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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF HEALTH
DIVISION OF OCCUPATIONAL HEALTH

HYGIENIC INFORMATION GUIDE NO. 7

ASBESTOS

PROPERTIES:

Asbestos is composed of a number of different minerals which are silicates of variable composition, but basically are of a form of hydrous magnesium silicate. Their chief characteristic is a structure composed of long, parallel, flexible fibers, capable of repeated longitudinal subdivision. Many varieties are sufficiently flexible to be spun into yarn or woven on modified textile machinery. Manufacturing processes can cause this mineral to break up into many minute particles.

THRESHOLD LIMIT VALUE (acceptable atmospheric concentration for 8-hour work period):

5 million particles per cubic foot of air.

MEDICAL ASPECTS:

Long continued inhalation of asbestos dust may result in a form of pneumoconiosis known as asbestosis. The primary effect of such inhalation is a condition of pulmonary fibrosis. A characteristic finding of asbestosis is the presence of asbestos "bodies" in the lungs and sputum. Complete roentgenologic study of the chest and histopathological findings are necessary to establish the presence of this disease. The question of whether or not there is any relationship between the inhalation of asbestos dust and cancer of the lung is still under discussion but more and more evidence is accumulating that exposure to asbestos fibers may cause cancer of the lung.

PREVENTION:

a. Preplacement: Occupational history is a necessity. A complete physical examination, including a chest x-ray, should be emphasized.

b. Periodic Examination: A physical examination, together with a chest x-ray film, should be given about once a year. Cases where pathologic lung changes have occurred should be relocated from employment in dusty operations.

EXPOSURE CONTROL:

a. All dust-producing operations should be equipped with local exhaust ventilation. Where possible, isolation or segregation of the operation should be observed, together with the use of wet methods.

b. Housekeeping should be maintained with a view to preventing any accumulation of deposited dust. Vacuum methods of cleaning are preferred, and should be performed "off-shift" or when least exposure to plant personnel would occur.

c. Where other methods of control are not feasible, dust respirators, of a type approved by the U. S. Bureau of Mines for protection against pneumoconiosis-producing dusts, should be supplied to those employees subjected to the dusty atmosphere.

d. A periodic determination of the dust levels of the plant atmosphere should be made to ascertain the efficiency of the control measures in use.