



OSHA to lower formaldehyde exposure level

The 1987 permissible exposure level may be reduced to protect workers

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A reduced exposure level of U.S. workers to formaldehyde has been proposed by the Occupational Safety and Health Administration (OSHA), which has the responsibility of safeguarding the health and safety of the nation's workforce. The permissible exposure level (PEL) would be lowered from the existing 1.0 parts of formaldehyde per million parts of air (ppm) as an 8-hour, time-weighted average (TWA) to an 8-hour TWA of 0.75 ppm.

Background

In December 1987, the agency adopted the PEL of 1.0 ppm with an action level of 0.5 ppm (triggering employee exposure monitoring, medical surveillance, recordkeeping, regulated areas, emergency procedures, preferred measures to control exposure, maintenance and selection of personal protective equipment and hazard communication). A short-term exposure limit of 2 ppm in 15 minutes was also part of the regulation.

OSHA's 1987 regulation was challenged in the courts by four unions and a public interest group. The challenge was based on the assumption that the PEL had not been set low enough to eliminate all significant risks from cancer and formaldehyde's irritant effects. The court indicated that OSHA had not adequately explained why a lower value was not adopted. The new regulation (*Federal Register*, July 15,

1991, pp. 32301-32318) would respond to the court's direction.

The chemical formaldehyde is a colorless, pungent gas at room temperature with an odor threshold of approximately 1 ppm. It is a major industrial chemical (ranked 24th in production volume in the United States). In 1985, some 5.7 billion pounds were produced for basic uses, such as an intermediate in producing resins and industrial chemicals, as a bactericide or fungicide, and as a compound in the formation of end-use consumer items.

Textile treating to impart wrinkle-resistance to clothing is also an important use of formaldehyde; the apparel industry is the sixth largest sector in the United States and thus is a major source of formaldehyde exposure in the workplace.

Other provisions

OSHA also proposed provisions covering medical removal protection to supplement existing medical surveillance requirements for those employees suffering significant eye, nose or throat irritation, and for those suffering from dermal irritation or from sensitization from occupational exposure to formaldehyde. In addition, there are proposed changes to the hazard communication and employee training requirements.

Exposure monitoring informs the employer as to what the employees' exposures are and whether the employer meets the

obligation to keep the employee exposures below the PEL. The new regulatory language requires prompt "employee monitoring if there are reports of signs of symptoms due to formaldehyde exposure." Medical removal provisions (MRP) have been added to the regulatory requirements that address the relocation of an employee to a location with significantly less exposure (about 25% or greater reduction) when directed by an examining physician.

OSHA has estimated that some 84,000 workers are currently exposed to formaldehyde levels between 0.75 and 1.0 ppm (with 59,000 of these being in the apparel industry). The total capital costs of instituting engineering controls to comply with this regulation would be \$38.9 million, with associated annual operating costs of \$9.2 million.

Cost estimates are provided in the proposed regulation by individual industries (foundries, hardwood plywood, particleboard, medium density fiberboard, furniture, laboratories, funeral services, resins, textile finishing, apparel, formaldehyde production and plastic molding laminates).

Following the court decision, the parties to the litigation developed recommendations for revising the 1987 regulation. OSHA's proposed regulation is consistent with those recommendations, and the agency is proceeding to use the expedited rulemaking process. ■