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STATE AGENCIES: REQUIRE CHLORINE-FREE PAPER PRODUCTS

House Bill 4511 with committee amendments First Analysis (5-6-97)

Sponsor: Rep. Liz Brater
Committee: Consumer Protection

THE APPARENT PROBLEM:

In recent years, many people have become concerned about the risks associated with the use of chlorine as a bleaching agent during the paper manufacturing process. One of the main concerns has been that use of chlorine has the potential to create a host of chlorinated organics (organochlorines) including dioxins and other harmful compounds as by-products that then could be released into the environment as either effluent or sludge. The most notable of the organochlorines is dioxin, a highly toxic compound that is a persistent bioaccumulative toxin. This means that it can be stored in the fatty tissue of organisms by ingestion, and that extremely small doses can be concentrated as they pass up the food chain with those at the highest level of the food chain receiving the most concentrated doses. Many of the other organochlorines are also persistent bioaccumulative toxins, but they are not as widely known as the dioxins.

In the production of paper products chlorine has been used for two separate purposes. First, chlorine has been used to remove lignin (a substance in wood that holds cellulose fibers together and makes paper products yellow more quickly) from wood pulp. Chlorine dissolves lignin and allows it to be, in essence, washed out of the wood pulp. Secondly, chlorine has been used as a bleaching agent to make the paper white or more white.

In response to these concerns about chlorine, since the 1970s most of the paper manufacturing industry has voluntarily stopped using it for lignin removal and bleaching in paper production. Now, the majority of paper producers do not use chlorine, but instead use what is known as elemental chlorine-free technology (ECF). This involves the use of chlorine dioxide, sodium hypochloride, or some other chlorinated chemical rather than using the actual element chlorine.

While there is no disagreement that this change has drastically reduced the amounts of dioxins that can be detected in the effluent from the paper mills using ECF technology, there is some disagreement about whether this decrease is "enough". Those who feel it isn't enough suggest that given the risks associated with some

of the organochlorines (particularly dioxin) the only truly safe way to produce paper is for its production to be totally chlorine-free (TCF). They argue that since dioxins and other harmful organochlorines must have the element chlorine in order to form and since the use of any chlorinated chemicals in the process increases the availability of the chlorine molecules needed to produce organochlorines, then a process that doesn't add more chlorine in any form must be safer than one that does. Because of this concern and in an effort to encourage paper producers to invest in totally chlorine-free (TCF) technology by creating a market for TCF paper products, legislation has been introduced to require the state to include a percentage of chlorine-free paper products in its yearly purchases of paper products.

THE CONTENT OF THE BILL:

House Bill 4511 would add a section to the Management and Budget Act requiring the Department of Management and Budget to purchase amounts of chlorine-free paper as a percentage of all paper and paper products purchased by the department for use by state agencies. Specifically, the bill would require that beginning January 1, 1998, at least 10 percent of all of the paper products purchased by the department, by weight or volume, be made from chlorine-free paper to the extent practicable and provided that the cost did not exceed 110 percent of the cost of paper products that do not contain chlorine-free paper. The bill would also require the percentage of chlorine-free paper purchased to be increased by five percent each year after 1998 until the percentage reached 50 percent.

If the department were unable to comply with the requirements for purchasing chlorine-free paper, it could purchase a substitute paper product that fulfilled the requirements, if one were available, with the assistance of the state agency that used the paper. If a state agency informed the department that it was unable to use a chlorine-free paper product or that a substitute was not available, the agency would be required to make a written request justifying an exemption from the bill's requirements. The department would have to grant

the agency an exemption if it found that the agency had made all reasonable efforts to comply with the bill and, if applicable, had attempted to use a substitute product.

The bill would also require the department to submit an annual report to the governor and the legislature on the quantities and types of chlorine-free paper products purchased by the department. In addition, if the department were unable to comply, it would have to make an annual report to the legislature and any affected state agency indicating the efforts that had been made to comply and the reasons it had been unable to comply.

"Chlorine-free paper" would include virgin or recycled paper that had been bleached without the use of any chlorinated chemicals or had not been lightened by any chemical means. Recycled paper that was chlorine-free but had been made from paper that was not chlorine-free would still be chlorine-free paper for purposes of the act. Paper products would mean computer paper, paper towels, toilet paper, paper for use in copying machines, paper used for printing (other than newsprint), paper used in notepads and message pads, and other paper commonly used in offices. "Practicable" would refer to both availability and meeting reasonable use specifications. The bill would also state that its provisions are meant to be taken in addition to the requirements for the department to purchase supplies for state agencies and requiring that a certain percentage of these supplies be made from recycled materials.

MCL 18.261c

FISCAL IMPLICATIONS:

Fiscal information is not available.

ARGUMENTS:

For:

The state of Michigan uses large amounts of paper products each year. According to the Department of Management and Budget, the state purchased about \$2.6 million worth of paper and paper products during the 1996 calendar year. The bill would parallel the current state law enacted in 1988 (MCL 18.261a and 261b), that promotes the use of recycled materials by requiring that a percentage of the state's yearly paper supply purchases be made up of recycled products. That law stemmed from concerns about the environmental problems posed by rapidly filling landfills; this bill stems from the threat posed by dioxins and other organochlorines released as a result of the use of chlorine and elementally chlorine-free technology for bleaching paper products.

When wood pulp or recycled paper are bleached with chlorine the process unintentionally produces some of the most toxic substances ever created. The worst of these by-products is a family of 75 different chemicals known as dioxins. Dioxins have been linked to cancer, reproductive disorders, deformities and developmental problems in children, and immune system breakdowns. Dioxins can cause these problems at doses thousands of times lower than most hazardous chemicals.

Dioxins and many of the other organochlorines are persistent bioaccumulative chemicals that do not readily break down in the environment and instead tend to accumulate in the air, water and soil and in turn in plants and animals, and, again in turn, in humans. Since it is unfeasible to conduct research to expose people to different levels of dioxins in order to determine what levels of dioxins are harmful or deadly, the safest choice is to attempt to eliminate their creation. This includes halting the use of chlorine and elemental chlorine-free bleaching in paper production because the logical result of removing chlorine and chlorine-based chemicals from the paper production process is the minimalization of the creation of dioxins and other harmful organochlorines.

Response:

The paper industry has already dramatically reduced, to the point of virtual elimination, the levels of dioxin created by investing in ECF technology. Thus, forcing the use of more expensive TCF technology is unnecessary in order to protect people from dioxins and disparages a bleaching process that is less costly and has not been proven to be less safe. Furthermore, since chlorine can be found in wood even the TCF methods of bleaching could produce organochlorines.

Rebuttal:

The creation of dioxins and other organochlorines needs chlorine; organochlorines cannot be created without chlorine, and the larger the amounts of chlorine available the more organochlorines are produced. As a result there is the possibility, if not the likelihood, that dioxins and other harmful organochlorines are created in the use of ECF technology even if those amounts are not currently measurable, and those small amounts can still bioaccumulate to harmful levels. Since the levels of chlorine found in wood (which is not natural, but stems from persistent use of chlorine) are small and, in TCF processes, are not increased by the addition of other chlorine, the TCF processes will create fewer organochlorines than ECF processes.

It should also be noted that the reduction in the amount of dioxins measured is in the effluent and doesn't consider the amounts that are created in the sludge produced through the use ECF technology. The sludge is often either incinerated or landfilled, and in either case it presents a significant risk for the creation of organochlorines.

Further, the bill only requires that the state purchase a certain percentage of TCF paper products, and does not require the entire industry to change. The bill merely is intended to promote the use of TCF technology by providing a market for TCF paper products.

Against:

The bill would attempt to promote the use of totally chlorine-free bleaching technology over the use of elemental chlorine-free bleaching technology without fully taking into account all of the relevant science or the economic, environmental, and social impacts of making such a switch, and would push the paper industry to make costly and unnecessary investments to change to TCF technology in spite of the complete lack of any proven environmental benefit. Currently, chlorine-based bleaching technology is used by almost all of Michigan's pulp and paper companies. The cost of converting the existing mills to TCF technology would (according to the Michigan Manufacturers Association) exceed \$100 million.

The paper industry has already voluntarily spent millions of dollars to put in place ECF technology, which has served to virtually eliminate the inadvertent creation of organochlorines and reduced the level of dioxins in mill effluents to below detectable levels. There is no scientific justification for creating a preference for TCF paper over ECF paper. At least the use of chlorine-based compounds has been thoroughly studied for decades, whereas the long-term environmental impacts of the proposed totally chlorine-free bleaching agents are not yet understood. In fact, two recent studies, one by the Finnish Environment Agency and the other by the International Institute for Environment and Development, concluded that there is no appreciable environmental difference between the use of ECF and TCF bleaching processes.

Response:

It would be nearly impossible for TCF processes to more environmentally harmful, since they do not use chlorine, which is necessary to create the extremely harmful organochlorines like dioxin. The chemicals used tend break down into less harmful substances; hydrogen peroxide, for example, breaks down into water and oxygen.

Against:

There is no good reason for the government to interfere with the market through the required purchase of a certain product. This sort of interference with market forces gives an unfair advantage to paper producers who use inherently more costly TCF production methods; these producers would otherwise be less able to compete against producers who used less costly methods like ECF. Without proven environmental or social harm, there is no good reason to prefer the use of TCF

bleaching over ECF bleaching processes. The bill merely gives an otherwise weaker product an unfair opportunity not only to sell its product, but to sell it at a cost of up to ten percent over the cost of ECF produced paper.

It should also be noted that in the United States, only one percent of the bleached pulp making capacity is totally chlorine-free and as a result fulfilling the requirements of the bill could be very difficult.

Against:

Those who oppose the bill argue that TCF processes present substantial disadvantages: capital and operational costs are higher, wood and energy consumption are higher, and the paper made by such processes is less able to be recycled.

Response:

Those who support the bill assert that TCF processes use less energy, and use no more wood than other methods; that although initial capital costs may be higher the operating costs are lower; and that the paper products are fully recyclable.

POSITIONS:

Michigan United Conservation Clubs supports the bill. (4-30-97)

The Michigan Environmental Council supports the bill. (4-30-97)

The Sierra Club, Michigan Chapter supports the bill. (4-30-97)

The Ecology Center of Ann Arbor supports the bill. (4-30-97)

Clean Water Action supports the bill. (5-1-97)

The Michigan Chemical Council opposes the bill. (4-30-97)

The Michigan Manufacturers Association opposes the bill. (5-1-97)

The Michigan Chamber of Commerce opposes the bill. (5-1-97)

Analyst: W. Flory

■ This analysis was prepared by nonpartisan House staff for use by House members in their deliberations, and does not constitute an official statement of legislative intent.