

Viscosity and Emission Test for Liquid *Polypropylene* Fuel from *Pyrolysis Incinerator*

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ABSTRACT

Plastic waste is still a serious problem in Indonesia. Plastic waste is difficult to decompose in the soil so it takes a very long time to decompose. Plastic waste can be recycled into alternative fuels by heating the plastic waste to a temperature of 200 °C. Plastic is a polymer or a long chain of atoms bonded together from petroleum, so this process simply returns it to its original shape. This process is known as pyrolysis. In this study the results of plastic fuel mixed with pertalite. There are 5 variations of the fuel mixture, namely 30% plastic fuel + 70% pertalite, 50% plastic fuel + 50% pertalite, 70% plastic fuel + 30% pertalite, 85% plastic fuel + 15% pertalite, and 100% plastic fuel. The tests carried out are dynamic viscosity tests and exhaust emissions at engine idle speed. The lowest value of viscosity was 0.736 cP in the variation of the mixture of 30% plastic fuel + 70% pertalite and the highest value of 0.799 cP in the variation of the mixture of 100% plastic fuel. In the exhaust gas emission test, HC levels ranged from 221.7 ppm – 276 ppm, CO levels ranged from 0.247 % - 0.280 %. CO and HC levels are below the exhaust emission threshold.

Key words: *pyrolysis, plastic, viscosity, exhaust emission*