FISCHLI + FUHRMANN

SURFACE TENSION TEST INKS / DYNE LEVEL TEST PENS

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

Are you achieving the dyne levels you need? Do you know the dyne level of your material prior to treating? Key to any surface treatment application is knowing your starting and ending treatment levels. Our Dyne Pens provide a quick and simple means of testing surface energy by providing vivid easy to read results on a wide variety of surfaces.

Dyne pens are designed to indicate surface treatment levels on polymer-based substrates and establish that the material is correctly treated prior to applying inks, coatings, paints or adhesives.

Available Surface Tension Test Inks

Regular Range:
38 - 58 dyne level, in steps of one.
59 - 71 dyne level, odd numbers only.

Eco Range:
28 - 58 dyne level, in steps of one.
59 - 71 dyne level, odd numbers only.

We recommend to use and compare EITHER the regular range or the Eco Range - do not mix and match!

Instructions

1) Remove the pen cap and briefly depress the tip on a clean surface until moist.

2) Spread the test fluid from the felt tip pen lightly over an area of approximately 7cm² of the test specimen. Apply sufficient vertical pressure to enable good ink flow. Excessive pressure will adversely affect film surface treatment levels.

3) Note the required time for the applied solution to break into droplets and/or peripheral shrinkage to occur. Read the solution behaviour by observing the centre area of the applied solution.

    a. If the dyne solution remains intact for longer than 2 seconds, repeat the test with the next higher surface tension solution.

    b. If the dyne solution breaks into droplets and/or peripheral shrinkage in less than 2 seconds, repeat test with next lower surface tension solution.

4) Do not repeat test on the same area of material.

5) Repeat Steps 1 and 2 until the correct dyne level is determined. The aim is to establish the lowest reading at an optimum dwell time of 2 seconds. The correct dyne level will be equal to the solution that holds for exactly 2 seconds before droplets or peripheral shrinkage occur.

Reading the Results

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.

Not Treated:
The ink reticulates into droplets. The surface tension of the material is well below the dyne level of the ink.

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.

Click on image for Video Instruction

YouTube

Note:

- 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.
- 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.




IMPORTANT:

- The test inks should not be used or stored at temperatures above 20ºC or below freezing, to prevent inaccurate dyne level readings.
- The bottled inks should not be exposed to direct light. Therefor keep them in their original box with the lid closed when not in use.
- Repeated exposure to air of the bottled inks, will alter the dyne levels. Properly sealed bottles prevent this occurring.
- Replace 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.

LIFESPAN:

If bottled inks are exposed to the air:

On a daily basis:
dispose of remaining ink after 3 months.

On a weekly basis:
dispose of remaining ink after 6 months.

On a monthly basis:
dispose of remaining inks after 12 months.

Replace the inks regularly if the bottled inks are frequently opened to atmosphere.

HEALTH & SAFETY:

- The waste solutions be collected and disposed of safely by a chemical waste disposal plant.
- 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.

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