Dyne Pens and Test Fluids

DYNE TEST PENS: (Valve Tip Applicator type) Formulated to ISO 8296.

Our Dyne Testing Pens are the valve tip applicator type and not the "Felt Tip Pen" type. The Valve Tip Applicator principle is simple: keep the testing part of the pen away from the fluid storage part of the pen (in other words, no wicking from the substrate). By pressing the pen tip firmly down, the valve is opened and fresh fluid floods the tip; thus flushing it clean, this allows the tester to lightly pass over the sample to accurately determine the Dyne level. The disposable pens have a fluid capacity of 15ml and are available in 1 Dyne (mN/m) increments from 30 to 70 mN/m.

<table>
<thead>
<tr>
<th>Pack Type</th>
<th>Pens Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Pack</td>
<td>6 pens: 36, 40, 44, 48, 52 &amp; 56 mN/m in pen box.</td>
</tr>
<tr>
<td>SelfSelect Pack</td>
<td>6 pens: Select any 6 pens between 30 &amp; 60 mN/m in pen box.</td>
</tr>
<tr>
<td>ConverterPack</td>
<td>6 pens: 38, 38, 42, 42, 44 &amp; 44 mN/m in pen box.</td>
</tr>
<tr>
<td>BlownfilmPack</td>
<td>6 pens: 34, 34, 38, 38, 42 &amp; 42 mN/m in pen box.</td>
</tr>
<tr>
<td>Individual pens</td>
<td>Select from range 30 – 70.</td>
</tr>
</tbody>
</table>

DYNE QUICK TEST 38-40 PENS (Red ink)

Use a slight pressure to draw the pen tip across the surface to be tested. If the ink lines shrink or bead within 1-2 seconds then the surface is NOT treated to a level of 38 Dynes. If the ink lines remain as marked and do not shrink then the test sample surface IS treated to a level of 38 Dynes or higher.

“DyneQuickTest Pens” only available in 38-40 (Dynes) mN/m.

DYNE TEST SOLUTIONS

Type A: Blue – Formulated to ISO8296
Supplied in 20ml bottles with integral brush applicator and 100ml bottles with dropper cap. Containing: formamide, 2-ethoxyethanol & dye. Not suitable for use on soft PVC. Available values: 30 to 72mN/m (Dynes).

Type B: Yellow - (NON-TOXIC)
Supplied in 20ml bottles. Ethanol based. Not suitable for use on Polypropylene. Available values: 30 - 72mN/m (Dynes).

Kits available
- Standard kit of 6 bottles in carrying case: 36, 40, 44, 48, 52 & 56 mN/m.
- Self Select Kit of 6 bottles in carrying case.
- Individual bottles.

DYNE TEST APPLICATOR SWABS

Compliant with ISO8296
Cotton Applicator Swabs ( to ISO 8296, ASTM D2578 & TAPPI T-698 test methods).
150mm long shaft: ensures your hand is kept well away from the test fluid and the substrate to be tested.
Binder free: ensures that the binders used in common cotton buds do not contaminate the test fluid or invalidate test results.
Glue free: ensures that the glues used in common cotton buds do not contaminate the test fluid or invalidate test results.
Produced in an ISO9001-2000 registered facility to assure consistent high quality.
“DyneX” CAM and CAM Lite - Contact Angle Meters

Compact CCD camera based instruments for measuring contact angles of liquids on solids and Free Surface Energy of solids. FireWire interface to PC makes the instrument extremely fast, yet easy to install. Powerful drop shape analysis software makes the measurements user independent and error free, ensuring reproducible results. The Contact Angle Meter is an accurate, simple, and easy to use, yet extremely powerful instrument. Designed for industrial, QC, education and R&D applications these instruments set a new standard in contact angle measuring technology.

Applications

For highly accurate and easy measurements of:

• wettability
• contact angles
• surface free energy
• absorption
• adsorption
• spreading
• cleanliness
• surface heterogeneity
• surface tension*
• interfacial tension*

*requires extended software for “DyneX” Lite

Technical specifications:

<table>
<thead>
<tr>
<th></th>
<th>“DyneX” CAM Lite</th>
<th>“DyneX” CAM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measuring range</td>
<td>0...180°, 0.01...999 mN/m</td>
<td>0...180°, 0.01...999 mN/m</td>
</tr>
<tr>
<td>Accuracy</td>
<td>± 0.1°, 0.01° mN/m</td>
<td>± 0.1°, 0.01° mN/m</td>
</tr>
<tr>
<td>Maximum sample size</td>
<td>W unlimited x L 200 x H 50mm (with stage)</td>
<td>W unlimited x L 180 x H 225mm (H 95mm with stage)</td>
</tr>
<tr>
<td>Frame interval</td>
<td>100 ms (16...1000 ms with extended software)</td>
<td>2...1000 ms</td>
</tr>
<tr>
<td>Resolution</td>
<td>512 x 480 pixels</td>
<td>512 x 480 pixels</td>
</tr>
<tr>
<td>Max. measuring speed</td>
<td>10 frames/sec (60 frames/sec with extended software)</td>
<td>60 frames/sec (420 frames/sec with high speed camera)</td>
</tr>
<tr>
<td>Camera</td>
<td>Firewire digital camera</td>
<td>Firewire digital camera with zoom optics</td>
</tr>
<tr>
<td>Light source</td>
<td>LED based background lighting</td>
<td>LED based background lighting</td>
</tr>
<tr>
<td>Dimensions</td>
<td>H 310mm, W 130mm, L 495mm</td>
<td>H 590mm, W 200mm, L 740mm</td>
</tr>
<tr>
<td>Weight (basic frame)</td>
<td>5 Kg</td>
<td>7.3 Kg</td>
</tr>
<tr>
<td>Power supply</td>
<td>100...240 VAC</td>
<td>100...240 VAC</td>
</tr>
<tr>
<td>Frequency</td>
<td>50...60 Hz</td>
<td>50...60 Hz</td>
</tr>
</tbody>
</table>
“DyneX” Drawdown Platform

Full width magnetic clamp allows precise sample positioning with secure grip. 12.7mm thick float glass platform large enough for direct A to B comparisons or evaluation of machine caused treatment variations. 305mm x 305mm smoothing pad with closely controlled compressibility is engineered to promote uniform fluid distribution with minimal squirm. Each unit is meticulously inspected to assure flatness. Ideal for use with “DyneX” applicators. Five pre-adjusted shock absorbing levelling feet and surface mounted spirit level ensure precise levelling and firm footing. Liquid crystal thermometer is accurate to better than 1°C.

“DyneX” Metering Rods

Applies a highly uniform wet film coating. These wire-wound metering rods, when used on a precision surface such as the “DyneX” Drawdown Platform, will apply a highly uniform wet film thickness, which is ideal for Dyne testing. These rods, widely known as Mayer Rods or drawdown bars are fabricated from 303 stainless steel; the wire winding is 304 stainless steel. The 400mm long rod has 305mm of wire wound on centre. Rods are available in 6.3mm and 12.7mm diameters.

These lab rods can be used either to test two coatings simultaneously, or for full width substrate evaluations using one test liquid. Economical and easy to use; simple clean-up with water, alcohol, appropriate solvent and low lint cloths. With the use of such non-abrasive cleaners, metering rods can be repeatedly reused.

“DyneX” Applicator

With a Teflon® coated surface it is ideal for Dyne testing – no attraction to, or contamination from the applicator affects test results. Remarkably fast and easy clean-up saves time and cleaning supplies.

The “DyneX” applicator measures only 13 x 13 x 64mm. A precision ground gate, 38mm wide, is centered on each of the four edges. This restricted passage channels the flow of the Dyne fluid through the gate whilst limiting the wet film thickness applied to a maximum of only 12.5 microns.

This tool can produce high quality drawdowns in a confined area, making direct benchtop testing a reality. For best results, we strongly suggest use on a “DyneX” drawdown platform. All four gates are precision ground to the same clearance to facilitate quicker test-to-test turnaround, and to provide the longest service life. Packed in a cushioned protective container.

To perform the Dyne test with a “DyneX” applicator, first apply a short bead of surface tension test fluid from a dropper bottle directly to the sample surface. As soon as possible, the applicator is then drawn down over this bead, spreading it over the surface. Determination of Dyne level by wetting is then performed to a standardised test procedure.

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