<table>
<thead>
<tr>
<th>項目</th>
<th>内容</th>
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<tr>
<td>Title</td>
<td>On the Low Formalization of Polyvinyl Alcohol Fiber</td>
</tr>
<tr>
<td>Author(s)</td>
<td>Sakurada, Ichiro; Nakamura, Naofumi</td>
</tr>
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<td>Citation</td>
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Table 1. Determination of carboxylic groups under various condition.

<table>
<thead>
<tr>
<th>No.</th>
<th>Substance and pretreatment</th>
<th>mg. M.B./Subst.</th>
<th>Mol. vinylgroup. /mol. COOH</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>P. V. A. fiber.</td>
<td>3.02</td>
<td>2420</td>
</tr>
<tr>
<td>2.</td>
<td>No. 1. after the heat-treatment.</td>
<td>1.099</td>
<td>6600</td>
</tr>
<tr>
<td>3.</td>
<td>No. 2. after formalization (Vinylon)</td>
<td>0.250</td>
<td>27500</td>
</tr>
<tr>
<td>4.</td>
<td>After immersion of No. 2 in water (40°C, 24 hrs.)</td>
<td>1.129</td>
<td>5650</td>
</tr>
<tr>
<td>5.</td>
<td>After immersion of No. 3 in water (45°C, 17 hrs.)</td>
<td>0.472</td>
<td>14600</td>
</tr>
<tr>
<td>6.</td>
<td>After immersion of No. 3 in boiling water (1 min.)</td>
<td>0.624</td>
<td>11200</td>
</tr>
<tr>
<td>7.</td>
<td>(5 min.)</td>
<td>0.695</td>
<td>10000</td>
</tr>
<tr>
<td>8.</td>
<td>(10 min.)</td>
<td>0.777</td>
<td>8990</td>
</tr>
<tr>
<td>9.</td>
<td>(30 min.)</td>
<td>1.028</td>
<td>6690</td>
</tr>
<tr>
<td>10.</td>
<td>(60 min.)</td>
<td>2.38</td>
<td>2940</td>
</tr>
<tr>
<td>11.</td>
<td>(120 min.)</td>
<td>3.01</td>
<td>3010</td>
</tr>
</tbody>
</table>

Table 2. Determination of carboxylic groups after bleaching.
(The original sample is No. 3 of table 1.)

<table>
<thead>
<tr>
<th>Bleaching agent</th>
<th>Condition of bleaching</th>
<th>mg. M.B./g. Subt.</th>
<th>Mol. vinylgroup. /Mol. COOH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bleaching-powder</td>
<td>Cl₂ 1g/L, N/1oH₂SO₄, 10c, 17 hrs.</td>
<td>0.851</td>
<td>8100</td>
</tr>
<tr>
<td></td>
<td>Cl₂ 1g/L, CH₃COOH, 1g./L 17 hrs.</td>
<td>1.73</td>
<td>3960</td>
</tr>
<tr>
<td></td>
<td>Cl₂, 3.4g/L, CH₃COOH, 1g./L, 17 hrs.</td>
<td>0.903</td>
<td>8580</td>
</tr>
<tr>
<td></td>
<td>Cl₂, 5g/L, CH₃COOH, 1g./L, 17 hrs.</td>
<td>9.12</td>
<td>760</td>
</tr>
<tr>
<td>H₂O₂</td>
<td>g./L, 45°C, 17 hrs, PH=8.0</td>
<td>0.460</td>
<td>15000</td>
</tr>
<tr>
<td></td>
<td>50g./L, 45°C 17 hrs, PH=8.0</td>
<td>1.345</td>
<td>5090</td>
</tr>
<tr>
<td>K-permangan.</td>
<td>2g./L, 10°C, afterwards immersed in oxalic acid, washed with water, dried.</td>
<td>0.510</td>
<td>13690</td>
</tr>
<tr>
<td>Sodiumchlorite.</td>
<td>5g./L, 45°C, 17 hrs, without CH₂OOH.</td>
<td>0.530</td>
<td>13040</td>
</tr>
<tr>
<td></td>
<td>1g./L, 45°C, 17 hrs, CHCOOH 1g./L.</td>
<td>0.952</td>
<td>7240</td>
</tr>
<tr>
<td></td>
<td>5g./L, 10°C, 17 hrs, without CH₂COOH</td>
<td>0.576</td>
<td>11960</td>
</tr>
<tr>
<td></td>
<td>5g./L, 10°C, 17 hrs, CH₂COOH 1g./L.</td>
<td>0.438</td>
<td>15820</td>
</tr>
<tr>
<td>Sodium hydrosulphite.</td>
<td>5g./L, 45°C, 17 hrs.</td>
<td>0.741</td>
<td>9300</td>
</tr>
<tr>
<td></td>
<td>50g./L, 45°C, 17 hrs.</td>
<td>0.973</td>
<td>7070</td>
</tr>
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</table>

39. On the Low Formalization of Polyvinyl Alcohol Fiber

Ichiro Sakurada and Naofumi Nakamura

(Sakurada Laboratory)

By the manufacture of synthetic fiber Vinylon, polyvinyl alcohol fiber, which has been subjected to heat treatment, is formalized ordinary with a bath of the following composition: H₂SO₄ 250g/L, Na₂SO₄ 300g/L, HCHO 60g/L.

For the purpose of utilization of the wash liquor, formalization of the fiber with this wash liquor have been undertaken. The liquor have the following composition: H₂SO₄ 80~150 g/L, Na₂SO₄ 100g/L, HCHO 10~2 g/L. It have been found that polyvinyl alcohol fibers can be easily formalized with this dilute bath and formaldehyde is almost exhausted. This process may have a practical application.