

ABSTRACT

Dynamic headspace/ GCMS method was applied to study the compounds outgassed from hard disk drive spindle motors. A non-equilibrium dynamic headspace sampling technique was applied where samples were heated at 85 °C and their outgassed compounds were purged to an adsorbent by flow of nitrogen gas (99.99% purity) set at 65 ml/min for 3 hours.

Desorption of compounds was done by using a thermal desorption system and analyzed via GCMS. Semi quantitative analysis method was carried out with reference to 1000 ng deuterated hexadecane-d34. The major groups of compounds detected in the analysis were the acrylates/ methacrylates, alcohol and hydrocarbons.

A full quantitative method was established for 3 common compounds, i.e. 2-hydroxyethyl methacrylate, tetrahydrofurfuryl acrylate and isobornyl methacrylate. Both semi quantitative and full quantitative methods were compared.