

are many questions which have to be answered such as: whether different kinds of fibers exert the same biological effects; the nature of the dose-disease relationship; sources and extent of environmental contamination; the range of industrial exposure; the range of neoplastic effects of asbestos exposure; and whether asbestos bodies may not sometimes result from mineral fibers other than asbestos. -- APCA Absts.

- 1191 Fiber Glass. Chemistry and Technology. C. P. McCord.
J. Occ. Med. 9, 339-344 (July, 1967).

Fiber glass, like all common forms of glass, is a chemically inert substance. It possesses no known toxic properties. On a mechanical basis, spicules may abrade the skin leading to superficial and transitory irritation. Among fiber glass makers, particularly new workers who are most exposed, skin irritation occurs, but is not remarkable. Although free silica is a major primary ingredient of the batch before melting, no free silica occurs in the glass fibers or in the ultimate products. Silicosis is not a fiber glass hazard. The present consensus is that, because of the particle size, fiber glass is not respirable, and thus unlikely to reach the alveoli of the lungs, but it may reach the tissues of the upper respiratory tract. In animal experiments the introduction of fiber glass particles into the respiratory tract has failed to provoke pneumoconiosis. However, some minor tissue changes have been observed, chiefly reflecting a foreign-body reaction. Fiber glass is not a known carcinogen. Animal experimental work with fiber glass particles introduced into the lungs has failed to provoke lung cancer. No clinical cases of lung cancer have been traced to fiber glass as the source. A fair number of chemicals in ancillary use in fiber glass production may possess some harmful properties. As example, the number includes partially polymerized resins of phenol formaldehyde, urea formaldehyde and epoxies, and fluorides, and trichloroethylene. Such substances involve the fiber glass makers, whose exposures are not contemplated in this presentation, but do not carry over to secondary fabricators, to installers, or to consumers. All considered, fiber glass, on a relative basis, is one of the least harmful substances known to industry.

- 1192 Pulmonary Hazards From Exposure to Glass Fibers. A. N. M. Nasr.
J. Occ. Med. 9, 345-348 (July, 1967).

The results from animal experiments and human experience with respect to the effects of fibrous glass upon the respiratory tract have been reviewed. The opinion that inhalation of glass fibers may result in irritation of the upper respiratory tract, with no prospect of significant pulmonary involvement, is repeatedly encountered in the literature. The size of the glass fibers in common application and their tendency to form felt-like masses upon any object with which they come in contact probably prevent inhaled glass fibers from penetrating into the pulmonary alveoli. Three cases in which exposure to fibrous glass was associated with the development of inflammatory lung disease have been reported by individual authors. In those cases the illness was acute, and infection played the major role. A case of bronchial asthma in association with exposure to fibrous glass has been also reported. In all four cases, no appraisal was made concerning other air contaminants that may have been present in the work environment. In a limited number of workers who had been exposed for years to glass fibers, cardiac and pulmonary-function studies revealed no functional impairment. As far as could be ascertained from a search of the American and European literature, available evidence indicates that fibrous glass is a relatively inert material with no fibrogenic or other significant toxic properties. There are 23 references. -- Author's summary

PHYSICAL ASPECTS OF THE ENVIRONMENT

- 1193 Barometric Pressure Fluctuations: Effects on the Activity of Laboratory Mice. R. L. Sprott.
Science 157, 1206-1207 (September 8, 1967).

Fluctuations in naturally occurring levels of barometric pressure appear to be an important determinant of activity in laboratory mice. In three experiments, activity was higher after increases in barometric pressure than it was after decreases. When the barometric pressure remained relatively stable, intermediate levels of activity were observed. -- Author's abst.