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TO: VI Executive Board
FROM: Dave Meeker 
DATE: July 7, 1994
COPIES: Bob Burnett
Nora Jacobs
SUBJECT: Michigan Environmental Science Board Report on Chlorine

Following is a copy of a news release reporting on results of the Michigan Environmental Science Board Study on Chlorine requested by Michigan Governor John Engler, and several pages excerpted from that report. This material is being sent to you at the request of Vinyl Institute Chairman William Patient.

In essence, this report takes issue with the recommendation of the International Joint Commission and suggests a much more scientific and common sense approach to the regulation of chlorine chemistry.

This report is significant because it says, "Scientific evidence indicates that all chlorine containing organic compounds do not have similar potential to produce deleterious effects in humans and in the environment...There is insufficient scientific evidence to indicate that the mere presence of non-persistent chlorinated compounds in the environment is producing an environmental or public health threat."

In the section addressing polyvinyl chloride, the report says, "Thus, loss of PVC would mean higher product costs and/or some sacrifice in performance, as well as a different set of potential environmental hazards."

We are working with the Chlorine Chemistry Council and the Michigan Department of Management and Budget, which coordinated the study, to ensure that the report gets the widest possible distribution.

Please call me if I can answer any questions or provide additional help.

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STATE OF MICHIGAN



JOHN ENGLER, Governor

DEPARTMENT OF MANAGEMENT & BUDGET

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PATRICIA A WOODWORTH, Director

FOR IMMEDIATE RELEASE
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**ENVIRONMENTAL SCIENCE BOARD RELEASES
REPORT ON CHLORINE**

The Michigan Environmental Science Board (MESB) submitted to Governor John Engler today its report on **"Impacts of Chlorine Use on Environmental and Public Health."** Governor Engler had directed the MESB last November to evaluate the scientific basis for the International Joint Commission's (IJC) 1992 recommendation to have chlorine and chlorine-containing compounds withdrawn from use (sunset) as feedstocks for industrial operations and to evaluate whether Michigan's body of regulations affecting the use of chlorine and chlorinated compounds adequately protect the health of Michigan's citizens, the state's environment and the Great Lakes.

The MESB was created by Executive Order in August 1992 to advise the Governor and state agencies on matters affecting the protection of the state's environment and management of its natural resources. The MESB consists of nine members and an executive director appointed by the Governor, who have expertise in engineering, ecological sciences, economics, chemistry, physics, biological sciences, human medicine,



statistics, risk assessment and geology. A Panel composed of six MESB members was selected by Dr. Lawrence J. Fischer, MESB chairperson and Director of the Institute for Environmental Toxicology at Michigan State University. The MESB Chlorine Panel was chaired by Dr. Fischer. According to Mr. Keith Harrison, MESB executive director, "the report represents a consensus scientific opinion of the members of the MESB Chlorine Panel with concurrence from the full MESB."

The 67-page report indicates that the IJC's 1992 and 1994 recommendations to sunset chlorine has generated considerable controversy which has been heightened further by the language used within the debate and the vagueness of the IJC position. In addition, an undefined timetable and an inability to know which chlorine-containing compounds would be involved in the proposed ban has provided fertile ground for the imaginations of proponents and antagonists.

The MESB Panel, whose investigation lasted over six months, evaluated available scientific literature, conferred with various experts and considered written and verbal testimony from industry, environmental organizations, and state governmental agencies to reach a series of conclusions responding to the Governor's two concerns about the IJC chlorine recommendations.

According to Dr. Fischer, "the presence of chlorine in a chemical compound does not predispose it to be a toxic substance destined to cause harm to humans or the environment." The report indicates that certain characteristics of chemicals appear to be problematic and these may or may not exist in a given chlorine-containing compound. These unwanted features are the ability of the substance to produce toxic effects at

relatively low levels of exposure and resistance to environmental degradation which permits accumulation in the food chain. Certain chlorinated compounds and some compounds not containing chlorine possess these characteristics and are of current concern. The Panel recognized the potential for harm posed by some environmentally persistent chlorinated compounds such as certain dioxins and PCBs. It was also apparent that current practices for monitoring and toxicity testing when applied to complex waste streams may not be sufficient to detect compounds having adverse characteristics similar to PCBs and dioxins. As a consequence, the Panel indicated that better procedures to detect unknown compounds having biological and chemical properties known to be problematic should be developed and implemented.

Considering the many factors relevant to the chlorine issue, the Panel supported the IJC recommendation to initiate discussions among industry, government and public interest groups to review chlorine use. The Panel suggested that such discussions address the risks and benefits of chlorine-containing compounds and take into consideration the safety and effectiveness of possible alternatives to the use of chlorinated substances. "The timetable for these discussions and the actions possibly resulting from them should be reflective of sound science, the current importance of chlorine to society and the lack of alternatives of known safety and effectiveness," Dr. Fischer said. A period of 30 years was suggested as reasonable by the Panel to prioritize, evaluate and replace known and suspected problematic chlorine-containing compounds with alternatives that have been scientifically shown to have less potential for harm.

The Panel accepted the concept that chemicals can be grouped according to their physical, chemical and biological characteristics for purposes of regulation. Thus, environmentally persistent compounds which are toxic in laboratory tests using low exposures could be considered problematic and should be controlled whether or not they contain chlorine. On the other hand, evidence is minimal that, as a group, non-persistent chlorine-containing compounds are causing adverse health impacts from environmental exposures. These chemical compounds may be addressed on an individual basis and if results from adequate toxicity testing procedures indicate a potential problem exists, action should be taken.

Additional Panel conclusions relating to the Governor's first charge include: (1) new chlorinated and non-chlorinated products and by-products of industrial processes should continue to be evaluated for their toxicity, persistence and bioconcentration potential prior to being released into commerce and the environment, (2) toxicity testing applied to the products, emissions and effluents from new industrial processes should be sufficiently sensitive to detect several types of toxicological effects, including subtle effects that might occur in wildlife, domestic animals and humans at concentrations known or reasonably estimated to occur in the environment, (3) previously installed industrial processes for which there is inadequate information regarding the identity and/or toxicity of the by-products released to the environment should be subjected to an improved toxicity testing protocols in order to provide data indicating the potential of released unknown by-products to produce harm to the environment and public health, and sufficient information to allow a risk/benefit evaluation to be made, and (4) the efficacy of the tests used to evaluate the

safety of non-chlorine-containing alternative products and by-products should be equivalent to tests required for chlorine-containing products and by-products.

Finally and based on a review of 28 federal and state regulations which directly or indirectly impact the use of chlorinated compounds, the Panel concluded that the current body of chlorine and chlorinated compound-related regulations operable in Michigan may be considered reasonably adequate to protect human health, the environment and the Great Lakes but should be: (a) periodically reviewed and upgraded in terms of requiring more appropriate monitoring and evaluation requirements consistent with new environmental and human health data regarding chlorinated compounds and their potential substitutes, (b) ensured of sufficient human and financial resources to allow for aggressive and effective enforcement and (c) supplemented with a monitoring program capable of establishing and tracking changing trends in contaminants impacting both the abiotic and biotic environments.

Copies of the report may be obtained by writing to the **Michigan Environmental Science Board, Lewis Cass Building, P.O. Box 30026, Lansing, Michigan 48909.**