

CERTIFICATION OF APPROVAL

Material Compatibility and Fuel Properties of E10 and E85

by

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CERTIFICATION OF ORIGINALITY

This is to certify that I am responsible for the work submitted in this project, that the original work is my own except as specified in the references and acknowledgements, and that the original work contained herein have not been undertaken or done by unspecified sources or persons.

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ABSTRACT

Gasoline fuel in current automotive trend has lead to higher emission rate and increases the air pollution. Ethanol blends is suitable as alternative fuel to replace the gasoline because it increase the oxygen percentage in the mixture and lead to lean combustion. Extensive study is needed to determine the properties of the ethanol blend that relate to the material compatibility of fuel system component. Immersion testing which specified under SAE standard which are J1748 (8) for polymeric material and J1747 (7) for metallic material is a testing required to test the material compatibility of used-Honda Accord 2.0-L (1996) which comprises fuel regulator, fuel line and fuel injector. The effect of the fuels to the fuel system component is to be visually studied in term of corrosion, surface crack and fatigue. Result of the experiment can be use for further examination to prove the feasibility of the ethanol blend fuel.