Abstract: A fountain solution for offset lithographic printing ink includes water, one or more surfactants, and a dynamic surface tension of less than 30 dynes/cm. The fountain solution can further include an interfacial tension between the fountain solution and the offset lithographic printing ink of less than 10 dynes/cm. The press waste of a print run applying the fountain solution is reduced to less than 5%. An offset lithographic printing system includes a fountain solution and an offset lithographic printing ink, and the press waste of the offset lithographic printing system is less than 5%.
INTERNATIONAL SEARCH REPORT  

A. CLASSIFICATION OF SUBJECT MATTER 
INV. B41N3/08  
ADD.  

According to International Patent Classification (IPC) or to both national classification and IPC 

B. FIELDS SEARCHED 

Minimum documentation searched (classification system followed by classification symbols) 

B41N 

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched 

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) 

EPO-Internal , WPI Data 

C. DOCUMENTS CONSIDERED TO BE RELEVANT 

<table>
<thead>
<tr>
<th>Category</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
</tr>
</thead>
</table>

Further documents are listed in the continuation of Box C.  

Date of the actual completion of the international search  
12 July 2012 

Date of mailing of the international search report  
07/11/2012 

Name and mailing address of the ISA/ 
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Fax: (+31-70) 340-3016 

Authorized officer  
Pulver, Michael
### INTERNATIONAL SEARCH REPORT

**Box No. II  Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)**

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. **☐** Claims Nos.: because they relate to subject matter not required to be searched by this Authority, namely:

2. **☐** Claims Nos.: because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. **☐** Claims Nos.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

**Box No. III  Observations where unity of invention is lacking (Continuation of item 3 of first sheet)**

This International Searching Authority found multiple inventions in this international application, as follows:

*see additional sheet*

1. **☐** As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. **☐** As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.

3. **☐** As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. **☑** No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

   1-14, 62-74(completely); 58, 59(partly)

**Remark on Protest**

- [ ] The additional search fees were accompanied by the applicant’s protest and, where applicable, the payment of a protest fee.

- [ ] The additional search fees were accompanied by the applicant’s protest but the applicable protest fee was not paid within the time limit specified in the invitation.

- [ ] No protest accompanied the payment of additional search fees.
This International Search Authority found multiple (groups of) inventions in this International application, as follows:

1. claims: 1-14, 62-74 (completely); 58, 59 (partially)

A fountain n soluti on for an offset lithographi c pri ntng ink comprisi ng a dynamic surface tensi on of less than 30 dynes/cm. And an offset lithographi c pri ntng system comprisi ng thi s fountain n soluti on. And a fountain n etch for an offset lithographi c pri ntng ink comprisi ng a dynamic surface tensi on of less than 30 dynes/cm.

The special techni cal feature solves the objecti ve techni cal probl em of provi di ng a fountain n soluti on (or etch) comprisi ng a specifi c dynamic surface tensi on, thus allowing i.a. improvng feed through the dampenng system.

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2. claims: 15-25 (completely); 58, 59 (partially)

A fountain n soluti on for an offset lithographi c pri ntng ink wherei n the sum of two times the dynamic surface tensi on of the fountain n soluti on and the interfaci al tensi on between the fountain n soluti on and the offset lithographi c pri ntng ink is less than 64 dynes/cm. And an offset lithographi c pri ntng system comprisi ng thi s fountain n soluti on.

The special techni cal feature solves the objecti ve techni cal probl em of provi di ng a fountain n soluti on comprisi ng a specifi c combi nati on of the dynamic surface tensi on of the fountain n soluti on and the interfaci al tensi on between the fountain n soluti on and the offset lithographi c pri ntng ink, thus allowing i.a. improvng emulsi fi cati on.

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3. claims: 26-36 (completely); 58, 59 (partially)

A fountain n soluti on for an offset lithographi c pri ntng ink wherei n the sum of two times the dynamic surface tensi on of the fountain n soluti on and the interfaci al tensi on between the fountain n soluti on and the offset lithographi c pri ntng ink is less than 78 dynes/cm. And an offset lithographi c pri ntng system comprisi ng thi s fountain n soluti on.

The special techni cal feature solves the objecti ve techni cal probl em of provi di ng a fountain n soluti on comprisi ng a specifi c combi nati on of the dynamic surface tensi on of the fountain n soluti on and the interfaci al tensi on between the fountain n soluti on and the offset lithographi c pri ntng ink, thus allowing i.a. improvng emulsi fi cati on.

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4. claims: 37-47, 60, 61

A fountain n di spersi on for an offset lithographi c pri ntng ink comprisi ng a turbidi ty of greater than 20 NTUs. And an offset lithographi c pri ntng system comprisi ng thi s fountain n di spersi on.
The special technical feature solves the objective technical problem of providing a fountain solution with a specific viscosity, which is above a required minimum.

5. Claims: 48-57

A method of offset lithographic printing comprising reducing the press waste of the offset lithographic print by less than 5% by applying the fountain solution.

The special technical feature solves the objective technical problem of providing a method of offset lithographic printing which method reduces press printing waste. This reduction in waste provides i.a. improved environmental impact.

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<table>
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<th>Patent document cited in search report</th>
<th>Publication date</th>
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<tr>
<td>JP 2010221667 A</td>
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