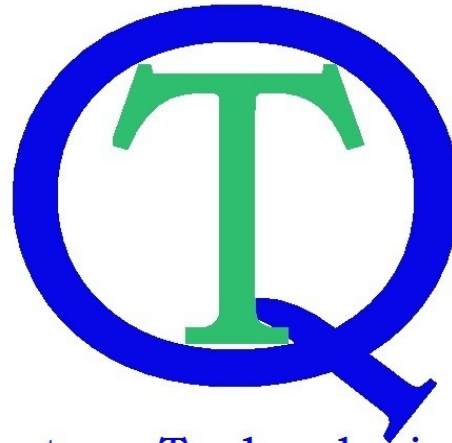


## Liquor Oxidation Process

*A nominal 50-70 gallon per minute White/Green Liquor oxidizer process mounted on a 28' x 9' skid, fully automated and available for your 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's Oxidizer can save on pulp production costs.**



## Quantum Technologies Inc Advantages of Using White/Green Liquor Oxidation Process

Quantum Technologies Inc.

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Akron, Ohio 44312

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*Innovators in the Pulp  
and Paper Industry*

## 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.**

Quantum Technologies Inc.

**Tel: 330-645-2762**

## Why Use Quantum's **Green & White** Liquor Oxidizer



**White & Green Liquor Oxidizer Unit**

### **Advantages of Using Fully or Partially Oxidized Liquor**

**Total savings \$1-5mil/year**

#### **Allows for substitution of caustic in the bleach plant**

1. Savings from use of soda ash replacing caustic (useful during high caustic prices)
2. Increase brightness and strength.
3. Allows for purging of chloride ions out of system without a chloride purge system:
  - Can reduce fouling in recovery boiler
  - Reduce corrosion rate within recovery boiler
  - Reduce dead-load
4. Allows for use of diaphragm vs. membrane caustic.
5. Inventory control of black liquor, white liquor and green liquor
6. Reduce load in recausticizing area by the use of green liquor.

#### **Allows for substitution of caustic with oxidized green liquor in semi-chem for sodium sulfite replacement**

1. Combination of thio generator and fully oxidized green/white liquor will maximize the caustic value of the fully oxidized liquor
2. Chemical savings in kraft and semi-chem. through no sewerage, required for sulfur balance
3. Safer odorless liquor with complete  $\text{Na}_2\text{S}$  reduction

#### **Replace caustic source for $\text{O}_2$ Delignification**

1. Replace NaOH with fully oxidized white or green liquor:
  - Lower Kappa numbers
  - Maintain mill sodium and sulfur balance
2. Operating cost savings through  $\text{O}_2$  efficiency and heat recovery



The 28" reactor and the degasser ready for shipment.

#### **Overall advantages of Quantum White/Green Liquor Oxidation Process**

1. Lower bleaching cost through lower Kappa numbers — .5-1 lower
2. Increase  $\text{O}_2$  Utilization
3. Less pollution
4. Heat recovery with useful hot water
5. Good turn-down ratio
6. Good on-stream time
7. Fully automated
8. Small footprint 20'x14'x10'

Quantum Technologies has made available a plant trial unit whereby the monetary savings and improvement in quality of pulp can be confirmed.



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