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Microemulsion diesel fuel compositions and method of use.

The present invention relates to translucent and thermodynamically stable fuel compositions having improved combustion efficiency and reduced smoke, particulate, CO, and NOx emissions. The fuel compositions comprise, for example, a diesel fuel, water, or an aqueous solution of a low molecular weight alcohol and/or a water-soluble reagent, and a surfactant system which comprises a balanced blend of one or more hydrophilic surfactants and one or more lipophilic surfactants, wherein the diesel fuel composition can contain as high as 30 weight percent of aqueous phase with an aqueous phase/surfactant ratio at least 2/1. The surfactant system may contain, in addition to the hydrophilic and lipophilic surfactants, cosurfactants and polar organic solvents. The reagent solution comprises aqueous solutions of an additive selected from the group consisting of inorganic oxidizing agents, low molecular weight polar organic oxidizing agents, and nitrogen oxide-containing compounds which act as cetane improvers and/or combustion modifiers. These additives offset the well-known loss in cetane number and/or the ignition delay caused by dispersed or microemulsified water and eliminate the need to change engine operating parameters.



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EUROPEAN SEARCH REPORT

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EP 91 30 7780

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
A	US-A-4 477 258 (LABOFINA) * claims 1-10 * ---	1,2	C10L1/32
A	DE-B-1 088 759 (ESSO) * claims 1,3,7 * * column 7, line 20 - line 30 * ---	1,2	
A	EP-A-0 209 758 (HULS AG) * claims 1,4,7 * ---	1,2,3	
A	EP-A-0 022 110 (BEROL KEMI AB) * claims 1,5,6 * -----	1,2,3,4, 5,6,7	
The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
			C10L
Place of search	Date of completion of the search	Examiner	
THE HAGUE	26 MAY 1992	OSWALD DE HERDT	
CATEGORY OF CITED DOCUMENTS		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document			

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