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- (81) **Designated States (unless otherwise indicated, for every
kind of national protection available):** AE, AG, AL, AM,
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CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO,

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HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR,
KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME,
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OM, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD,
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GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ,
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TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK,
EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV,
MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM,
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ML, MR, NE, SN, TD, TG).

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14 March 2013



WO 2012/163935 A3

(54) **Title:** LIQUID FUEL COMPOSITIONS

(57) **Abstract:** A liquid fuel composition comprising: (a) a base fuel suitable for use in an internal combustion engine; (b) a first fuel additive selected from one or more viscosity control agents having: (i) a kinematic viscosity at 100°C of 27 cSt or less; and (ii) a NOACK volatility at 250°C of 100 %wt or less; and (c) a second fuel additive selected from one or more friction modifiers. The present invention further provides a method of improving the fuel economy performance of an internal combustion engine, said method comprising fuelling an internal combustion engine containing an engine lubricant with a liquid fuel composition comprising: (a) a base fuel suitable for use in an internal combustion engine; (b) a first fuel additive selected from one or more viscosity control agents having: (i) a kinematic viscosity at 100°C of 27 cSt or less; and (ii) a NOACK volatility at 250°C of 100 %wt or less; and (c) a second fuel additive selected from one or more friction modifiers.

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2012/060085

A. CLASSIFICATION OF SUBJECT MATTER
INV. C10L1/14
ADD.
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)
C10L

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)
EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 707 058 A1 (AGIP PETROLI [IT]) 17 April 1996 (1996-04-17) page 2, line 11 - line 17; claims 1-8; examples 1,2 page 3, line 29 - line 35 -----	1-9, 13-15
X	EP 0 634 472 A1 (ETHYL PETROLEUM ADDITIVES LTD [GB]) 18 January 1995 (1995-01-18) page 1, line 1 - line 19; claims 1, 5, 9, 10, 16; examples 1,2 ----- -/--	1-10, 13-15

Further documents are listed in the continuation of Box C.

See patent family annex.

* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier application or patent but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
- "&" document member of the same patent family

Date of the actual completion of the international search

17 January 2013

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30/01/2013

Name and mailing address of the ISA/

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INTERNATIONAL SEARCH REPORT

International application No
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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	CHEVRON PHILLIPS COMPANY: "Safe Handling and Storage of Synfluid Polyalphaolefins (PAO)", 20080108 8 January 2008 (2008-01-08), pages 1-27, XP002600842, Retrieved from the Internet: URL: http://www.cpchem.com/bl/pao/en-us/Documents/PAO_2008_Rev_0.pdf [retrieved on 2010-09-23] page 6	1-10, 13-15
X	----- EP 0 947 576 A1 (CHEVRON CHEM CO [US]) 6 October 1999 (1999-10-06)	1-8, 11-15
Y	claims 1, 12,33; examples 1,2 -----	12
X	WO 02/079353 A1 (LUBRIZOL CORP [US]) 10 October 2002 (2002-10-10) claims 1, 4, 10, 15, 18, 19); tables 1,2 -----	1-4,7,8, 11-15
Y	US 4 920 691 A (FAINMAN MORTON Z [US]) 1 May 1990 (1990-05-01) column 3 - column 4 -----	12

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No PCT/EP2012/060085

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 0707058	A1	17-04-1996	AT 182611 T 15-08-1999
			AU 685990 B2 29-01-1998
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US 4920691	A	01-05-1990	NONE

INTERNATIONAL SEARCH REPORT

International application No.
PCT/EP2012/060085

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.
3. As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-10(completely); 13-15(partially)

A liquid fuel composition comprising a base fuel, a first fuel additive being a poly-alpha-olefin having a kinematic viscosity at 100°C of 27 mm²/s or less, and a noack volatility of 20 wt.-% or less and a second fuel additive selected from the list of friction modifiers. A method of improving fuel economy with this composition.

2. claims: 11, 12(completely); 1-8, 13-15(partially)

A liquid fuel composition comprising a base fuel, a first fuel additive being an ester having a kinematic viscosity at 100°C of 27 mm²/s or less, and a noack volatility of 20 wt.-% or less and a second fuel additive selected from the list of friction modifiers. A method of improving fuel economy with this composition.
