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LIFE CYCLE OF ASBESTOS IN COMMERCIAL
AND INDUSTRIAL USE INCLUDING ESTIMATES
OF RELEASES TO AIR, WATER AND LAND

Final Inhouse Report

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consumed annually, 24.5 metric tons of fibers would become airborne. This is higher than process and disposal emission estimates arrived at for the entire miscellaneous products category using Levine's³¹ assumptions. Combining Levine's 1974 estimates with 1980 asbestos consumption data, an estimate of 5.2 tons per year for process emissions and 0.5 tons per year for disposal emissions can be calculated. For consistency with the other chapters, these estimates will be used for the entire miscellaneous products category. The use of pelletized asbestos by the entire industry would significantly reduce the amount of asbestos released to the air.

Conclusion

The use of asbestos in drilling muds has been decreasing due to concern for worker's health and standards promulgated by the Occupational Safety and Health Administration concerning airborne asbestos. In instances where asbestos is used, asbestos in pellet form, as opposed to fiber form, should be employed to decrease fiber release to the air. The ultimate disposal of asbestos containing drilling muds is in the mud pit which is covered with dirt.

Adequate substitutes are available to replace both functions of asbestos in drilling muds, i.e., to provide carrying capacity (viscosifier) and to act as a loss-circulation material. A large number of substitutes exist for loss-circulation material at a competitive cost. The substitute materials which are viscosifiers are the bentonite, attapulgite, and sepiolite clays and a variety of polymers. The clays are competitive with asbestos in cost. The polymers are more expensive than asbestos, but less material is necessary to make up the drilling mud resulting in a cost per barrel figure that is still more expensive, but nevertheless competitive. The use of asbestos in drilling muds is not mandatory and probably not even necessary in most applications as adequate substitutes exist at a competitive cost.

SHOTGUN SHELL BASE WADS

Asbestos has been used to manufacture base wads for shotgun shells. Base wads are formed from a mixture of about 36 percent by weight of asbestos, 54 percent wood flour and 10 percent wax which is pressed to form the required shape.¹⁸

Only one shotgun shell manufacturing plant (operated by Remington Arms Company in Bridgeport, CT) is known to use asbestos. However, the manufacturer is currently phasing out asbestos in shotgun shell base wads. The asbestos-containing shells are being replaced with a one piece polyethylene shell which is a more stable shell in addition to being less costly. The Remington Arms Company recently reported that they will have converted 95 percent of the asbestos-containing shotgun shells to one piece asbestos-free shells by the end of the year 1980. The remaining 5 percent will be converted to asbestos-free shells by the end of the year 1981.¹⁸

The major source of emissions from manufacturing occurs during handling and introduction of the raw material. Processing areas are typically vented to fabric filters. The material collected in the baghouse is recycled. Fiber release in process water and product scrap wastes are judged to be minor. Also, fiber emissions probably occur when the shotgun shell is fired from a gun but there is presently no means of determining the amount of fibers that become airborne as opposed to those that remain encased in the wad mixture.¹⁴

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