# INHALATION OF TOXIC PRODUCTS FROM FIRES*

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Approximately 8,000 fire fatalities occur annually in the United States, and about 80% of these fatalities are attributed to inhalation of toxic combustion products. It is further estimated that 200,000 fire injuries occur annually and that many of these invoke smoke inhalation. The recent MGM, Hilton, and Stouffer Hotel fires emphasize the role of smoke in unwanted fires even though these multiple fatality fires comprise a very small percentage of the total number of annual fire deaths.

As a first step to understanding these losses, a fire-fatality study was initiated in October 1971 in cooperation with the Maryland State Medical Examiner's Office in an effort to define the smoke inhalation hazard resulting from fires.[1] The objective of the program was twofold: to determine the specific cause of death by detailed autopsy study of fire victims and to determine the specific causes of fatality-producing fires by on-the-scene fire investigations.

In addition to this study, the Center for Fire Research has also been involved in such other major multiple death fires as the Tennessee jail fire.[2] The major findings and toxicological issues raised by these studies are summarized below. The Tennessee jail fire represents a nonresidential fire and is included because it highlights a number of smoke-inhalation problems related to the use of synthetic materials, and complements some of the findings of the Maryland study.

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