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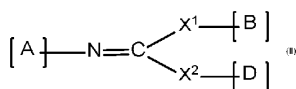
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(54) Title: FUEL ADDITIVE COMPOSITIONS AND METHODS FOR CONTROLLING CARBON DEPOSITS IN AN INTERNAL COMBUSTION ENGINES



(57) Abstract: Methods of controlling carbon deposits in an internal combustion engine with nitrogen-containing detergents are disclosed. The nitrogen-containing detergents are defined as or an acceptable salt thereof; wherein X^1 and X^2 are independently H, C, N, O, or S and wherein X^1 or X^2 independently includes one or more $C_2 - C_{20}$ alkyl group or one or more aromatic ring; wherein each A, B and D is selected from hydrogen, monovalent organic groups, and monovalent heterorganic groups in the form of groups or moieties that are bonded through a carbon atom; wherein any two or more of A, B and D optionally can be bonded together to form a cyclic structure; and wherein X^1 and X^2 optionally can be bonded together to form a cyclic structure; or one or more nitrogen-containing detergents selected from an aliphatic hydrocarbyl-substituted amine or a hydrocarbyl-substituted poly(oxyalkylene)amine. Fuel compositions and concentrate compositions comprising the nitrogen-containing detergents are also disclosed.

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