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(54) Title: METHOD AND COMPOSITION FOR USING STABILIZED BETA-CAROTENE AS CETANE IMPROVER IN HYDROCARBONACEOUS DIESEL FUELS

(57) Abstract: A diesel fuel additive is provided that includes beta-carotene stabilized with 2,2,4-trimethyl-6-ethoxy-1,2-dihydroquinoline. The additive may be added to any liquid hydrocarbon fuel, solid hydrocarbon fuel, or other hydrocarbonaceous combustible fuel to reduce emissions of undesired components during combustion of the fuel, provide improved fuel economy, engine cleanliness, and/or performance. A method for preparing the additive is also provided.

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US03/18282

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : C10L 1/14, 1/22
US CL : 44/307, 308, 324, 448, 449, 451

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
U.S. : 44/307, 308, 324, 448, 449, 451

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EAST; beta carotene, 2,2,4-trimethyl-6-ethoxy-1,2-dihydroquinoline, diesel fuel, gasoline fuel, nitrate

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 6,638,324 B2 (JORDAN) 28 October 2003 (28.10.2003), abstract, and claims.	1-30
Y	US 6,193,766 B1 (JORDAN) 27 February 2001(27.02.2001), abstract, Examples 1-2 and claims.	1-30
Y	US 5,826,369 A (JORDAN) 27 October 1998 (27.10.1998), abstract, Examples, Tables and claims.	1-30
Y	US 4,274,835 A (JORDAN) 23 June 1981 (23.06.1981), abstract, claims.	1-30
Y	US 4,839,188 A (WHEELER)13 June 1989 (13.06.1989), abstract; column. 1, lines 67-68 and claims	1-30
Y	US 5,891,491 A (OWENS et al) 06 April 1999 (06.04.1999), abstract.	1-30

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"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
31 January 2004 (31.01.2004)	26 FEB 2004
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