

The Agency has considered several alternatives for dealing with potential lung effects in the context of the polymer exemption which are described in Unit III of this preamble. Under the proposal, manufacturers of water-insoluble polymers with MW of 10,000 or greater would be required to certify that they are aware of the potential for harmful lung effects upon inhalation of certain high MW polymers, and would provide, at a minimum, worker protection in the form of a NIOSH-approved category 21C, 23C, or equivalent respirators if there is a potential for inhalation exposure to any respirable particulates of the exempted polymer. Alternatively, manufacturers could insure that workplace respirable dust does not exceed 0.5 mg/m³, as an 8-hour TWA based on present data, to reduce worker exposure. Manufacturers would be required to notify processors and industrial users of potential inhalation exposures and would be required to cease distribution to customers who failed to provide the prescribed worker protection measures.

The Agency believes that a level of 0.5 mg/m³ will provide an adequate margin of safety in light of the data and that this level is technologically feasible. The Agency requests comment on typical airborne concentrations, particle sizes and respirable content of commercial products.

The Occupational Safety and Health Administration (OSHA) Permissible Exposure Limit (PEL) for respirable particulates, not otherwise regulated is 5 mg/m³ (29 CFR 1910.1000) as an 8-hour time-weighted average (TWA). EPA assumes that companies are in compliance with the OSHA PEL and are controlling employee exposure to 5 mg/m³ or below by using engineering controls, respiratory protection, etc., as required by the standard. However, in light of the data noted above, EPA believes it is reasonable to require a lower limit for respirable particulates of water-insoluble polymers. To achieve compliance with the 0.5 mg/m³ exposure limit proposed by EPA, additional engineering controls, work practices, good housekeeping practices, or different respiratory protection may be needed. EPA prefers the use of process changes, engineering controls, and work practices to reduce inhalation exposure to acceptable levels, and believes that in many cases, companies already in compliance with the OSHA PEL of 5 mg/m³ would be able to achieve the 0.5 mg/m³ exposure limit by modifying and improving the existing work practices, housekeeping, and maintenance practices, to reduce the amount of dust generated, or by upgrading engineering controls or respiratory protection currently used. However, EPA realizes that the OSHA PEL does not apply to all workplaces and that there are different PELs for different industry groups such as construction. EPA requests comments and information on typical airborne concentrations of respirable high MW polymers and airborne particle size distributions measured in the workplace, and on process changes, engineering controls, work practices, etc., that would be needed to meet the exposure limit of 0.5 mg/m³ for respirable particulates of high MW polymers.

Examples of process changes to reduce inhalation exposure include manufacturing, processing, and using materials in solution, in pellet form, or as a wet cake instead of drying the material and handling it as a powder or in other particulate forms. Application methods other

than spray application (e.g., roller coating, dip coating , etc.) can also reduce inhalation exposure as the potential for aerosol generation is reduced. In addition, good housekeeping practices, appropriate maintenance and good work practices, (e.g., wet mopping or vacuuming spills instead of dry sweeping, repair of leaks as soon as possible, etc.) can also reduce the amount of dust generated, and the potential for inhalation exposure.

Where engineering controls are employed as an alternative to respirators, the initial exposure assessment must be sufficient to insure that the airborne concentration of respirable high MW polymers does not exceed 0.5 mg/m³. In such cases, EPA recommends but would not require personal monitoring and requests comments on appropriate collection devices. Respirable cyclone dust samplers which are commonly used to differentiate the respirable fraction from larger particles in the aerosol may be inappropriate for high MW polymer materials. The performance of the 10 mm plastic cyclone (which is commonly used to collect respirable dust) has been criticized because an electric charge can accumulate on the plastic and distort the collection characteristics. EPA encourages the use of an impactor or other suitable collection device for sample collection for high MW polymer materials and is interested in comments.

- c. Polyester polymers manufactured solely from reactants listed at §723.250(e)(3). The Agency has had sufficient experience in reviewing polymer exemption notices for polyester polymers that are prepared using reactants specified in the 1984 exemption rule that the Agency does not believe such polymers represent a risk to human health or the environment. Accordingly, the Agency believes that these polyester polymers should continue to be eligible for exemption. The only change EPA is proposing to this exemption is the deletion of a footnote that would no longer be applicable, because under the proposal all monomers and reactants used to manufacture the polymer must be on the TSCA Inventory.