm<sup>2</sup> of the test specimen, noting the time it takes for the continuous film of ink to break into droplets.

Experience has shown that wetting is normally adequate when a continuous film of test fluid remains intact for 2 seconds. Breaking of the fluid into droplets in less than 2 seconds indicates a lack of wetting and a lower numbered test fluid should be tried. If the fluid remains intact for longer than 2 seconds, a higher numbered test fluid should be tried. Some experience with this test procedure will prove necessary to enable an accurate reading to be made. The aim is to establish the lowest reading at an optimum dwell time of 2 seconds.

Extreme care must be taken to ensure the film surface is not touched or contaminated in the areas in which the tests are to be made.

It is recommended that when testing during production, the test fluid should be applied across the full web width and it should be noted, that shrinkage of the liquid film on the sides of the applied fluid, does not necessarily indicate a lack of wetting out.

### ***Application***

Draw a line across the material being tested. Apply sufficient vertical pressure to enable a good ink flow.

Excessive pressure will adversely affect film surface treatment levels.

### ***Results***

**1. Properly Treated:**

The ink lies evenly on the material in a continuous line. There is no ink reticulation. The surface tension of the material is at, or higher than, the dyne level of the ink.

**2. Not Treated:**

The ink reticulates into droplets. The surface tension of the material is well below the dyne level of the ink.

**3. Partial Treatment:**

The ink line is defined but there is partial reticulation from the edges. The surface tension of the material is just below the dyne level of the ink.

## ***Important***

- The test inks should not be used or stored at temperatures above 20°C or below freezing, to prevent inaccurate dyne level readings.
- The bottled inks should not be exposed to direct light. Therefore keep them in their original box with the lid closed when not in use. Also, repeated exposure to air of the bottled inks, will alter the dyne levels. Properly sealed bottles prevent this occurring.
- We recommend the replacement of the inks regularly if the bottled inks are frequently opened to atmosphere.
- Be careful not to contaminate the pen tips, by exposure to more than one dyne level, or in particular, by frequent application to high slip materials.

## ***Recommendations***

- If bottled inks are exposed to the air on a daily basis:- Dispose of remaining ink after 3 months.
- If bottled inks are exposed to the air on a weekly basis: - Dispose of remaining ink after 6 months.
- If bottled inks are exposed to the air on a monthly basis: - Dispose of remaining inks after 12 months.

### **NB:**

- It is recommended that the waste solutions be collected and disposed of safely by a chemical waste disposal plant.
- It is advisable for women to wear protective gloves when handling the test inks.
- Avoid any skin contact especially the eyes with the test solutions. If contact occurs wash immediately with copious amounts of clean water.
- Avoid inhaling fumes from the test inks solutions; use in a well ventilated area.
- Due to circumstances beyond our control, we cannot indemnify customers if inks are said not to conform to specification at any point in the distribution chain.

**THE TEST PENS ARE AVAILABLE FOR 38, 40 AND 44 DYNE INK**