Liquor Oxidation Process

A nominal 50-70 gallon per minute White/Green Liquor oxidizer process mounted on a 28’ x 9’ skid, fully automated and available for our purchase or plant trial. The unit requires electricity, oxygen, liquor feed, take-away piping and depending upon the application, cooling or heating water. The oxidizer is available for rent, purchase or our Rent-to-Buy program.

Quantum Technologies Inc.

White/Green Liquor Oxidation Process

Quantum Technologies’ Liquor Oxidizer reactor is available in 28”, 36”, 48” diameter and can be engineered and designed to the customer’s specifications.
Specifications
Quantum’s Oxidation process is designed to be adaptable to the existing mills controls making it possible for manual and full automation. The entire process comes on a 16’x14’x10’ skid that is designed to be mounted on a foundation. Final installation requires electricity, oxygen, feed and takeaway piping to the battery limits, and process control installation.

Typical Analysis
Oxidized white liquor used in the following laboratory work was produced in Quantum’s Oxidizer pilot plant using mill white liquor direct from the clarifier.

Concentrations (g/L as Na₂O)

<table>
<thead>
<tr>
<th></th>
<th>NaOH</th>
<th>Na₂S</th>
<th>Na₂S₂O₃</th>
<th>Na₂SO₃</th>
<th>Na₂SO₄</th>
</tr>
</thead>
<tbody>
<tr>
<td>WL</td>
<td>58.9</td>
<td>30.8</td>
<td>1.61</td>
<td>1.50</td>
<td>3.54</td>
</tr>
<tr>
<td>Q-OWL</td>
<td>62.0</td>
<td>0</td>
<td>2.81</td>
<td>1.70</td>
<td>30.5</td>
</tr>
</tbody>
</table>

Note: The Oxidizer increase in NaOH is a result of the oxidation reaction.

Uses for the Oxidizer in the Pulp Mill
The Liquor Oxidation process can be used in the following applications at the mills: 1) Substitute caustic with oxidized white/green liquor in bleach plant. 2) Allows for substitution of sulfite in semichem mills. 3) Allows for substitution of caustic in thermo-mechanical mill. 4) Caustic source for O₂ Delignification by substituting caustic with oxidized white/green liquor for balance of sodium in the mill. 5) Improves performance of the recovery boiler through purging of chlorides in the mill.