

THE EFFECT OF ADSORPTION TREATMENT WITH ACTIVATED CHARCOAL ON THE CONTENT OF ORGANIC COMPOUNDS IN USED LUBRICATING OILS

ABSTRACT

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The research was conducted on the effect of adsorption treatment with activated charcoal on the content of organic compounds in used lubricating oils. Used lubricating oil is treated with the addition of n-butanol solvent assisted with KOH. Then, adsorption is carried out using activated charcoal with a variation of weight 2, 4, and 6 grams. From the color produced after the adsorption treatment gives a good color, the color change from solid black to brownish yellow. The results of the analysis of the content of organic compounds using Gas Chromatography Mass Spectrometry (GC-MS) for new lubricants obtained 86 peaks, used lubricating oil obtained 85 peaks, whereas in the lubricating oil adsorption results with variations in activated charcoal weight 2, 4, and 6 grams were obtained respectively 96, 117 and 8 peaks. In 2 and 4 grams of adsorption lubricant oil, it is able to reduce the% area of compounds tetrapentacontane, 1,54-dibromo, hexacontane and benzene. In addition, 2 and 4 grams of adsorption lubricating oil on pentatriacontane, tetratetracontane and heneicosane compounds have a% of the area approaching new lubricating oil.

Keywords: used lubricating oils, organic compounds, adsorption, activated charcoal