

ISRP 2002 abstract

Presenter/author	Title	Abstract
Pietrowski, P. <i>Central Institute for Labour Protection, Lodz, Poland</i>	Organic Gas Filter Performance Against Single and Binary Vapor Mixtures	<p>This paper describes the adsorption characteristics of a gas filter bed of two commercially available activated carbons determined under dynamic flow conditions for single vapor and binary vapor mixtures. Additionally the effects of air humidity on gas filter breakthrough time were determined for both single and binary vapors. Acetone, chloroform, benzene, and cyclohexane and binary mixtures of these vapors were used during the tests.</p> <p>The research included:</p> <ol style="list-style-type: none">1. measuring the adsorption isotherm of activated carbons used as adsorbent2. loading the gas filters with single vapors and binary vapor mixtures until breakthrough3. sectioning loaded gas filter bed into layers and measuring adsorbates concentration in each obtained layer. <p>Obtained for binary mixtures data indicate that as loading experiment proceeds, a compound that is adsorbed weakly by the adsorbent bed is displaced by more strongly adsorbed compound. The ratio of displacement depends on physical and chemical properties of both compounds of the mixture. An interesting effects of humidity were observed for single vapors adsorption in comparison with results obtained for binary mixtures.</p> <p>Generally increasing the humidity depressed breakthrough time for single vapors what was in contrast with effects in some cases of binary mixtures tested.</p>