FUELS AND LUBRICANTS USING LAYERED BED CATALYSTS IN HYDROTREATING WAXY FEEDS, INCLUDING FISCHER-TROPSCH WAX, PLUS SOLVENT DEWAXING

Abstract: Waxy hydrocarbon feedstocks are contacted with a hydrocracking catalyst and the effluent then contacted with an intermediate pore size molecular sieve hydrotreatment catalyst. The effluent from the hydrotreatment is fractionated to provide a heavy fraction and a middle distillate fuel. At least a portion of the heavy fraction is dewaxed to provide a high quality lubricant base oil with a high viscosity index and a low pour point.
For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.
INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : C10G 65/12
US CL : 208/58, 950

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. : 208/58, 950

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)

Please See Continuation Sheet

C. DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
<thead>
<tr>
<th>Category</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>US 5,288,395 A (MARLER et al) 22 February 1994, see column 4, line 46 through column 5, line 51; column 6, lines 8-20; column 6, line 43 through column 7, line 37; column 8, line 43 through column 9, line 13; column 14, line 28 through column 15, line 16; column 15, lines 44-51; and column 24, line 44 through column 25, line 64.</td>
<td>1-6, 8-19, 21-28 and 30-32</td>
</tr>
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<td>Y</td>
<td>US 5,143,595 A (THOMAS et al) 01 September 1992, see column 1, line 65 through column 2, line 59.</td>
<td>1-6, 8-19, 21-28 and 30-32</td>
</tr>
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<td>Y</td>
<td>WO 02/070629 A1 (GERMAINE) 12 September 2002, see page 15, lines 7-19</td>
<td>7, 20, 29</td>
</tr>
</tbody>
</table>

Further documents are listed in the continuation of Box C.

See patent family annex.

Date of the actual completion of the international search

15 February 2005 (15.02.2005)

Date of mailing of the international search report

03 MAR 2005

Name and mailing address of the ISA/US

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Form PCT/ISA/210 (second sheet) (January 2004)
Continuation of B. FIELDS SEARCHED Item 3:
US-PGPUB; USPAT; USOCR; EPO; DERWENT; JPO

hydrocrack, hydroisomeriz, wax, middle, distillate, lube, lubricating, intermediate, pore, isomeriz