An Inherently Simpler, Superior, Greener Printing

TORAY WATERLESS PLATES

Introducing the waterless printing plates from Toray. Providing innovative solutions while using fewer natural resources is the hallmark of Toray technologies. Toray waterless plates can set you apart from your competitors.

http://www.toraywaterless.com/
**What is Waterless Printing?**

An Inherently Simpler, Superior, Greener Printing

Conventional "wet" offset printing requires two ink and water balance—ink and dampening solution to reproduce an image on press. However, managing two different fluids in the printing press is by default a more complex process, making the press operator's job much more difficult.

Waterless printing is an alternative printing system that runs on standard offset presses. The key to waterless printing is a plate that uses an ink-resistant silicone coating to eliminate the need for dampening solution.

**Environmental Benefits**

There are four key environmental benefits of waterless printing:

- Water sustainability—an increasingly pressing need everywhere
- No tainted water discharge—no fountain solution, no waste water management
- Reduced solution and chemical in plate processing—minimized VOCs
- Sound ecology beyond FSC, ISO or wind power

**Conventional "Wet" Printing**

Dampening solution (shown in blue, below left) is used to repel ink (in magenta). As the result, tainted water is discharged from the press.

**Waterless Printing**

Silicon polymer (in green) is used to repel ink. The mixture of water, alcohol or alcohol substitute and etching fluid are not required in the printing process.

**60-80% of VOC Reduction**

By eliminating the dampening solution from the printing process, the waterless printing system provides improvements in productivity, quality, and an environmentally-friendlier operation.

*Source: Bureau of Environment, Tokyo*

http://www.toraywaterless.com/
What is Waterless Printing?

An Inherently Simpler, Superior, Greener Printing

Conventional “wet” offset printing requires two ink and water balances—ink and dampening solution to reproduce an image on press. However managing two different fluids in the printing press is by default a more complex process, making the press operator’s job much more difficult.

Waterless printing is an alternative printing system that runs on standard offset presses. The key to waterless printing is a plate that uses an ink-resistant silicone coating to eliminate the need for dampening solution.

By eliminating the dampening solution from the printing process, the waterless printing system provides improvements in productivity, quality, and an environmentally-friendlier operation.

Environmental Benefits

There are four key environmental benefits of waterless printing:

- Water sustainability—an increasingly pressing need everywhere
- No tainted water discharge—no fountain solution, no waste water management
- Reduced solution and chemical in plate processing—minimized VOCs
- Sound ecology beyond FSC, ISO or wind power

Pre-press

<table>
<thead>
<tr>
<th>Conventional</th>
<th>Waterless</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developing Solution</td>
<td></td>
</tr>
<tr>
<td>Waste Liquid</td>
<td></td>
</tr>
</tbody>
</table>

Press

<table>
<thead>
<tr>
<th>Conventional</th>
<th>Waterless</th>
</tr>
</thead>
<tbody>
<tr>
<td>Etching Liquid &amp; IPA</td>
<td></td>
</tr>
<tr>
<td>Waste Liquid</td>
<td></td>
</tr>
</tbody>
</table>

60-80% of VOC Reduction

- Printing Units
- Dampering System
- Delivery
- Ventilator in Press room

*Source: Bureau of Environment, Tokyo

http://www.toraywaterless.com/
**Optimum Quality**

Toray waterless plates offer sharper dots, higher resolution and wider color space than conventional offset plates.

- Reduced dot gain
- Highest resolution, lenticular, and FM 20 stochastic screened work
- A wider color space with richer and bolder colors
- Uniform print and color quality
- Superior registration and ink holdout
- Elimination of fan out and paper stretch from fountain solution when printing lightweight stocks or perfecting

- Reduced dot gain
- Wider color space
- Consistent ink density

Adopting Toray waterless plates can result in significant improvement in productivity. Eliminating dampening solution from printing process allow cost reduction, faster setup, easier control and better consistency that result in uniform print and color quality.

- Cost reduction with no fountain solution, waste water and dampening rollers management
- Faster make-ready time with reduced waste
- Shorter time to achieve and maintain stability during start-up
- Better solid ink density yielding less color variations throughout the run
- Superior registration for reduced production time
- Easy adaptation with existing skill and workflow

**Increased Productivity**

Printed on the lightweight stock by perfecting machine.

**Cost Reduction in Press**

<table>
<thead>
<tr>
<th>Materials</th>
<th>Conventional</th>
<th>Waterless</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waste Paper</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Etching Liquid &amp; IPA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waste Liquid</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dampering Rollers</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Sourced by: Journal of Printing Science and Technology in Japan*

Toray waterless plates offer sharper dots, higher resolution and wider color space than conventional offset plates.

- Reduced dot gain
- Highest resolution, lenticular, and FM 20 stochastic screened work
- A wider color space with richer and bolder colors
- Uniform print and color quality
- Superior registration and ink holdout
- Elimination of fanout and paper stretch from fountain solution when printing lightweight stocks or perfecting

Optimum Quality

- Reduced Dot Gain
- Wider Color Space
- Consistent Ink Density

Increased Productivity

Adopting Toray waterless plates can result in significant improvement in productivity. Eliminating dampening solution from printing process allows cost reduction, faster setup, easier control and better consistency that result in uniform print and color quality.

- Cost reduction with no fountain solution, waste water and dampening rollers management
- Faster make-ready time with reduced waste
- Shorter time to achieve and maintain stability during start-up
- Better solid ink density yielding less color variations throughout the run
- Superior registration for reduced production time
- Easy adaptation with existing skill set and workflow

Cost Reduction in Press

<table>
<thead>
<tr>
<th>Materials</th>
<th>Conventional</th>
<th>Waterless</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waste Paper</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Etching Liquid &amp; IPA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waste Liquid</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Paper Waste

<table>
<thead>
<tr>
<th>Materials</th>
<th>Conventional</th>
<th>Waterless</th>
</tr>
</thead>
</table>

Make-ready Time

*Source by: Journal of Printing Science and Technology in Japan*

http://www.toraywaterless.com/
Guide to Toray Products

Toray Waterless CTP Plates

Toray waterless plates are negative working, non-ablative, thermal plates that utilize traditional printing presses equipped with in-press temperature control systems to effectively print on paper, plastics and other substrates without dampening solutions. Toray waterless plates will produce high-resolution images with 830 nm thermal CTP devices from all major manufacturers enabling printers to reach new heights in quality.

TAC – VGS

<table>
<thead>
<tr>
<th>Type</th>
<th>Standard CTP waterless plate for sheetfed, web printing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resolution</td>
<td>300 lpi*</td>
</tr>
<tr>
<td>PM Screening</td>
<td>20 micron**</td>
</tr>
<tr>
<td>Sensitivity</td>
<td>125-150 mJ/cm²</td>
</tr>
<tr>
<td>Exposure</td>
<td>830 nm Thermal CTP; Non ablative, negative working</td>
</tr>
<tr>
<td>Run length</td>
<td>125,000*</td>
</tr>
<tr>
<td>Inks</td>
<td>Compatible with oil based &amp; UV based inks without baking</td>
</tr>
<tr>
<td>Thickness</td>
<td>0.15mm, 0.24 mm &amp; 0.30mm (.006&quot;, .009&quot; &amp; .012&quot;)</td>
</tr>
<tr>
<td>Handling</td>
<td>Room Light</td>
</tr>
<tr>
<td>Processors</td>
<td>Toray TWL Waterless processors and comparable waterless processors from other manufacturers</td>
</tr>
</tbody>
</table>

For other type of plates, please contact us.

Processors

Toray and Toray approved automatic plate processors with low-maintenance design use up to 80% less chemicals and wash water than traditional “wet” lithographic plate processors. Since chemicals such as high alkaline developers, acidic finishers and replenishing solutions are not needed, Toray waterless system will help reduce your pre-press cost and inventory low.

Toray Waterless plate automatic developing machine series

<table>
<thead>
<tr>
<th>Series</th>
<th>TWL1160F2</th>
<th>TWL650F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plate size Max width</td>
<td>1160 mm</td>
<td>620 mm</td>
</tr>
<tr>
<td>Min length</td>
<td>350 mm</td>
<td>300 mm</td>
</tr>
<tr>
<td>Plate thickness</td>
<td>0.15 – 0.3mm (.006&quot; – .012&quot;)</td>
<td></td>
</tr>
<tr>
<td>External dimensions Width</td>
<td>1650 mm</td>
<td>1090 mm</td>
</tr>
<tr>
<td>Depth</td>
<td>2550 mm</td>
<td>2000 mm</td>
</tr>
<tr>
<td>Height</td>
<td>1030 mm</td>
<td>930 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>910 kg</td>
<td>350 kg</td>
</tr>
</tbody>
</table>
An Inherently Simpler, Superior, Greener Printing

TORAY WATERLESS PLATES

Introducing the waterless printing plates from Toray. Providing innovative solutions while using fewer natural resources is the hallmark of Toray technologies. Toray waterless plates can set you apart from your competitors.

http://www.toraywaterless.com/