Analysis of the Effect of a Mixture of Polypropylane Plastic Fuel with Carbon Cleaner Additives on Motor Vehicle Exhaust Gas Emissions

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ABSTRACT

The increase in motorized vehicles certainly increases the pollution produced, so that the atmosphere on earth. Research related to motor fuel has been carried out so that complete combustion can occur as an effort to reduce exhaust gas emission levels. The aim of this research is to determine the value of exhaust gas produced by mixing polypropylene plastic fuel with carbon cleaner additives so that it produces low exhaust gas values and the effect of exhaust gas emissions before/after mixing with carbon cleaner. In this research, variations were carried out in adding 1 ml, 1.5 ml and 3 ml of carbon cleaner to 100 ml of fuel. This fuel is made by pyrolysis, namely heating plastic waste at a temperature of 250-350 ^{o}C. Meanwhile, fuel without the addition of carbon cleaner produces emissions of (HC = 307ppm and CO = 0.26%). Emission levels from plastic fuel with a mixture of additives have met the exhaust gas emission threshold set by the Ministry of Environment and Forestry number 8 of 2023, namely, HC = 1000ppm and CO = 3%.

Keywords: Pyrolysis, Polypropylene, Carbon Cleaner Additives, Exhaust Gas Emissions