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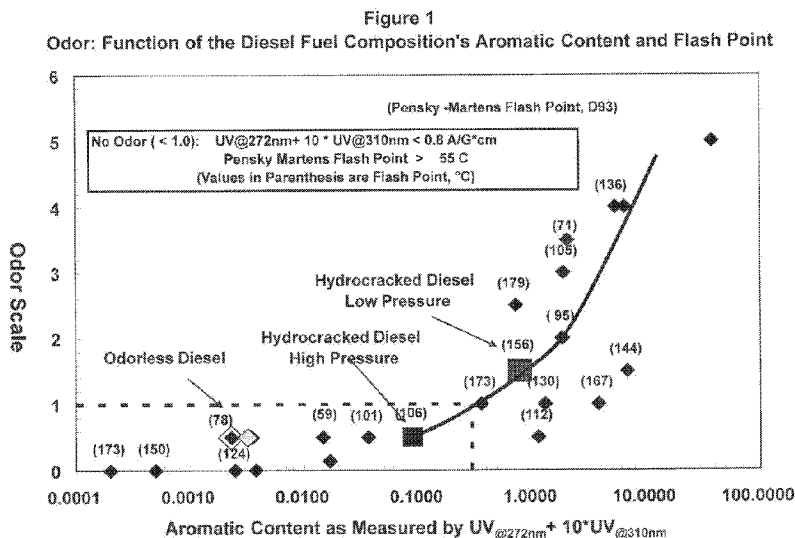
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Declarations under Rule 4.17:

[Continued on next page]

(54) Title: A DIESEL COMPOSITION AND METHOD OF MAKING THE SAME

(57) Abstract: A diesel fuel composition comprising a (1) sulfur content of less than 10 ppm; (2) a flash point of greater than 50°C; (3) a UV absorbance, A_{total} , of less than 1.5 as determined by the formula comprising $A_{total} = A_x + 10(A_y)$ wherein A_x is the UV absorbance at 270 nanometers; and wherein A_y is the UV absorbance at 310 nanometers; (4) a naphthene content of greater than 5 percent; (5) a cloud point of less than -12°C; (6) a nitrogen content of less than 10 ppm; and (7) a 5% distillation point of greater than 300 F and a 95% distillation point of greater than 600F.



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- *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))* — *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*
- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

(88) Date of publication of the international search report:

22 April 2010

Published:

- *with international search report (Art. 21(3))*

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2009/047385**A. CLASSIFICATION OF SUBJECT MATTER***C10L 1/08(2006.01)i, C10L 1/16(2006.01)i, C10L 1/22(2006.01)i, C10L 1/24(2006.01)i, C10G 45/06(2006.01)i, C10G 45/10(2006.01)i, C10G 65/02(2006.01)i*

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 1/08; C08L 95/00; C09D 195/00; C10L 1/18; C10L 1/22; C10L 1/24

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

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

(Chinese Patents and application for patent)

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) & Keywords: diesel fuel, odor, sulfur, suppress, UV absorbance, naphthene, aromatic

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 6461421 B1 (RONVAK; ALAN JEFFREY) 08 October 2002 See abstract, example1, claims	1-9, 15
A	US 2006-0207167 A1 (-) 21 September 2006 See abstract, summary of invention, claims	1-9, 15
A	US 2004-0010963 A1 (COLLIN W. CROSS et al.) 22 January 2004 See abstract, claims	1-9, 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 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

25 FEBRUARY 2010 (25.02.2010)

Date of mailing of the international search report

02 MARCH 2010 (02.03.2010)

Name and mailing address of the ISA/KR

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2009/047385

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:

- I. Claim 1-6, 15 and 7-9 relate to a diesel fuel composition, a method of using the composition and a process for preparing the composition which comprises four-step process.
- II. Claim 10 relates to a process for preparing a diesel fuel composition which comprises six-step process including separation unit.
- III. Claim 11-14 relate to a process for preparing a diesel fuel composition which consists of two-step process.

The inventions listed as groups I, II and III do not relate to a single general inventive concept under PCT Rule 13.1, because that they lack the same or corresponding technical features in that the preparing process is different from each other in every group of invention. This results in three distinct fields of search.

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 fee, this Authority did not invite payment of any additional fee.
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.: 1-9, 15

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.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2009/047385

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 6461421 B1	08.10.2002	AU 2000-78531 A1	30.05.2001
		CA 2391172 C	07.04.2009
		CA 2391172-A1	25.05.2001
		EP 1235768 A1	04.09.2002
		EP 1235768 A4	08.01.2003
		EP 1235768 B1	16.03.2005
		EP 1235768 B2	30.07.2008
		WO 01-36354 A1	25.05.2001
US 2006-0207167 A1	21.09.2006	AU 2005-211580 A1	05.10.2006
		DE 102005012807 A1	28.09.2006
US 2004-0010963 A1	22.01.2004	AU 2003-249351 A1	02.02.2004
		US 2005-0126073 A1	16.06.2005
		US 6872230 B2	29.03.2005
		WO 2004-007648 A1	22.01.2004