

Society For Risk Analysis Annual Meeting 2010

Risk Analysis in Action

W4-F – Wednesday, December 7, 2010

Risk Assessment of Inhaled Hazards

W4-F.4 16:30 Pleural Mesothelioma in U.S. Auto Mechanics: Expected vs. Reported Cases from 1975-2007. *Finley BL**, *Scott LLF*, *Galbraith DA*; ChemRisk, LLC bfinley@chemrisk.com

Abstract: Until the 1980s, chrysotile asbestos was a component of automotive brakes. The current (2006) Occupational Safety and Health (OSHA) information bulletin for brake repair cites a single study of brake workers; this study concluded that the number of individual cases of pleural mesothelioma reported in auto mechanics indicates an asbestos-related risk for this occupation. However, the cited study did not compare the reported number of cases to an “expected” value. This represents a significant information gap, because pleural mesothelioma is known to occur in the general (non asbestos-exposed) population at a consistent rate and therefore it is expected that a number of “background” pleural mesotheliomas will occur in auto mechanics, even in the total absence of asbestos exposure. This analysis compares the number of pleural mesothelioma cases reported among U.S. auto mechanics from 1975-2007 to an expected value derived from labor statistics data and estimates of current + former workers. A total of 106 individual cases describing mesothelioma or malignant neoplasm of the pleura (MNP) in professional U.S. auto mechanics were found in the literature. Many had experienced significant amphibole exposure in other occupations, a well-established as the primary risk factor for mesothelioma in U.S. males. Using a “background” rate for pleural mesothelioma of 3 cases per million individuals per year, we estimated that at least 444 cases of non-asbestos related pleural mesothelioma would have occurred in current or former auto mechanics during this same time period. This estimate is biased low because mesothelioma rates are much higher in the older age groups that would be representative of most retired mechanics. Hence, our findings indicate that the number of pleural mesothelioma cases reported for professional automotive mechanics is actually far lower than the number of cases that would be expected to occur in the absence of any asbestos exposure.