

Black Liquor

DESCRIPTION

White liquor is a solution of caustic chemicals (such as sodium hydroxide) added to wood chips in the Kraft and sulfite pulping processes to dissolve the lignin, leaving cellulose fibers. The fibers are then washed, and the resulting slurry of water, caustic chemicals and dissolved lignin is called black liquor. Black liquor is recycled in a process that gives off heat energy, carbon dioxide, and recoverable chemicals. These chemicals need only a 10 percent supplement (by volume) of additional caustic chemicals to become white liquor again.

CLASSIFICATION

Lignocellulosic biomass

SOURCE INDUSTRY

Pulp mills. See the [Pulp & Paper industry roadmap](#).

ANNUAL VOLUME GENERATED IN WISCONSIN

Because black liquor is both created and consumed on-site, it is not readily available for use off-site.

CURRENT APPLICATIONS

Black liquor is typically recovered as part of the pulping process.

PRICE

The steam generated during the black liquor recovery process contributes significantly to the energy needs of pulp and paper mills. In addition, the recovered chemicals reduce the process's chemical needs by almost 90 percent.

APPLICABLE BIOREFINING PROCESSES

[Black liquor gasification](#)

REFERENCES

The Wisconsin Primary and Secondary Wood Using Industry Directories. University of Wisconsin-Madison. 2004. <http://www.forest.wisc.edu/directories.htm> (16 April 2004).