Technologies for Reducing Dioxin in the Manufacture of Bleached Wood Pulp

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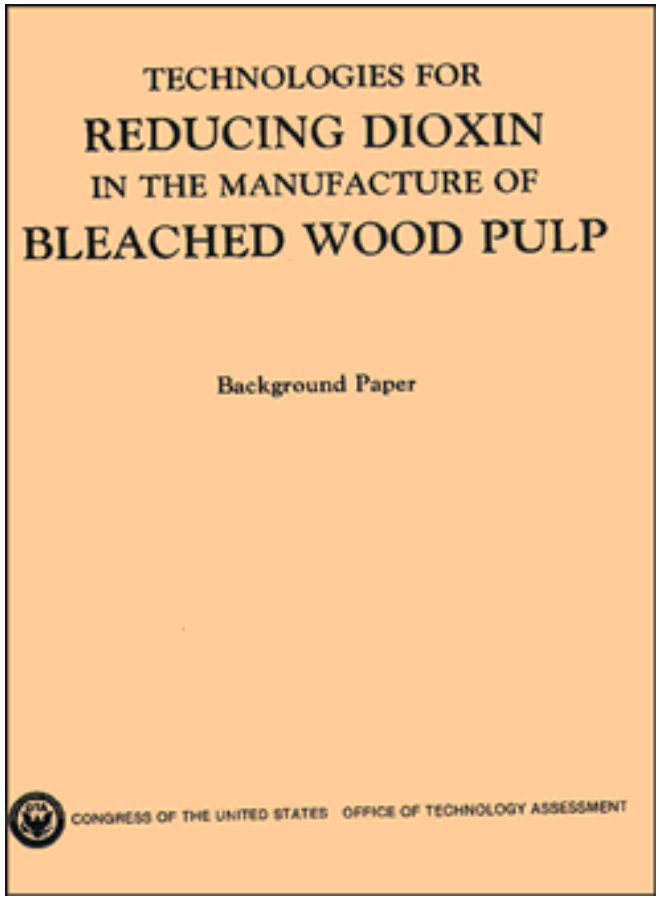

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Foreword

As analytical technology improves, we are discovering dioxins associated with many products commonly found in the home and workplace. Recently, dioxins have been detected in wastes resulting from the manufacture of wood pulp. Paper products made from wood pulp are used in tremendous volumes for food packaging, hygienic products, printing paper, writing paper, paperboard for shipping containers, and numerous other household items. Between 650 and 700 pounds of paper products are used annually by each American, with domestic and foreign consumption continuing to rise at a steady rate.

Most of the paper used in the United States is white paper made from bleached wood pulp. Chlorine is commonly used as a bleach. It has been found that bleaching can result in the formation of dioxin in the pulp when chlorine reacts with organic constituents of wood. Although preliminary surveys have detected dioxin in pulp mill wastes, the scope of the problem is not yet known. Studies currently under way by the Environmental Protection Agency, the Food and Drug Administration, the Consumer Products Safety Commission, the National Institute for Occupational Safety and Health, and the U.S. paper industry will shed light on this when completed later in 1989.

Alternative technologies using oxygen as a pretreatment to chlorine bleaching and improved delignification that removes more of the potential reactants from the wood can reduce the amount of dioxin in bleached pulp. Substituting other bleaching chemicals for chlorine also shows promise for reducing the amount of dioxin produced in the bleaching process should regulation be required. This study provides an assessment of these technologies; it does not address the policy issues related to regulating dioxin in paper products and controlling environmental release.

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