

ISRP 2000 abstract

Presenter/author	Title	Abstract
Hofacre, Kent Associate manager, Battelle, Columbus, OH, USA	Assessment of Chemical Vapor Releases in a Model Building	Release of chemical vapors in a building as the result of evaporation from spills, leaking or venting from a pressurized container, or by spraying can result in a hazardous indoor air quality environment. Whether the release is intentional as that for a terrorist activity or an accident, estimates of the resulting time dependent vapor concentration and distribution throughout the building are important to know and understand to properly assess the hazard. The purpose of this paper is to present an approach used to predict vapor concentration profile and distribution in a model building to estimate the resulting hazards. Release scenarios of spills, venting from a cylinder, spraying of liquids are presented. The effect of chemical volatility, spill characteristics, release rates, and sinks (active vapor removal by adsorption) on predicted vapor concentration profiles and its distribution throughout the building are presented. Estimated hazard levels associated with the release scenarios are shown to illustrate the dependence on chemical toxicity. The results of such an approach can be useful to guide policy makers regarding appropriate challenge concentrations to test and evaluate respiratory protection equipment.