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## Interoffice Communication

To Distribution  
From Tom Grumbles  
Date April 15, 1983  
Subject OSHA BENZENE REGULATORY ACTION

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Attached is an article summarizing recent scientific and OSHA activity regarding benzene. In summary, OSHA has announced that it plans to promulgate an ANPRM on benzene in May.

This action is based on new toxicological and risk assessment data that has been presented to the agency, and probably as a result of other outside pressures (i.e., we understand an undisclosed group has petitioned OSHA for an Emergency Temporary Standard). It appears OSHA has the data it needs to meet the Supreme Court Mandate for justification to lower the exposure limit.

The activity should be considered if the plants are looking at budgeting projects for benzene emissions controls in the next several years. I will keep you updated as we receive further information.

Thomas G. Grumbles

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Attachment

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## Benzene

### OSHA TO CONSIDER LOWERING BENZENE RULE TO PROTECT WORKERS FROM RISK OF LEUKEMIA

Proceedings to lower the current Occupational Safety and Health Administration standard for benzene to protect against the hazard of developing leukemia will begin in approximately one month when the agency issues an advance notice of proposed rulemaking, OSHA announced.

The decision to place the substance on the agency's regulatory agenda was made by Assistant Labor Secretary Thorne G. Auchter on March 30. OSHA spokesman Douglas Clark said in announcing the planned action. The agency will seek new data on the cancer risk of benzene "because there is likely to be information that indicates we should move to improve our standard," he said. The chemical is widely used in the petroleum and chemical industries in manufacturing, among other products, solvents, plastics, and insecticides.

OSHA's current limit of 10 parts of benzene per million parts of air was first adopted as a consensus standard in 1971 soon after the agency was established. A "lowest feasible" standard of one ppm was promulgated in 1978 to reflect the position that no limit of exposure to a carcinogen can be assumed to be safe, but that rule was struck down two years later by the U.S. Supreme Court.

In an 5-4 opinion, the Court found in *Industrial Union Department, AFL-CIO v. American Petroleum Institute* (8 OSHC 1586) that the agency failed to demonstrate that the one-ppm limit addressed a "significant risk of material health impairment." The Justices remanded the case to the agency for further proceedings.

OSHA Health Standards Director R. Leonard Vance told BNA that Auchter based his decision on an "accumulation of factors" recently presented to him by staff. Among them were the Supreme Court remand, new animal carcinogenicity data expected shortly from two research laboratories, and a risk analysis published independently by two agency scientists, Mary C. White and Peter F. Infante, and a third researcher, Kenneth C. Chu, of the National Toxicology Program.

In an April 1 letter to Dan Edwards, safety and health director of the Oil, Chemical and Atomic Workers International Union, Auchter made reference to discussions held with Edwards "several times in the last few weeks" on the status of the benzene standard. Auchter remarked that he had now found it "appropriate to place benzene on OSHA's regulatory agenda," following briefings on the new evidence and conversations with "key" agency health standards staff members. He commented that it is "premature at this time to predict exactly where these initial explorations will take us."

Representatives of labor and public interest groups, however, suggested that the agency's motivation in announcing its plan was to pre-empt a petition to lower the standard being prepared by the Public Citizen Health Research Group and a committee of unions working under the organizational structure of the AFL-CIO. The unions include OCAW, the International Chemical Workers Union, and the United Rubber Workers.

#### Leukemia Risk

The risk analysis by White, Infante, and Chu estimated that a working lifetime exposure of 45 years to benzene at the current 10 ppm limit would result in approximately 44 to 152 excess leukemia deaths per 1,000 exposed workers. Exposure for a comparable period at one ppm would pro-

duce five to 16 excess leukemia deaths per 1,000 workers, the researchers determined.

At different lengths of exposure, including one, five, 15, and 30 years, the risk associated with 10 ppm was "consistently" 10 times greater than the risk at one ppm, the analysis also found.

The researchers said they based their estimates on a "one hit" mathematical model for describing the relationship between the level of exposure to a carcinogen and the probability of developing cancer associated with that level. This model, they remarked, is based on the assumption that a single dose of a carcinogen "can affect some biological phenomenon in [an] organism which subsequently will lead to the development of cancer."

The model, they added, assumes that every dose level is accompanied by "some amount of excess cancer risk."

White, Infante, and Chu derived their estimates by applying the model to data from two earlier studies. One study, which dealt with mortality among rubber workers in Ohio, was published by the National Institute for Occupational Safety and Health in 1977 and corroborated by a 1982 reanalysis (Current Report, Feb. 25, 1982, p. 773). NIOSH found seven leukemia deaths where 1.25 had been expected. The other study, published by M.G. Ott and three other researchers in 1978, found that 91 Dow Chemical Company workers had died from myelocytic leukemia over a 33-year period, compared with 0.8 deaths expected.

Although the scientific literature is "filled" with studies that qualitatively link benzene exposure with leukemia in humans, these two studies are the only ones which meet "the minimum requirements for inclusion in a quantitative risk assessment for benzene," the researchers asserted.

#### Labor Comment

"We're pleased that the threat of a petition has moved OSHA to begin action on the development of a standard," said Sheldon Samuels, safety and health director of the AFL-CIO Industrial Union Department, which was a party in the Supreme Court case and plans to be among those signing the new petition. "The fact is that the criteria for significant risk was achieved a year ago."

Edwards of OCAW commented to OSHR that the action on benzene would be "quite satisfactory" if a final standard can be issued "in a year or less." However, he added, the union "would not be satisfied" if OSHA plans a "normal rulemaking of two, three, or four years."

A science researcher for Public Citizen said the groups "may well go ahead" with their petition because the rule-making path being planned by the agency "will take a long, long time" and quicker action may be merited by the evidence. The researcher, Barbara Freese, remarked that their plan to petition the agency on benzene was "no secret" and said it was "not just a coincidence" that OSHA now plans to take action.

In light of the Supreme Court's mandate, benzene has been "conspicuously absent" from OSHA's regulatory agenda, she added, faulting the agency for not taking up the matter earlier.

Another public interest group, the Urban Environment Conference, called for OSHA to lower the standard in a fact sheet issued at a press conference three days before OSHA made its announcement. At the current level, the group contended, 1,400 to 1,700 leukemia deaths can be expected among every 100,000 workers exposed.

In addition, the House Science and Technology Subcommittee on Investigations and Oversight, chaired by Rep. Albert Gore Jr. (D-Tenn), reportedly has been considering