Comprehensive graphics printing portfolio (GSB)

Providing innovative printing applications through strong intellectual property

Divisions
- PageWide Web Press
- Indigo
- Scitex
- Latex
- LF Design
- SPS

Products
- PageWide
- Liquid Electro Photography (LEP)
- Piezo (PJ)
- Thermal Inkjet (TIJ)
- Thermal Inkjet (TIJ) & PageWide
- Thermal Inkjet (TIJ)

Proprietary printing technologies
- PageWide Web Press
- Liquid Electro Photography (LEP)
- Piezo (PJ)
- Thermal Inkjet (TIJ)
- Thermal Inkjet (TIJ) & PageWide
- Thermal Inkjet (TIJ)

Applications
- Technical design
- Technical production
- Signage
- Decoration
- Photos
- Packaging
- Direct mail
- Info prints
- Marketing collateral
- Publishing

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CORRUGATED PACKAGING PORTFOLIO

**Pre-printing**
- HP PageWide T1100 Press series
- HP PageWide T400S Press

**Post-printing**
- HP PageWide C500 Press
- HP Scitex 17000 / 15500 Corrugated Press
Inkjet technology and design parameters

Technological requirements and design/development parameters

**Thermal inkjet technology**

- 1,200 nozzles per printhead (high volume, PWA), each nozzle ~1/3rd the width of a human hair
- Each nozzle fires 36,000 drops per second (one drop each 2 millionths of a second)
- Firing chamber heats to ~650° F with each drop cycle
- Technology itself is not tolerant of contaminants

**Design parameters**

- Design for Environment (DfE) criteria in place to guide HP-developed inks
- Extensive assessment of ink ingredients to ensure
  - Safety for the user
  - Safety for the environment
  - Compliance with all relevant regulations WW
- Additionally, for “vertical markets”
  - Vertica markets include: Food contact materials, textiles, medical devices, orthodontia, etc.
  - Extensive IAS and NIAS assessments
    - IAS: Intentionally Added Substances
    - NIAS: Not Intentionally Added Substances
  - Statements of Compliance for defined use cases
- Also have General Specifications for the Environment (GSE) criteria in place for all materials supplied to HP
- Both DfE and GSE take end-use customer needs into account (major brands, NGO’s, etc.)

[https://www.youtube.com/watch?v=xPV3ZWHTzmo](https://www.youtube.com/watch?v=xPV3ZWHTzmo)
### HP’s GSE criteria

**General Specifications for the Environment – requirements for all materials used in HP products**

<table>
<thead>
<tr>
<th>Type</th>
<th>GSE Identification Number</th>
<th>GSE Restriction in HP Inks, Coatings, Priming Agents, Maintenance Fluids, and Non-Ink Formulations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dioxins treated as PCBs</td>
<td>980408-79</td>
<td>Not intentionally added, &lt; 0.1ppm if incidentally present</td>
</tr>
<tr>
<td>PCBs</td>
<td>980408-79</td>
<td>Not intentionally added, &lt; 0.1ppm if incidentally present</td>
</tr>
<tr>
<td>PAHs</td>
<td>130604-79</td>
<td>Contribution of &lt; 0.5 ppm of any of the eight listed PAHs in the final formulation</td>
</tr>
<tr>
<td>Carcinogens</td>
<td>180625-31</td>
<td>Not intentionally added</td>
</tr>
<tr>
<td>Flame retardant, polybrominated biphenyls (PBBs)</td>
<td>980408-10</td>
<td>Not intentionally added and 1000 ppm</td>
</tr>
<tr>
<td>Restricted azo colorants that form aromatic amines</td>
<td>180625-10</td>
<td>Restricted Azo Colorants are Not Used</td>
</tr>
</tbody>
</table>
THANK YOU