

Thesis Title	The Effects of Time and Temperature on Preservation of Organic Solvent Adsorbed by Activated Charcoal
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ABSTRACT

The analysis and evaluation of toxic substance concentration require at least 2 important steps. One is the method of air sampling and collection. Second is the analytical method for analysis of toxic contaminants. At present, scientists prefer to use a charcoal tube technique for organic vapor sampling rather than the bag method. This study aimed to find the adsorption efficiencies of activated charcoal prepared from coconut. Also the designed studies are concentrated on the effects of direct injection 3 microliters of benzene and on the concentrations of 20 and 40 ppm which show no significant differences when compared with those of NIOSH recommended activated charcoal at a confidence limit 95%

The study also showed that the two physical environmental factors (temperature and time) gave direct effects to the preservation of charcoal tube ie. when increasing the temperature of the preservation sample, the desorption efficiency of the charcoal tube will decrease. The results of study revealed that the concentration of organic benzene vapor analysed after the preservation of temperature between $(-25)^{\circ}\text{C}$ to $(-15)^{\circ}\text{C}$, 0°C to 4°C and 25°C to 35°C gave significant differences at p-value <0.01 respectively. However, the concentrations of organic benzene vapor analysed after 8 weeks of preservation showed significant differences from the control standard charcoal tubes at p-value <0.01 , when compared with those analysed after 24 hrs., 1 and 4 weeks respectively.