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(54) Title: **FUEL ADDITIVES AND FORMULATIONS FOR IMPROVING PERFORMANCE OF GASOLINE DIRECT INJECTION ENGINES**

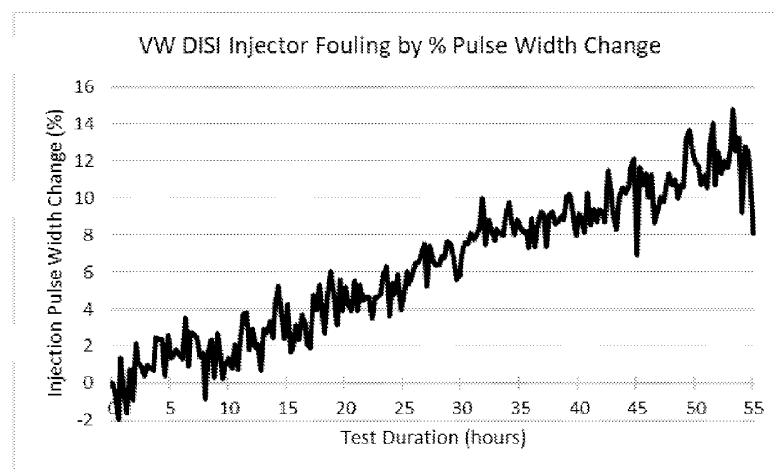


FIG. 1

(57) Abstract: Fuel additive compositions having at least one acylated detergent, at least one Mannich detergent, and at least one polyether and/or polyetheramine. The acylated detergent may be the reaction product of a hydrocarbyl-substituted acylating agent and a nitrogen containing compound having at least one amino group, that may optionally be quaternizable, and at least one oxygen or nitrogen atom capable of reacting with the hydrocarbyl-substituted acylating agent. The compositions are useful for reducing the formation of carbonaceous deposits and/or cleaning carbonaceous deposits in an engine, such as a gasoline direct injection engine.

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