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**Datasheet for the decision
of 26 March 2008**

Case Number: T 0735/06 - 3.3.06

Application Number: 02720109.4

Publication Number: 1373437

IPC: C10G 25/00

Language of the proceedings: EN

Title of invention:
Process for treating fuel

Patentee:
BP OIL INTERNATIONAL LIMITED

Opponent:
-

Headword:
Treating fuel/BP OIL

Relevant legal provisions:
EPC Art. 56

Relevant legal provisions (EPC 1973):
-

Keyword:
"Inventive step - no (all requests): design options at the disposal of the skilled person"

Decisions cited:
-

Catchword:
-



Case Number: T 0735/06 - 3.3.06

D E C I S I O N
of the Technical Board of Appeal 3.3.06
of 26 March 2008

Appellant:

BP OIL INTERNATIONAL LIMITED
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Representative:

Perkins, Nicholas David
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Decision under appeal:

Decision of the Examining Division of the
European Patent Office posted 8 December 2005
refusing European application No. 02720109.4
pursuant to Article 97(1) EPC.

Composition of the Board:

Chairman: P.-P. Bracke
Members: G. Dischinger-Höppler
U. Tronser

Summary of Facts and Submissions

- I. This appeal is from the decision of the Examining Division to refuse the European patent application No. 02 720 109.4 (international publication number WO-A-02/079349) entitled "Process for treating fuel".
- II. The decision was based on the ground that the claimed subject-matter lacked an inventive step, inter alia, in view of the disclosure of document
- D5 JP-A-06 136 370 (patent abstract of Japan and computer translation)
- when combined with other documents.
- III. With its statement of grounds of appeal, the Applicant (hereinafter Appellant) filed, inter alia, amended sets of claims in a new main and auxiliary request. The Appellant argued that a skilled person had no motivation to combine document D5 with the other documents since those documents related to quite different technical fields.
- IV. In a communication annexed to the summons for oral proceedings held on 26 March 2008, the Board drew attention to document
- D8 JP-A-2001 131 565 (English translation provided by the Appellant during the Examining proceedings)
- as a relevant prior art.
- V. In response, the Appellant filed amended claims in a

new main and five auxiliary requests, all relating to a process for preparing decolourised gasoline.

Claim 1 of the main request reads:

"1. A process for preparing a decolourised gasoline which process comprises:

(a) blending appropriate components together to prepare a gasoline having a final boiling point of less than 200°C, a Reid Vapour Pressure of 30 to 110 kPa and a Saybolt colour rating of less than 10; and

(b) contacting the gasoline from step a as a whole with a decolourising, activated carbon;

to produce a decolourised gasoline product which has a Saybolt colour rating of greater than 20."

Claim 1 of the first auxiliary request differs therefrom by adding at the end of the claim the term ", in which the gasoline comprises gasoline detergent additive, at least some of which remains in the gasoline, or is added to the gasoline after treatment".

Claim 1 of the second auxiliary request differs from Claim 1 of the main request by adding at the end of the claim the term ", in which the gasoline comprises gasoline detergent additive, at least some of which is added to the gasoline after treatment".

Claim 1 of the third auxiliary request differs from Claim 1 of the second auxiliary request by replacing the term "(b) contacting the gasoline from step a as a whole with a decolourising, activated carbon" by the

following "(b) passing the gasoline from step a as a whole through a carbon filter bed comprising a decolourising, activated carbon to remove trace colouration and a monitor unit comprising an additional filter suitable for removing trace carbons and water".

Claim 1 of the fourth auxiliary request differs from Claim 1 of the first auxiliary request by replacing the term "a Saybolt colour rating of less than 10" by "an IP 17 yellow/blue rating of greater than 5 yellow/greater than 5 blue", inserting the term "acid washed," between "decolourising," and "activated" and by replacing the term "a Saybolt colour rating of greater than 20" by "an IP 17 yellow/blue rating of less than 5 yellow/less than 5 blue".

Claim 1 of the fifth auxiliary request differs from Claim 1 of the fourth auxiliary request by replacing the term ", in which the gasoline comprises gasoline detergent additive, at least some of which remains in the gasoline, or is added to the gasoline after treatment" by ", in which the gasoline comprises gasoline detergent additive, at least some of which is added to the gasoline after treatment".

VI. The Appellant, during oral proceedings and in writing, submitted in essence the following arguments:

The closest prior art was represented by a document relating to decolourisation of gasoline, such as document

D3 US-A-2 368 261.

The technical problem solved by the claimed subject-matter in view of this prior art consisted in the provision of an alternative process. Nevertheless, the claimed subject-matter was of considerable technical value since it allowed producing a decolourised aviation gasoline of top quality due to the reduced formation of engine deposits without requiring expensive distillation and addition of gasoline detergents. There was only document D5 pointing to the use of activated carbon for decolourisation, however not for gasoline but for diesel fuel wherein the colour was produced during desulphurisation. A skilled person would not expect that the process of document D5 could be suitable for decolouring gasoline since diesel and gasoline were not only quite different fuels but also differently treated for desulphurisation.

Therefore, the claimed process was based on an inventive step. The same applied all the more to the subject-matter claimed in the auxiliary requests due to further beneficial aspects of the invention.

- VII. The Appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of the claims according to any of the main or five auxiliary requests filed under cover of the letter dated 7 December 2007.

Reasons for the Decision

1. The Board is satisfied that the claims as amended in accordance with the new main and five auxiliary requests comply with the requirements of Article 123(2) EPC since their wording is supported by the application

as originally filed. Since the appeal fails for other reasons, there is no need to give further details.

As will be apparent from the assessment of inventive step below, the claimed process is novel in view of the available prior art.

2. *Inventive step (main request)*

2.1 The application in suit relates to a process for the removal of coloured species from gasoline (page 1, lines 1 to 2 and page 2, lines 10 to 14).

It is mentioned in the application that decolourisation of gasoline by means of suitable adsorbents like clay or acid clay is known in the art (page 2, lines 3 to 8).

Such prior art is e.g. represented in document D3, filed in 1943 and disclosing that clay activated by heating or by treatment with hydrochloric or sulphuric acid is suitable for removing all of the dye and at least 95% of the lead contained in a gasoline at that time (first column, lines 5 to 7 and 24 to 29 and second column, lines 24 to 26).

The application in suit also mentions document D5 as a relevant piece of prior art which discloses decolourisation of light oil by contact with activated carbon (see Patent abstract of Japan and application in suit page 2, lines 8 and 9).

However, while relating to light oil fractions suitable as fuel for internal combustion engines, this document - according to the computer translation - does not

mention gasoline. Instead, it is primarily conceived for decolourising diesel fuel (see computer translation page 1, paragraphs [0003] and [0008]).

3.2 The Board agrees, therefore, with the Appellant insofar as document D3 qualifies as the most suitable starting point for the assessment of inventive step since it is conceived for the same purpose as the application in suit, namely a process for decolourising gasoline.

3.3 The gasoline treated in accordance with document D3 is one containing dye and lead compounds, the latter being usual at the time of this document. No other properties of the gasoline are disclosed.

Considering, further, that according to document D3 all dye is removed by the treatment, the product must have a maximum Saybolt colour rating. Hence, the subject-matter of Claim 1 is distinguished from the process of D3 insofar as

- the gasoline to be discoloured by the claimed process is most probably unleaded and one having a final boiling point of less than 200°C, a Reid Vapour Pressure (RVP) of 30 to 110 kPa and a Saybolt colour rating of less than 10 and

- the treatment is carried out with activated carbon instead of activated clay.

3.4 Apart from the well-known effects obtained by providing unleaded gasoline, no evidence is on file concerning the technical problem actually solved by the other distinguishing features in view of document D3. This

was not disputed by the Appellant. Hence, the Board is not convinced that the benefits relied on by the Appellant (point V above) have been achieved in view of the process of document D3. Nor is the Board aware of any other technical result or effect achieved by these features than the provision of a further method of decolourising gasoline.

Therefore, the technical problem actually solved in view of document D3 has to be seen in providing an alternative process for decolourising gasoline.

3.5 It remains to be decided whether or not the claimed solution is based on an inventive step in view of the cited prior art.

3.6 Unleaded gasoline of the specific final boiling point of less than 200°C and a RVP of 30 to 110 kPa, is known in the art. This is evident from document D8 (page 7, paragraph [0018] and Table 1).

Using such gasoline in the process disclosed in document D3 is, therefore, a design option which a skilled person would consider in the expectation of providing an alternative process.

The Board has not overlooked that document D8 does not disclose the Saybolt colour rating of this gasoline. This feature, together with the Saybolt colour rating of the product, indicates the efficiency of the colour removal. As conceded by the Appellant during oral proceedings, it is within the knowledge of those skilled in the art how to control the extent of colour

removal by adsorption, inter alia by varying the process conditions like the contact time.

Hence, the feature concerning the colour rating of the starting fuel and the product fuel cannot contribute to inventiveness.

The second distinguishing feature, i.e. using activated carbon instead of activated clay for the adsorption of the coloured matter from gasoline, is not per se mentioned in the available prior art. However, it is already recognised in the application as filed that there exists specific activated carbon which is decolourising and that activated carbon has been described for decolourising asphalt-kerosene solution (page 3, last paragraph and page 2, lines 1 to 2). In addition, activated carbon has been described in document D5 for decolourising light oil suitable as fuel for internal combustion engines, in particular diesel light oil (page 1, paragraphs [0003] and [0008] of the computer translation).

The Board is, therefore, of the opinion that a skilled person would consider decolourising activated carbon as a possible substitute for the activated clay used in document D3 for colour adsorption from gasoline.

- 3.7 The Appellant argued that a skilled person would not expect that the adsorbent used according to document D5 with diesel oil would also be suitable with the gasoline of document D3 since not only the fuels were different but also the colouring components.

In particular, the Appellant was of the opinion that a skilled person would understand the term "light oil" used in document D5 as meaning diesel oil but not gasoline. In addition, the coloured material in this diesel oil resulted from a preceding severe desulphurisation and was different to the coloured species contained in desulphurised gasoline.

Further, the coloured material contained in the gasoline treated according to document D3 was not the same as in document D5 since it was a dye added to the gasoline together with the lead.

- 3.8 It is noted that the coloured species to be removed by the claimed process are not identified in Claim 1. However, the Board is of the opinion that it is irrelevant in the present case whether this material is different to the coloured material present in the fuel treated in accordance with documents D3 or D5 since a person skilled in the art would expect that a decolourising activated carbon is in any case suitable for decolourising liquid fuels (see also point 3.6 above).

Further, the Board is not convinced by the Appellant's argument that the term "light oil" is used in the technical field of fuel compositions only in relation of diesel oil since document D8 which relates to the preparation of automotive gasoline compositions mentions the possibility to prepare such gasoline from light oil cuts (page 7, paragraph [0018]).

Therefore, the Board is rather convinced that no prejudice exists in the art which would have prevented

a skilled person from applying the process of document D5 to gasoline in the expectation to provide another process for decolourising gasoline than that disclosed in document D3. On the contrary, it is considered that a person skilled in the art would rather be inspired by document D5 to apply that process also to gasoline since it relates to the decolourisation of light oil suitable as fuel in internal combustion engines in general (paragraph [0008]), and since it is well known in the art that internal combustion engines may be designed for being operated with diesel oil or with gasoline.

3.9 The Board concludes, therefore, that using in the process disclosed in document D3 instead of activated clay and leaded gasoline decolourising activated carbon as disclosed in document D5 and a gasoline having a final boiling point and a RVP as disclosed in document D8 and having a colour content which translates into a low Saybolt colour rating of less than 10 are all design options at the disposal of a person skilled in the art seeking to provide an alternative to the method disclosed in document D3.

3.10 For these reasons, the Board concludes that the subject-matter of Claim 1 is not based on an inventive step as required by Article 52(1) EPC in combination with Article 56 EPC.

4. Auxiliary requests

4.1 The subject-matter claimed in the auxiliary requests differs from that of the main request or one of the respective higher ranking request in that detergent

additive remains in the gasoline (first auxiliary request) or is added to the gasoline after treatment (second auxiliary request), in that a second filter is used for removing trace carbons and water (third auxiliary request), and in that the activated carbon is acid washed and the gasoline before and after treatment is specified by a specific IP 17 yellow/blue rating instead of a specific Saybolt colour rating as well (fourth and fifth auxiliary request) whereby the fourth and fifth auxiliary requests differ from each other in the same way as the first and second auxiliary requests.

- 4.2 The Appellant conceded that the specific IP 17 yellow/blue rating was simply another colour rating than the Saybolt colour rating but argued that the other newly introduced features further distinguished the claimed subject-matter from the prior art and provided additional advantages such as further reduction of deposits by the presence of detergent additives, production of higher valuable gasoline by removing trace carbon and water with a second filter and or the advantages obtained by using a carbon which is activated by acid washing.

However, the Appellant did not deny that all those features and their advantages were known in the art (see e.g. in document D8, page 8, paragraph [0020]; in the application in suit, page 3, lines 28 to 30).

- 4.3 The Board, therefore, concludes that no inventive step can be based on any of those features so that the subject-matter claimed in none of the auxiliary requests complies with the requirements of Articles 52(1) and 56 EPC.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:

G. Rauh

P.-P. Bracke