

عنوان مقاله:

Health Hazards of Occupational Exposure to Bitumen Fumes

محل انتشار:

اولین همایش بین المللی قیر (سال: 1387)

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خلاصه مقاله:

Studies of the acute toxic effects of asphalt fume exposures in workers have repeatedly reported irritant symptoms of the serous membranes of the conjunctivae (eye irritation) and the mucous membranes of the upper respiratory tract (nasal and throat irritation). Accordint to several studies, Workers employed in asphalt industry experienced mild transient symptoms of nasal and throat irritation, headache, and coughing. In addition to mucosal irritation, workers with differing occupational exposures to asphalt fumes also reported skin irritation, pruritus, rashes, nausea, stomach pain, decreased appetite, headaches, and fatigue. Such nonspecific symptoms require further investigation to clarify and establish the nature of causal relationships with asphalt fume exposure. Results from recent studies indicated that some workers involved in asphalt paving operations experienced lower respiratory tract symptoms (e.g., coughing, wheezing, and shortness of breath) and pulmonary function changes. Data are limited regarding the presence of carcinogens in asphalt fumes. The occasional detection of benzo(a)pyrene, B(a)P, in asphalt fumes generated at worksites as well as the more frequent detection of B(a)P and other carcinogenic polycyclic aromatic compounds in laboratory-generated asphalt fumes indicate that under some conditions, known carcinogens are likely to be present. Moreover, asphalt fumes generated at high temperatures are probably more likely to generate carcinogenic polycyclic aromatic hydrocarbons (PAHs) than fumes generated at lower temperatures. A recent meta-analysis of epidemiologic studies of roofers indicates an excess of lung cancer among roofers, but it is uncertain whether this excess is related to asphalt and/or to carcinogens such as coal tar or asbestos. Data from studies in animals and in vitro assays indicate that laboratory-generated roofing asphalt fume condensates are genotoxic and produce skin tumors in mice. Known carcinogenic PAHs have been identified in roofing asphalt fumes. Although some of the studies reported an elevated risk for lung cancer among pavers exposed to asphalt, design limitations of these studies precluded any strong conclusions. A few studies reported an association between cancer at sites other than the lungs (e.g., bladder, kidneys, brain, and liver) with occupations having potential exposure to asphalt. The available data indicate that although not all asphalt-based paint formulations may exert genotoxicity, some are genotoxic and carcinogenic in ... animals. No published data examine the carcinogenic potent

کلمات کلیدی:

asphalt- fume- occupational- exposure- health effects-NIOSH

