



Health Hazards

**OSHA WILL ADOPT 50 PPM EXPOSURE
LIMIT IN EMERGENCY VINYL CHLORIDE RULE**

An emergency temporary health standard for vinyl chloride to be issued by the Occupational Safety and Health Administration will establish a ceiling exposure limit of 50 parts per million.

The emergency rule will be issued while OSHA proceeds with normal rulemaking procedures for a permanent standard.

The OSHA action followed disclosure by officials of the B. F. Goodrich Chemical Company plant in Louisville, Ky., of a possible connection between vinyl chloride exposure and the deaths of several employees of angiosarcoma, a rare form of liver cancer (Current Report, January 31, p. 1099).

Union support and management opposition to an emergency standard for vinyl chloride were registered during an OSHA public hearing on February 15 (Current Report, February 21, p. 1189).

The emergency standard will reduce permissible exposure levels of workers in industry from 500 ppm in air to a 50 ppm ceiling, and at the same time require workplace monitoring and, where exposure is greater than the 50 ppm level, personal protective measures and equipment.

The adoption of a 50 ppm ceiling would be a significant departure from the work practices standard recommended by the National Institute for Occupational Safety and Health (Current Report, March 14, p. 1276). NIOSH maintained that there was inadequate evidence to support the concept that exposure levels of less than 50 ppm were safe.

Under the Occupational Safety and Health Act, the emergency temporary standard serves as a proposed permanent standard. Assistant Labor Secretary John H. Stender said the permanent standard would also be based upon the NIOSH recommendations.

Proposed Standard

The proposed standard (the emergency standard) would establish methods of monitoring work areas for vinyl chloride, set work practices to be followed, institute a medical surveillance program for employees, and require specific personal protective equipment.

The rule is intended to limit exposure to vinyl chloride, a substance that is used widely in the manufacture of polyvinyl chloride, a form of plastic. Monitoring devices now available can measure exposures as low as one part per million in air.

The emergency standard, to be issued "soon," can remain in effect up to six months. It will be superseded, however, as soon as the permanent standard proposal is adopted.

Stender said that "theoretically, the permanent standard can be on the books as early as June. Meanwhile,

the emergency standard will serve to protect workers from the grave danger we know exists."

Following the OSHA hearing on February 15, Stender and other OSHA officials visited several chemical plants for on-the-spot investigations to determine possible means of limiting worker exposure to vinyl chloride.

Stender said scientific evidence presented at the February 15 hearing by Professor Cesare Maltoni, an Italian scientist, led to the emergency ceiling reduction. Maltoni's studies demonstrated that reduction from 500 to 50 ppm provides a considerable degree of protection from the 250 ppm concentration observed by Maltoni to be cancer-causing in animals, while those exposed only to 50 ppm showed no apparent ill effects.

Stender's visits and meetings followed a field study by a team of OSHA industrial hygienists and chemical engineers at a number of chemical plants in Louisiana to develop technical recommendations.

Although the emergency standard will become effective shortly after publication in the Federal Register, the permanent standard will not be adopted until the public has been given an opportunity to comment and, if requested, a public hearing is held.

KMX 01816

Asbestos

**OSHA ALERTS INDUSTRY TO NEW SOURCE
OF HAZARDOUS EXPOSURE TO ASBESTOS FIBERS**

Industry and labor were alerted to a new potential source of occupational exposure to asbestos fibers contained in spackling and taping compounds used to cover seams in dry-wall joints, the Occupational Safety and Health Administration announced on March 27.

The compounds are used chiefly in the home construction industry. Workers sanding joints smooth before painting may expose themselves to three to 13.7 asbestos fibers per cubic centimeters of air, OSHA stated. The OSHA standard for asbestos limits worker exposure to five fibers per cubic centimeter for an eight-hour time-weighted average.

Trade associations, unions, employer groups, and representatives of construction industry are being asked by OSHA to join the effort to alert employers and employees to the potential hazard. OSHA was alerted to the hazard by Dr. Marcus M. Key, director, National Institute for Occupational Safety and Health.

Worker Examination

Current awareness of the potential hazard is based on examination of 17 members of the International Brotherhood of Painters and Allied Trades, New York City, conducted by Dr. Irving J. Selikoff, director, environmental sciences laboratory, Mount Sinai School of Medicine, City University of New York. X-rays revealed that the lungs of nine of the 17 workers examined

showed positive evidence of fibrosis, OSHA stated. This evidence suggests that a serious health hazard may exist among home builders because lung cancer, which often follows fibrosis, seldom develops before 20 years of exposure.

Of the 17 workers examined, five out of 10 who had been in taping work from 10 to 19 years showed fibrosis results. Four of the remaining seven, who had an exposure history of 20 to 29 years, showed signs of fibrosis.

The OSHA field staff and all states with approved worker safety and health plans have been notified of the new potential source of exposure, OSHA stated.

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NIOSH ISSUES MEDICAL SURVEILLANCE SUPPLEMENT TO VINYL CHLORIDES DOCUMENT

Recommendations for medical screening to detect liver disease and/or hepatic tumor associated with exposure to vinyl chlorides were issued by the National Institute for Occupational Safety and Health on March 22.

The recommendations, supplementing NIOSH's recommended work practices document on vinyl chlorides (Current Report, March 14, p. 1276), were sent to the Occupational Safety and Health Administration on the above date.

The supplement, "h. Medical Surveillance," recommends specific health screening requirements that would apply to all persons involved in vinyl chloride monomer production and polymerization including those clerks and management personnel involved indirectly with these operations.

The recommendations must be applied both as a pre-employment requirement and as part of periodic health followups. Screening priorities must be given to current employees with prolonged and close potential exposure to vinyl chloride monomer in present and past settings.

The specific full text recommendations for routine health screening at the time of initial employment and for periodic health followup examinations (where specified) are as follows:

(i) At time of initial employment, or upon institution of screening, a physical examination shall be performed with specific attention to detecting enlargement of liver or spleen by abdominal palpation.

(ii) At time of initial employment, or upon institution of screening and annually thereafter, a medical history check-list shall be completed by the employee. This list shall include questions concerning:

(a) alcohol intake;

(b) past history of hepatitis;

(c) past exposure to potential hepatotoxic agents, including drugs and chemicals;

(d) past history of blood transfusions; and

(e) past history of hospitalizations.

Completed medical check-lists shall be reviewed by a physician and should be acted upon as medically indicated for each individual employee.

(iii) At time of initial employment, or upon institution of screening, a serum specimen shall be obtained for

screening with respect to the following five bio-chemical determinations of liver function:

(a) total bilirubin;

(b) alkaline phosphatase;

(c) serum glutamic oxalacetic transaminase (SGOT);

(d) serum glutamic pyruvic transaminase (SGPT);

and

(e) gamma glutamyl transpeptidase (GGTP).

Additional tests that may optionally be considered for use in screening include lactic dehydrogenase (HLD), serum protein determinations, serum protein electrophoresis, and platelet count. Laboratory analyses shall be performed in laboratories accredited by the College of American Pathologists or licensed in accordance with the provisions of the Clinical Laboratories Improvement Act of 1967.

(iv) If results of laboratory screening are normal, screening shall be repeated on an annual basis. If the person being screened has been employed directly in vinyl chloride monomer production or polymerization for 10 years or longer, screening shall be repeated every six (6) months.

(v) If one or more liver function tests are abnormal, serum testing shall be repeated as soon as possible, preferably within two (2) to four (4) weeks. If no abnormalities are present upon rescreening, testing should be repeated in three (3) months.

(vi) If abnormalities persist on rescreening, the employee shall be removed from contact with vinyl chloride monomer operations and an individualized medical workup shall be instituted. Suggested as initial steps in medical workup are a complete physical examination and various special procedures such as hepatitis B antigen determination and liver scanning.

If liver function abnormalities are determined to be unrelated to liver disease (e.g., elevated alkaline phosphatase in a young, physically active man or elevated bilirubin in Gilbert's syndrome) or to be transient (e.g., due to recent hepatitis or recent alcohol intake), the employee may be permitted to return to vinyl chloride-related employment, subject to individual medical evaluation.

(vii) In view of the preliminary results of animal toxicology studies, it is recommended that no woman who is pregnant or who expects to become pregnant should be employed directly in vinyl chloride monomer operations.

KMX 01817

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LOUISVILLE HEALTH SCIENCES CENTER ORGANIZES RESEARCH ON LIVER CANCER

A medical research program on angiosarcoma and related liver abnormalities is being organized by the University of Louisville's Health Sciences Center and Cancer Center under a grant from the B.F. Goodrich Company.

An announcement by B.F. Goodrich Company that several workers at its Louisville, Ky., plant died from angiosarcoma of the liver prompted concern about health hazards associated with the production of vinyl chloride (Current Report, January 31, p. 1099).