



## Menardi's Place in the Pulp Mill

Menardi manufactures essential filtration products utilized in Kraft pulp mills, which constitute over 70% of the U.S. pulp mills. The remaining share includes Sulfite and Ground-wood mills. The Kraft process, developed in Germany during the 1870s, had its first domestic plant opened in Roanoke Rapids, NC, in 1930. This method involves cooking wood chips under pressure in a caustic chemical mixture known as white liquor, which is recycled due to the high cost and toxicity of the chemicals used.



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## The sodium-based chemical compounds from the spent white liquor (black liquor) are regenerated through a series of processes:

- **Black Liquor Collection:** Used cooking chemicals (black liquor) are obtained from the pulp mill digesters and washers.
- **Concentration:** The chemicals in the black liquor are concentrated through evaporation.
- **Incineration:** The concentrated black liquor is incinerated in a recovery boiler to capture sodium carbonate ( $\text{Na}_2\text{CO}_3$ ) and sodium sulfide ( $\text{Na}_2\text{S}$ ).
- **Green Liquor Production:** The smelt from the recovery boiler is mixed with weak wash to produce green liquor.
- **Recausticization:** Green liquor is converted to white liquor by slaking with lime, forming calcium hydroxide ( $\text{Ca}(\text{OH})_2$ ).
- **Lime Mud Recovery:** Calcium carbonate ( $\text{CaCO}_3$ ), or lime mud, is recovered for reuse in recausticization.

## Menardi products play a crucial role in the recausticization process:

- **Green Liquor Clarification:** Green liquor is pumped from the smelt-dissolving tank to the Green Liquor Clarifier, where inert solids (dregs) are removed. These dregs are dewatered using a Rotary Vacuum Drum Filter and are then ready for disposal. Menardi manufactures the filter cloths used in Green Liquor Clarifiers and Dregs Filters.
- **White Liquor Clarification:** Recausticized liquor goes to a White Liquor Clarifier or a White Liquor Pressure Filter, where lime mud settles or is filtered out. The recovered white liquor is then transferred to the digesters as sodium hydroxide ( $\text{NaOH}$ ) and sodium sulfide ( $\text{Na}_2\text{S}$ ).
- **Lime Mud Processing:** Lime mud is washed to recover any remaining sodium chemicals, dried, and then sent to the kiln for calcining, which is an energy-intensive process.

Menardi's monofilament polypropylene materials are expertly crafted into filter blankets (also known as 'face wires') designed specifically for Dregs Filters and Lime Mud Pre-coat Filters. Additionally, our White Liquor Pressure Filters and Lime Mud Pressure Filters employ candle filters made from durable polypropylene felt, often laminated with ePTFE for enhanced performance.

Menardi's cutting-edge filtration solutions ensure efficient and sustainable operations within the Kraft pulp mill process, addressing the industry's demand for high-performance and dependable filtration products. Inquire about our range of candle filters, vertical filters, and rotary drum filters to meet all your filtration needs.



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