

## ABSTRACTS

Research has been conducted on the effect of adsorption treatment with activated charcoal on heavy metal content in waste lubricant oil. The purpose of this study is to reduce the levels of heavy metals in waste lubricating oil by adsorption method using activated charcoal so it is close to or equal to the level of new lubricant oil. Waste lubricating oil is added with n-butanol solvent assisted by KOH for the precipitation process of impurities to form a sludge precipitate layer (Sludge). Furthermore, adsorption using active charcoal with weight variation of 1, 3 and 5 gram. From the color produced after the adsorption treatment, gives a much clearer color that is yellowish brown. It is better than the old black lubricant oil. The results of heavy metal content analysis using Atomic Absorption Spectrophotometer (AAS) for new lubricating oil is Al 10,4175 ppm; Cu 0,3525 ppm; Fe 8,105 ppm; Cr 1,585 ppm; Ag 6,2025 ppm and Pb undetectable, for waste lubricating oil is Al 13,5425 ppm; Cu 1,4825 ppm; Fe 24,43 ppm; Cr 0,88 ppm; Ag is undetectable and Pb is undetectable. In the waste lubricant oil of adsorption result on Al and Fe metal occur a significant decrease on the active weight of charcoal is 1 gram with metal content that is 9,6125 ppm and 9,5625 ppm, for metal Cr decrease happened at variation weight 5 gram with metal content 1,0275 ppm. Furthermore, Cr does not decrease in metal but it increases even more with the increase of weight variation and in the Ag metal is also an increase but the weight variation of 5 grams is close to the value of new lubricating oil is Ag 8,5725 ppm, whereas in the metal Pb is not detected metal. Adsorption using activated charcoal against lubricating oil used to reduce weight and weight with a weight of 1 gram, and also with a weight of 3 and 5 grams in used oil is used using Butanol and KOH solvents. Whereas the Cu and the metal also increase the metal content, and the metal Pb does not damage the metal.

*Keywords: Waste lubricant oil, Heavy Metal, Adsorption, Active Charcoal*