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**Datasheet for the decision
of 10 October 2006**

Case Number: T 0643/04 - 3.3.06

Application Number: 95200281.4

Publication Number: 0668342

IPC: C10G 65/04

Language of the proceedings: EN

Title of invention:

Lubricating base oil preparation process

Patentee:

SHELL INTERNATIONALE RESEARCH MAATSCHAPPIJ B.V.

Opponents:

Chevron U.S.A. Inc.
EXXON MOBIL RESEARCH AND ENGINEERING COMP.,

Headword:

Lubricating base oil/SHELL

Relevant legal provisions:

EPC Art. 54, 56, 123(2)
EPC R. 57a

Keyword:

"Main request: novelty - no"
"First auxiliary request: inventive step - no"
"Second to fifth and seventh to ninth auxiliary requests:
amendments not occasioned by grounds for opposition"
"Sixth, tenth and eleventh auxiliary requests: disclaimer not
allowable"

Decisions cited:

-

Catchword:

-



Case Number: T 0643/04 - 3.3.06

D E C I S I O N
of the Technical Board of Appeal 3.3.06
of 10 October 2006

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Decision under appeal: Interlocutory decision of the Opposition
Division of the European Patent Office posted
26 March 2004 concerning maintenance of
European patent No. 0668342 in amended form.

Composition of the Board:

Chairman: P.-P. Bracke
Members: G. Dischinger-Höppler
A. Pignatelli

Summary of Facts and Submissions

I. This appeal is from the interlocutory decision of the Opposition Division concerning maintenance of European patent No. 0 668 342 in amended form on the basis of 28 claims according to the then pending second auxiliary request.

II. Two notices of opposition had been filed against the granted patent, wherein the Opponents sought revocation of the patent on the grounds of Article 100(a) EPC for lack of novelty and inventive step (Article 54 and 56 EPC). The oppositions were based, amongst others, on the following documents

D1 EP-A-0 515 256,

D2 EP-A-0 323 092,

D8 EP-A-0 321 303 and

D9 Senden et al., "Engineering Aspects of the Conversion of Natural Gas into Middle Distillates", NATO ASI SER SERE 225, 1992, pages 227 to 247.

During opposition proceedings, the Patent Proprietor filed, *inter alia*, experimental evidence under cover of a letter dated 11 November 2003.

III. The decision under appeal was based on the claims as granted as the main request and on amended claims according to a first and second auxiliary request.

Claim 1 of the main request reads:

"1. A process for the preparation of lubricating base oils comprising subjecting a waxy raffinate to a pour point reducing treatment, and recovering a lubricating base oil therefrom, which waxy raffinate has been prepared by contacting a hydrocarbon product with hydrogen in the presence of a hydroconversion catalyst, comprising a catalytically active metal having hydrogenation/dehydrogenation activity supported on a refractory oxide carrier, under conditions such that hydrocracking and hydroisomerisation of the hydrocarbon product occur to yield the waxy raffinate, wherein the hydrocarbon product has been prepared by:

(a) contacting a mixture of carbon monoxide and hydrogen with a hydrocarbon synthesis catalyst at elevated temperature and pressure to prepare a substantially paraffinic hydrocarbon wax; and

(b) contacting the hydrocarbon wax so-obtained with hydrogen in the presence of a hydrogenation catalyst at a temperature of between 100 and 300°C and under conditions such that the percent weight fraction of the feed boiling above 370°C which is converted to a fraction boiling below 370°C is below 10% to yield the hydrocarbon product."

Claims 2 to 29 refer to preferred embodiments of the process of Claim 1, the last one being directed to a "Process as claimed in any one of the preceding claims, characterised in that the pour point reducing treatment comprises a solvent dewaxing treatment or a catalytic dewaxing treatment".

Claim 1 of the then pending first auxiliary request differed from that of the main request in that the term "and not containing zeolite Y" had been inserted after "a refractory oxide carrier" and Claim 1 of the second auxiliary request includes in part (b) the following further feature between the terms "hydrogenation catalyst" and "at a temperature of":

"wherein the hydrogenation catalyst comprises from 30 to 70 parts per weight of nickel per 100 parts per weight of carrier material or from 0.05 to 2.0 parts by weight platinum per 100 parts per weight of carrier material".

IV. In its decision, the Opposition Division held that the amendments made to the auxiliary requests were allowable under Article 123(2) EPC, that the subject-matter claimed in the second auxiliary request was both, novel and inventive over the cited prior art and that the higher ranking requests (main and first auxiliary requests) were not allowable for lack of novelty. *Inter alia*, the subject-matter of Claim 1 of the main request was considered to be anticipated by Example 3 of D1.

V. This decision was appealed by the Patent Proprietor (hereinafter Appellant-Proprietor) who filed

- with a letter dated 15 July 2004, amended sets of claims according to a new first and second auxiliary request whilst maintaining the claims as granted as the main request and the claims of the second auxiliary

request held allowable by the Opposition Division as the third auxiliary request;

- with a letter dated 8 September 2006, experimental evidence and amended claims in nine new auxiliary requests whilst maintaining the previous first to third auxiliary requests as the tenth to twelfth auxiliary requests; and

- with a letter dated 3 October 2006,

D22 Römpps Chemie Lexikon, Franckh'sche Verlags-
handlung Stuttgart, 1981, pages 1293 to 1294.

VI. The decision was also appealed by the Opponents (hereinafter Appellant-Opponents) who filed, amongst others, the following new evidence:

D19 WO-A-92/01769 and

D21 Kirk Othmer, Encyclopedia of Chemical Technology, 3rd edition, vol. 11, John Wiley & Sons, New York, 1980, pages 473 to 478.

VII. Upon requests made by all parties, oral proceedings before the Board of Appeal were held on 10 October 2006, in the course of which the Appellant-Proprietor dropped its third auxiliary request and renumbered its then pending fifth auxiliary request as the third, the sixth as the fourth, the fourth as the fifth and the twelfth (i.e. the one held allowable by the Opposition Division) as the sixth.

Claim 1 of the first auxiliary request differs from that of the main request by the introduction of the term "comprising cobalt as a catalytically active metal" in part (a) between "synthesis catalyst" and "at elevated temperature".

Claim 1 of anyone of the second to fifth and seventh to ninth auxiliary requests has been amended, amongst others, by defining the pour point reducing treatment as "comprising contacting the waxy raffinate with hydrogen in the presence of a hydroisomerisation catalyst comprising a catalytically active metal selected from one or more Group VIII noble metals". In all these requests the last claim of the granted version was deleted.

Claim 1 of anyone of the tenth and eleventh auxiliary requests has been amended, amongst others, to contain the same term "and not containing zeolite Y" after "a refractory oxide carrier" as Claim 1 of the sixth auxiliary request (i.e. the one held allowable by the Opposition Division).

VIII. The Appellant-Proprietor, orally and in writing, submitted in essence the following arguments:

- The amendments made to the claims of the sixth, tenth and eleventh auxiliary requests were allowable under Article 123 EPC since the feature defining the absence of zeolite Y in the hydroconversion catalyst was based on the disclosure of the application as filed.

- The deletion of the last claim of the granted version from the claim sets of the second to fifth and seventh to ninth auxiliary requests was necessitated by the limitations made in Claim 1 of these requests to the feature concerning the pour point reducing treatment. It was, therefore, allowable under Rule 57a EPC.

- The subject-matter claimed in all requests was novel over the cited prior art. In particular, Example 3 of D1 did not cover the optional pre-treatment disclosed in D1 in advance to the hydroconversion over a hydrogenation catalyst at the claimed conditions whilst it was clear to the skilled reader of the patent in suit that the hydrogenation step in Claim 1 was performed separately from the hydroconversion step. In relation to the optional pre-treatment disclosed in D1, reference was made to D2.

- The subject-matter claimed in all requests was inventive over the cited prior art. For example, the using of a cobalt (Co) catalyst in the Fischer-Tropsch (FT) synthesis of a hydrocarbon product in combination with a hydrogenation step as claimed in the first auxiliary request was not hinted at in the prior art. It was apparent from the prior art that the purpose of hydrogenation in advance of hydroconversion was reduction of oxygenates in the feed in order to preserve the hydroconversion catalyst from poisoning. Since it was evident from D22 that the product obtained from a Co catalysed FT synthesis process contained only very small amounts of oxygenates, hydrogenation of this product was not obvious.

IX. The Appellant-Opponents, orally and in writing, submitted in essence the following arguments:

- The amendments made to the claims of the sixth, tenth and eleventh auxiliary requests were not allowable under Article 123(2) EPC since they contained an unallowable disclaimer against D1.

- The deletion from the claim sets of the second to fifth and seventh to ninth auxiliary requests of the last claim in the granted version was not occasioned by grounds of opposition and, therefore, not allowable under Rule 57a EPC, since the feature introduced into Claim 1 of these requests relating to pour point reduction by hydroisomerisation did not exclude solvent dewaxing as claimed in Claim 29 as granted as a further pour point reducing measure. Reference in this respect was made to D19.

- The subject-matter claimed in any request was neither novel over the cited prior art, for example over example 3 of D1, nor inventive. Concerning the main request, reference was made to D9 according to which hydrogenation was one of the functions performed during conversion of heavy paraffins obtained by FT synthesis. Concerning the first auxiliary request, reference was made to the general technical knowledge as represented in D22 and to the patent in suit as well as to D8, according to which the active metal in catalysts used for FT synthesis was normally any one of Co, Nickel (Ni), Iron (Fe) or Ruthenium (Ru).

X. The Appellant-Proprietor requested that the decision under appeal be set aside and the patent be maintained

as granted or on the basis of the claims according to auxiliary requests 1, 2 and 4 to 11 filed with letter of 8 September 2006 in the order as amended during oral proceedings (i.e. the fifth auxiliary request is now the third, the sixth auxiliary request is the fourth, the fourth is the fifth) or in the version as maintained by the Opposition Division as the sixth auxiliary request.

The Appellant-Opponents requested that the decision under appeal be set aside and the patent be revoked.

Reasons for the Decision

1. *Admissibility of amendments*

1.1 Second to fifth and seventh to ninth auxiliary requests

1.1.1 Rule 57a EPC provides that, without prejudice to Rule 87 EPC concerning national prior rights, the description, claims or drawings of a European patent may be amended, provided the amendments are occasioned by grounds for opposition specified in Article 100 EPC.

1.1.2 The claim sets of the second to fifth and seventh to ninth auxiliary requests have been amended by defining in Claim 1 the pour point reducing treatment as "comprising contacting the waxy raffinate with hydrogen in the presence of a hydroisomerisation catalyst comprising a catalytically active metal selected from one or more Group VIII noble metals" and by deleting the last claim of the granted version (i.e. Claim 29).

Since the amendments are not occasioned by national rights, it has to be examined whether they are occasioned by a ground of opposition specified in Article 100 EPC.

The amendment of Claim 1 concerning the pour point reducing treatment is an attempt to overcome objections under Articles 54 and 56 EPC raised by the Appellant-Opponents by limiting the scope of protection. It is, hence, occasioned by grounds of opposition according to Article 100 EPC.

The amendment of Claim 1 does not necessitate deletion of Claim 29 as granted under the provisions of Article 123(2) EPC since Claim 29 as granted is identical with original Claim 29 and dependent on Claim 21 as granted which is identical with original Claim 21, latter being dependent on original Claims 1 to 20.

1.1.3 The Appellant-Proprietor declared that Claim 29 as granted relating to a pour point reduction by solvent dewaxing had to be deleted because of the more limited description of the pour point reduction in Claim 1 by hydroisomerisation which made solvent dewaxing superfluous.

1.1.4 The argument is not convincing for the following reasons.

It is apparent from the description of the patent in suit that different pour point reducing treatments can be performed consecutively. Thus, it is stated in the patent in suit that pour point reducing treatments are

well-known in the art and include solvent dewaxing, catalytic dewaxing, hydroisomerisation and/or addition of pour point depressing agents (column 10, paragraph [0054]).

It may be true that pour point reduction by hydroisomerisation can be performed so that no further pour point reducing treatment is necessary. However, it is also true, as stated in the patent in suit (column 15, paragraph [0076]) and confirmed in D19 (page 4, line 33 to page 5, line 4 and page 8, line 33 to page 9, line 21) that the waxy raffinate may be treated by hydroisomerisation to an intermediate pour point and thereafter treated by other conventional dewaxing techniques, e.g. solvent or catalytic dewaxing, to obtain the final pour point.

- 1.1.5 Therefore, the amendment made in Claim 1 of the second to fifth and seventh to ninth auxiliary requests to a process wherein the pour point reducing treatment comprises hydroisomerisation does not necessarily exclude the additional treatment by solvent dewaxing or catalytic dewaxing covered by granted Claim 29.

The deletion of the last claim of the granted version is, thus, contrary to the provisions of Rule 57a EPC, unnecessary and inappropriate in relation to Article 100 EPC.

- 1.1.6 As a consequence, the second to fifth and seventh to ninth auxiliary requests are not admitted into the appeal proceedings.

- 1.2 Sixth, tenth and eleventh auxiliary requests
- 1.2.1 Claim 1 of any of the sixth, tenth and eleventh auxiliary requests has been amended to disclaim zeolite Y as a component of the hydroconversion catalyst.
- 1.2.2 It is uncontested that the disclaimer, unless disclosed in the application as filed, does not fulfil the criteria of allowability set out in G 1/03 (OJ EPO 2004, 413) since it neither restores novelty against state of the art under Article 54(3) and (4) EPC nor is an accidental anticipation nor disclaims subject-matter excluded from patentability under Articles 52 to 57 EPC (G 1/03, headnote 2.1).

Hence, it has to be assessed whether the disclaimer finds a basis in the application as filed.

- 1.2.3 The Appellant-Proprietor, in conformity with the decision under appeal, argued that the disclaimer was supported by the disclosure on page 4, lines 6 to 16 of the application as filed which, although sandwiched between passages relating to the prior art, referred to the claimed invention and not to the background art discussed in said prior art. The indicated passage reads as follows:

"A hydroisomerisation (or hydroconversion) process involves both hydrocracking of paraffinic hydrocarbons and isomerisation of linear paraffinic hydrocarbons to branched paraffinic hydrocarbons. If it is desired to prepare lubricating base oils, it is advantageous to minimise the hydrocracking activity and to maximise the hydroisomerisation activity. Nevertheless, some

hydrocracking activity is still required to crack the heaviest wax molecules to lower boiling products. A disadvantage of a highly active catalyst, such as a zeolitic catalyst like zeolite Y, is that normally the hydrocracking ability is still too high and the hydroisomerisation activity too low".

- 1.2.4 The Board observes in agreement with the Appellant-Opponents that this paragraph contains the information that zeolite Y is one of several catalysts where hydrocracking activity is normally too high and hydroisomerisation activity too low if lubricating base oils are to be prepared by hydroconversion.

The disadvantage mentioned in the last sentence of the above paragraph applies, therefore, not only to zeolite Y but to a group of catalysts having a particular activity profile.

If, as pointed out by the Appellant-Proprietor, the whole paragraph relates to the claimed invention, and the exclusion of zeolite Y is based on the disadvantage mentioned, it is illogical that Claim 1 in the amended form still covers hydroconversion in the presence of any other catalyst than zeolite Y of too high hydrocracking activity and too low hydroisomerisation activity.

Moreover, the application as filed points out a disadvantage also for hydroconversion catalysts comprising a refractory oxide carrier (page 5, lines 15 to 27). Nevertheless, in the application as filed no other hydroconversion catalysts are disclosed than those containing such carriers (page 12, lines 19

to 30) and the Appellant-Proprietor never intended to exclude such catalysts from the claims.

1.2.5 The Board is, therefore, of the opinion that it is not sufficient as a basis for a disclaimer that one or the other embodiment is mentioned as being disadvantageous and, in particular, that the application as filed does not contain any support for excluding specifically the presence of zeolite Y during hydroconversion. Instead, the Board agrees with the Appellant-Opponents that the disadvantages mentioned in the application as filed may as well be interpreted as disadvantages which are intended to be overcome by the claimed invention.

1.2.6 The Board concludes, therefore, that the disclaimer introduced into claim 1 of the sixth, tenth and eleventh auxiliary requests is not allowable under Article 123(2) EPC.

2. *Main request (claims as granted)*

2.1 In the decision under appeal, the Opposition Division rejected the Appellant-Proprietor's main request on the basis of the claims as granted for lack of novelty in view of Example 3 of D1.

2.2 D1 relates to a process for the preparation of base oils by catalytic hydroisomerisation of paraffins obtained by the FT synthesis process (page 2, lines 1 to 4) which process is illustrated in the examples (page 5, lines 11 to 12).

According to Example 3, a paraffinic hydrocarbon wax (see boiling point range) obtained by the FT synthesis

is subjected to hydroisomerisation at a temperature of 230°C or 260°C over a catalyst comprising platinum (Pt) on a mixture of zeolite Y and alumina (see Example 2) to produce a base oil having an intrinsic viscosity of above 150 and a pour point of below -12°C.

The Board is, thus convinced, and the Appellant-Proprietor did not contest, that Example 3 comprises step (a) of Claim 1 which corresponds to the above FT synthesis process and the hydroconversion mentioned in the first part of Claim 1 (see point III above).

- 2.3 Considering that the lubricating base oil obtained according to the process claimed in the patent in suit is characterised by an intrinsic viscosity of above 135 (page 2, paragraph [0001]) and the same pour point of at least -12°C (page 6, paragraph [0053]), no technical difference can be attributed to the definition in Claim 1 of the base oil as a lubricating oil.
- 2.4 The Opposition Division based its decision on the argument that Example 3 comprised a hydrogenation function as defined in step (c) of Claim 1 since it was a necessity for hydroconversion that the waxy feed upon contact with the catalyst was initially hydrogenated. Further, Example 3 also comprised a dewaxing function within the meaning of Claim 1 since dewaxing was implicit in the disclosure of D1.
- 2.5 The Appellant-Proprietor argued that it was apparent for the skilled reader of the patent in suit, that the entire effluent from the hydrogenation step (b) was sent to a hydroconversion step. Further, it was evident from the different functions for hydrogenation and

hydroconversion attributed to the catalysts in Claim 1 and from the definition in D1 and in the patent in suit of the zeolite-containing catalyst used in D1 as a hydroconversion catalyst that different catalysts were used in the two different steps. According to D1, this catalyst was not to be used for the disclosed pre-hydrogenation step.

Therefore, the claimed process did not comprise a continuous performance of hydrogenation and hydroconversion over one single catalyst.

In addition, D1 did not explicitly disclose the treatment conditions during the pre-hydrogenation, but it was implicit by reference to D2 that higher temperatures were applied for this purpose.

Moreover, it was apparent from the missing hydrogenation step that the FT charge used in Example 3 of D1 was a commercial wax already freed from oxygenates and not the product directly derived from the FT synthesis since it was recognised in D1 that hydrogenation was necessary to eliminate the oxygenates present in the FT wax.

Example 3 of D1 differed, therefore, from the process of Claim 1 in that it did not comprise a separate hydrogenation step over a different catalyst.

2.6 The Appellant-Proprietor's arguments are not convincing for the following reasons:

2.6.1 Whilst the Board agrees with the Appellant-Proprietor insofar as the description of the patent in suit

distinguishes between a hydrogenation stage (b), a hydroconversion stage and a pour point reducing treatment which preferably is a hydroisomerisation stage (page 5, paragraphs [0037] and [0038], page 6, paragraphs [0046] and [0053] and page 9, paragraph [0075]), it is observed that Claim 1 is not limited such that hydroconversion and pour point reducing hydroisomerisation are performed over separate catalysts, i.e. separately from hydrogenation.

- 2.6.2 In particular, Claim 1 defines the composition of the hydroconversion catalyst to comprise a catalytically active metal having hydrogenation/ dehydrogenation activity and to be suitable for hydrocracking and hydroisomerisation. The Board derives therefrom that the hydroconversion catalyst is suitable not only for hydroconversion but also for hydrogenation and pour point reducing hydroisomerisation. Claim 1 does not identify any other catalyst composition for hydrogenation or pour point reduction. Therefore, the different functions mentioned in Claim 1 do not necessarily characterise different catalysts.

This is corroborated by the description of the patent in suit where the catalysts suitable for the different stages are defined to comprise the same catalytically active metal, preferably Pt or Pd (palladium), on a silica and/or alumina containing catalyst carrier (page 5, paragraphs [0038] to [0040], page 6, paragraphs [0046] and [0047] and page 9, paragraph [0076]).

This is, further, confirmed by D9, a document concerning the commercial Shell Middle Distillate

Synthesis (SMDS) process comprising syngas manufacture from natural gas, heavy paraffin synthesis via the FT process to produce heavy paraffins (waxes) and heavy paraffin conversion (HPC) (page 227, abstract and page 229, point 2). In this document, it is stated that the HPC stage performs the following functions:

- hydrogenation of olefins in the FT product and removal of oxygen-containing compounds,
- hydroisomerisation and
- hydrocracking (page 244, lines 5 to 12).

2.6.3 The Appellant-Proprietor's argument that according to D1 a zeolite Y-containing catalyst would be unsuitable for hydrogenation is irrelevant with regard to Example 3 of D1. D1 merely indicates that this type of catalyst is not preferred in the disclosed optional pre-hydrogenation stage. However, such a stage is not carried out in the example.

On the other hand, nothing in D1 or in the patent in suit suggests that hydrogenation would not occur on a zeolite Y-containing catalyst when used for hydroconversion of paraffins. Nor did the Appellant-Proprietor contest that hydrogenation of the paraffins was a prerequisite for hydroconversion.

2.6.4 Concerning the Appellant-Proprietor's opinion in relation to the FT charge used in Example 3 of D1, the Board observes that the Appellant-Proprietor himself has cited D22 to argue that the content of alcohols, as the major representative of oxygenates, in the product

of the FT synthesis process may be low enough (see VIII above) for hydroconversion. Apart from that, no removal of oxygenates is mentioned in the example.

2.7 The Board is, thus, of the opinion that Claim 1 covers a situation where in step (b) hydrogenation, hydroconversion and pour point reducing hydroisomerisation take place at a temperature of between 100°C and 300°C on one and the same catalyst which may contain Pt, zeolite Y and alumina. This situation is, however, anticipated by Example 3 of D1 (2.2 above).

2.8 For the purpose of completeness, the Board wishes to note that due to the fact that Claim 1 does not necessarily comprise a pre-hydrogenation in a separate step as disclosed in D1 as an optional embodiment, the Appellant-Proprietor's reference to D2 in this respect is found to be irrelevant.

2.9 For all these reasons, the Board concludes that the subject-matter of Claim 1 is not novel in view of Example 3 of D1 (Article 54 EPC).

3. *First auxiliary request*

3.1 The subject-matter of Claim 1 differs from that of the main request in that it has been limited insofar as the hydrocarbon synthesis catalyst in step (a) comprises Co as a catalytically active metal.

3.2 The Board is satisfied that the amendments made to the claims of the first auxiliary request are admissible under Articles 84 and 123(2) (3) EPC and that the

claimed subject-matter is novel in view of the cited prior art. Since the appeal fails for lack of inventive step, it is not necessary to give further reasons in this respect.

3.3 *Inventive Step*

3.3.1 The Board agrees with the parties that D1 is a suitable starting point for the assessment of inventive step since it is concerned with the same object of providing a lubricating base oil of high intrinsic viscosity, preferably above 135, and a low pour point of preferably below -12°C (D1, page 4, lines 38 to 41) as the patent in suit (page 2, paragraph [0001] and page 6, paragraph[0053]).

3.3.2 D1 does not identify the composition of the FT synthesis catalyst to be used. The subject-matter of Claim 1 differs, therefore, from the disclosure given in Example 3 of D1 only in that it is specified that this catalyst contains Co as a catalytically active metal (see also point 2 above).

3.3.3 The Board observes that the FT synthesis catalyst in Claim 1 is not limited to Co as the only catalytically active metal but may contain substantial amounts of other metals suitable for this purpose.

3.3.4 Neither the patent in suit nor the experimental data filed during opposition (point II) and appeal proceedings (point V) contain evidence in relation to embodiments performed on Co-free catalysts. The Board notes, therefore, that nothing on file shows that a

particular effect is obtained if the FT synthesis catalyst contains Co.

- 3.3.5 Thus, the Board agrees with the opinion of the Appellant-Opponents that the technical problem credibly solved by the claimed subject-matter in view of Example 3 of D1 can be seen to consist in the provision of an alternative process for the preparation of lubricating base oils.
- 3.3.6 It remains to be decided whether, in view of the available prior art documents, it was obvious for someone skilled in the art to solve the above stated technical problem by the means claimed, namely by using a Co-containing catalyst for the FT synthesis process of step (a).
- 3.3.7 It is known from the prior art that only four metals are relevant as active ingredients in catalysts used for the FT synthesis process, namely Ni, Co, Fe and Ru (see D22, page 1293, D21, page 473 to page 474, line 6 and D8, column 1, lines 17 to 20).
- 3.3.8 The Appellant-Proprietor did not contest this fact but argued that there was no reason for the skilled person to consider a hydrogenation step if a Co-containing catalyst was used during the FT synthesis since the amount of oxygenates in waxes obtained from a Co-catalysed FT synthesis process was so small that no hydrogenation step prior to hydroconversion was necessary (point VIII above).

However, this argument is irrelevant in relation to Example 3 of D1 where no such pre-hydrogenation step is carried out.

3.3.9 Considering that those skilled in the art know about the catalyst systems useful in the preparation of FT synthesis waxes (3.3.7 above), the Board is of the opinion that one option which a skilled person would adopt in the expectation of providing an alternative process to that disclosed in Example 3 of D1 is to select the catalyst to be used amongst those which are most suitable for this purpose. It is, therefore, obvious to select an FT catalyst containing anyone of above mentioned four metals Ni, Co, Fe and Ru.

3.3.10 The Board concludes, therefore, that the selection of Co as a catalytically active metal in the FT synthesis catalyst is not based on an inventive step.

Consequently, the first auxiliary request must fail since the subject-matter of Claim 1 does not comply with the requirements of Articles 52(1) and 56 EPC.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The patent is revoked.

The Registrar:

The Chairman:

G. Rauh

P.-P. Bracke