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**Datasheet for the decision
of 6 October 2022**

Case Number: T 0289/19 - 3.3.02

Application Number: 13744498.0

Publication Number: 2880140

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C10N30/06, C10N30/00, C10N40/25

Language of the proceedings: EN

Title of invention:
LUBRICATING OIL COMPOSITION FOR INTERNAL COMBUSTION ENGINES

Patent Proprietor:
Shell Internationale Research Maatschappij B.V.

Opponent:
Infineum International Limited

Headword:

Relevant legal provisions:

EPC Art. 56, 83
RPBA 2020 Art. 13(2)

Keyword:

Sufficiency of disclosure

Inventive step

Amendment after summons - exceptional circumstances (no)

Decisions cited:

G 0003/14, T 0192/82, T 1437/09, T 0262/19

Catchword:



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Case Number: T 0289/19 - 3.3.02

D E C I S I O N
of Technical Board of Appeal 3.3.02
of 6 October 2022

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Decision under appeal: **Interlocutory decision of the Opposition
Division of the European Patent Office posted on
27 November 2018 concerning maintenance of the
European Patent No. 2880140 in amended form.**

Composition of the Board:

Chairman M. O. Müller
Members: P. O'Sullivan
R. Romandini

Summary of Facts and Submissions

- I. The appeal of the opponent (hereinafter appellant) lies from the decision of the opposition division according to which European patent 2 880 140 in amended form met the requirements of the EPC.
- II. The following documents *inter alia* were cited in opposition proceedings:
- D1: WO 01/72933 A2
 - D4: EP 0 953 629 A1
 - D5: GB 2 397 070 A
 - D6: WO 2011/073349 A1
 - D7: De Silva *et al.*, Tribol Lett (2011), 43:107-120
 - D8: US 2008/0171677 A1
- III. A notice of appeal was also filed by the patent proprietor (hereinafter respondent). The appeal was withdrawn with letter dated 1 April 2019.
- IV. In preparation for oral proceedings, scheduled according to the parties' requests, the board issued a communication pursuant to Article 15(1) RPBA 2020. Therein the board provided the preliminary opinion that the subject-matter of the main request was sufficiently disclosed, and involved an inventive step over D1 as closest prior art.
- V. With letter dated 28 September 2022, the appellant submitted *inter alia* new experimental evidence. This evidence had been submitted by the respondent as "D7" in the proceedings leading to decision T 262/19, and corresponded to the corrected examples of the patent in that case (EP 2 880 138 B1).

To avoid confusion with document D7 cited in the present proceedings, experimental evidence "D7" in T 262/19 is denoted D7' in the following.

VI. Requests relevant to the present proceedings

The appellant requested that the decision under appeal be set aside and that the contested patent be revoked in its entirety.

The respondent requested that the patent be maintained in the form found allowable by the opposition division, implying dismissal of the appeal (main request).

The respondent also requested:

- that certain submissions of the appellant in relation to sufficiency of disclosure not be admitted into the proceedings, and
- that D7' and the objection of lack of inventive step based thereon not be admitted into the proceedings.

VII. Claim 1 of the main request reads as follows:

*"A lubricating oil composition for internal combustion engines **characterised in that** it contains:*

(A) a base oil mixture comprising at least two base oils in different API (American Petroleum Institute) categories, the base oil mixture having a sulphur content of from 0.14 to 0.7 mass%, %CA in accordance with ASTM D3238 of from 0.9 to 5.0, and %CP in accordance with ASTM D3238 of 60 or more, and

(B) a monoglyceride with a hydrocarbon group having from 8 to 22 carbon atoms (a glycerine fatty acid ester with the fatty acid ester bonded to one of the three hydroxyl groups of the glycerine), wherein the monoglyceride has a hydroxyl value of from 150 to 300 mgKOH/g and is present at a level of from 0.3 to 2.0 mass% based on the total mass of the composition,

wherein the base oil mixture (A) incorporates a base oil classified as Group 1 by the API (American Petroleum Institute) with a kinematic viscosity at 100°C in the range of from 3 to 12 mm²/s, a viscosity index in the range of from 90 to 120, a sulphur content of from 0.03 to 0.7 mass%, %CA 5 or less according to ASTM D3238 and CP 60 or more according to ASTM D3238, and present at a level of from 25 to 50 mass% based on the total mass of the composition."

VIII. The appellant's submissions insofar as relevant to the present decision may be summarised as follows:

Interpretation - claim 1

- the reference in claim 1 to Group 1 base oils was to be interpreted as referring to all Group 1 base oils, and not merely those defined in claim 1.

Sufficiency of disclosure

- The invention defined in claim 1 was not disclosed in a manner sufficiently clear and complete for it to be carried out by the person skilled in the art.

Admittance - new evidence D7' and the objection of lack of inventive step based thereon

- Pursuant to Article 13(2) RPBA 2020, exceptional circumstances justified the admittance of experimental evidence D7' into the proceedings.

Inventive step (Article 56 EPC)

- The subject-matter of claim 1 lacked inventive step starting from D1 as closest prior art.

IX. The respondent's submissions insofar as relevant to the present decision may be summarised as follows:

Interpretation - claim 1

- Contested claim 1 did not exclude the presence in base oil mixture (A) of Group 1 base oils different from those defined in the claim.

The respondent's request not to admit certain submissions in relation to sufficiency of disclosure

- The appellant raised objections regarding sufficiency of disclosure which had not been included in the original grounds for opposition. Said objections were not to be admitted into the proceedings.

Sufficiency of disclosure

- The invention defined in claim 1 was disclosed in a manner sufficiently clear and complete for it to be carried out by the person skilled in the art. In particular, there was nothing in claim 1

which precluded the addition of base oils having a high sulphur content (of Group 1 and Group 5 for example) in order to reach the sulphur levels required by base oil mixture (A) in contested claim 1.

Admittance - new evidence D7' and the objection of lack of inventive step based thereon

- Experimental evidence D7' was not to be admitted into the proceedings pursuant to Article 13(2) RPBA 2020.

Inventive step (Article 56 EPC)

- The subject-matter of claim 1 involved an inventive step starting from D1 as closest prior art.

Reasons for the Decision

Main request

1. The respondent's request not to admit certain submissions in relation to sufficiency of disclosure

The respondent requested that certain submissions in relation to sufficiency of disclosure not be admitted into the proceedings on the grounds that the appellant "*continues to raise objections regarding the sufficiency of the patent-in-suit that were not included in the original grounds of opposition*" (reply, point 2.1, first paragraph). According to the respondent, these submissions were late filed and should not form part of the proceedings. The specific

submissions in question were not specified by the respondent.

The board decided to refuse the request not to admit said submissions into the proceedings. However, in view of the final decision in the respondent's favour (infra), there is no need for the board to provide its reasons in this regard.

2. Claim 1 - interpretation

2.1 Contested claim 1 (claim wording provided in VII, supra), in summary, is directed to a composition having the following feature:

(A) a base oil mixture comprising at least two base oils in different API categories, said mixture having:

- a sulphur content of 0.14 to 0.7 mass%,
- a %CA (aromatic carbons) of from 0.9 to 5.0, and
- a %CP (paraffinic carbons) of from 60 or more,

and

(B) a monoglyceride

- having a hydrocarbon group having from 8 to 22 carbon atoms
- having a hydroxyl value of from 150 to 300 mg KOH/g and
- and being present in 0.3 to 2.0 mass% based on the total mass of the composition,

wherein the base oil mixture (A) incorporates a Group 1 base oil with

- a kinematic viscosity at 100°C of 3 to 12 mm²/s
- a viscosity index of from 90 to 120,
- a sulphur content of from 0.03 to 0.7 mass%,
- a %CA of 5 or less
- a %CP of 60 or more, and
- is present at a level of 25 to 50 mass% based on the total mass of the composition.

2.2 During oral proceedings before the board, the appellant addressed the meaning and interpretation of claim 1, in particular in the context of sufficiency of disclosure.

2.3 In that regard it was a matter of dispute whether the composition of claim 1 was limited in that it could only comprise Group 1 base oils as defined therein by the parameters recited. Specifically, in the view of the appellant, the reference in claim 1 to Group 1 bases oils was to be interpreted as referring to **all** base oils of Group 1. Therefore, the claimed composition did not comprise any further Group 1 base oils in addition to those defined in the claim. Consequently, the total amount of all Group 1 base oils which may be present in the composition was limited to 25 to 50 mass% based on the total mass of the composition, as claimed.

2.4 The board disagrees with this interpretation. A claim is to be interpreted as it would be by the skilled person, that is, in a technically sensible manner, and should be given its broadest technically sensible meaning. As argued by the respondent, claim 1 requires the presence in the composition of a Group 1 base oil meeting specific parametric requirements defined therein, in an amount of 25 to 50 mass% based on the total mass of the composition. The only further restriction in claim 1 as far as base oils are

concerned is that the base oil mixture (A) comprises at least two base oils of different API categories, and meets specific parametric requirements defined therein (sulphur content, %CA and %CP). Hence while the claim requires the presence of at least one further base oil of a different API category to Group 1, it does not exclude the presence of further Group 1 base oils not meeting the parametric requirements for the Group 1 base oils defined in the claim.

2.5 The appellant also referred to paragraphs [0085] and [0086] of the patent to support its position. However, these paragraphs refer to the Group 1 base oils as defined in table 1 (page 11), which fulfill the parametric requirements recited in claim 1, and give no indication, either implicitly or explicitly, that further Group 1 base oils were to be excluded from the composition of claim 1. In any case, even if the opposite were to be true, and the description were to indicate that further Group 1 base oils were excluded, this would still not result in any kind of limitation being read into claim 1 itself.

2.6 Thus, neither the claim wording itself nor the parts of the description referred to by the appellant provide any justification for interpreting claim 1 in the limited manner argued by the appellant.

2.7 Contested claim 1 hence does not exclude the presence in base oil mixture (A) of Group 1 base oils different from those defined in the claim, as long as the parametric requirements defining base oil mixture (A) are met.

3. Sufficiency of disclosure

3.1 The appellant submitted that the invention defined in contested claim 1 was not sufficiently disclosed.

3.1.1 First, it was argued that the patent failed to teach how to achieve a base oil mixture (A) having a sulphur content in the recited range of from 0.14 to 0.7 mass%. Specifically, claim 1 also stipulated that the base oil mixture (A) incorporated a Group 1 base oil having a sulphur content in the range of 0.03 to 0.7 mass% in amounts up to a maximum of 50 mass% based on the total mass of the composition. In paragraphs [0032] to [0035] however, the patent taught that Group 2 and 3 base oils had sulphur contents of less than 0.03 mass%, and preferably even lower. Thus, the appellant argued, the patent failed to teach how embodiments of claim 1 using a maximum of 50 mass% Group 1 base oils having a sulphur content of below 0.14 mass%, but above 0.03 mass%, could lead to base oil mixtures (A) having the recited minimum claimed sulphur level of 0.14 mass%.

The board's view is as follows. Claim 1 requires the skilled person to prepare a base oil mixture (A) having a sulphur content of 0.14 to 0.7 mass%. If the skilled person were to use a Group 1 base oil having a low level of sulphur which did not, or could not lead to said mixture (A) meeting the required lower level of 0.14 mass% sulphur, then it would be a simple matter of changing to employing a Group 1 base oil having a sulphur content sufficiently high which, when combined with at least one further API Group base oil having a lower sulphur content, would lead to a base oil mixture (A) having the claimed level of sulphur. Alternatively, as noted by the respondent, said Group 1 base oil having a sulphur content below 0.14 mass% could be

combined with a further base oils having a higher sulphur content, such as further Group 1 base oils, or Group 5 base oils having a higher sulphur content.

The appellant's objection is therefore unconvincing, and cannot be accepted.

- 3.2 Second, in a line of argumentation submitted for the first time during oral proceedings before the board, the appellant argued that due to the range of 25 to 50 mass% of the specific Group 1 base oil recited in claim 1, the requirement for a specific sulphur content for base oil mixture (A) could not be achieved in the upper part of the range recited (0.14 to 0.7 mass%). Specifically, even assuming that the specified Group 1 base oil according to claim 1 was present in the maximum recited amount of 50 mass%, and had the maximum recited sulphur content of 0.7 mass%, it would still only provide a maximum of 0.35 mass% sulphur to the final composition (by virtue of its presence at only 50 mass%). Preparing a base oil mixture (A) having a sulphur content higher than 0.35 mass%, up to the upper limit of 0.7 mass%, could also not be achieved by employing Group 2, or Group 3 base oils, because they comprised less than 0.03 mass% sulphur, as demonstrated in D8 (table 1, page 3). Further D5 (page 3, lines 16 - 19), in which it was stated that "*... conventional petroleum derived base oils ... typically contain between 10 and 5000 ppm total sulfur*", demonstrated that conventional base oils would only provide a sulphur content of maximum of 5000 ppm, i.e. 0.5 mass%, and hence would still not allow preparation of a base oil mixture (A) having a sulphur content in the upper part of the range recited.

Hence, the appellant concluded, the invention defined in claim 1 was not sufficiently disclosed insofar as it was directed to a composition comprising a base oil mixture (A) having a sulphur content above 0.35 mass%.

- 3.3 The board disagrees. As stated above, the proper interpretation of claim 1 does not exclude the presence of Group 1 base oils different from those defined therein. According to D8 (table 1) cited by the appellant in its arguments, Group 1 base oils were defined as having a sulphur content of greater than 0.03%. However, no upper limit is defined. As noted by the respondent, there is no evidence that further Group 1 base oils different from those defined in the claim and having a sulphur level higher than 0.7 mass% did not exist. Such base oils could thus be employed if required. Furthermore, as also noted by the respondent, in contrast to Group 1, 2 and 3 base oils, Group 5 base oils were not defined by their sulphur content, and hence may have a higher sulphur content. Therefore, the skilled person, if necessary, could also employ such a Group 5 base oil to increase the sulphur content of the base oil mixture (A) to above 0.35 mass%.

Finally, the statement in D5 that base oils "typically" have a sulphur content of up to 0.5 mass%, does not constitute evidence that base oils having a higher sulphur content do not exist. Indeed, the board notes in this regard that the patent itself employs Group 1 base oils having a higher sulphur content than 0.5 mass% (e.g. Base oils 5 and 6, table 1, page 11).

Therefore, the appellant's submission that the skilled person would have been unable to prepare a composition comprising a base oil mixture (A) having a sulphur content in particular in the upper end of the claimed

range, is no more than an unsupported allegation, and hence must fail.

- 3.4 Thirdly, the appellant submitted, in the context of the board's interpretation of claim 1, that if more than one Group 1 base oil were employed to prepare a composition according the claim 1, it would not be possible to determine whether a given composition fell within the scope of the claim or not, and hence a lack of sufficient disclosure arose.

The board disagrees. In order for the requirements of sufficiency of disclosure to be fulfilled, the skilled person must be able to prepare a composition according to contested claim 1. As stated above, there is no evidence that this cannot be achieved. As set out by the board during the oral proceedings, the question of whether the skilled person can determine whether a given composition falls within the scope of the claim is at most a clarity issue. Clarity is however not open to examination in view of the fact that claim 1 constitutes a combination of granted claims 1 and 2 (G 3/14, OJ EPO 2015, A102).

- 3.5 It follows that the invention defined in contested claim 1 is disclosed in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art.

4. Admittance - new evidence D7' and the objection of lack of inventive step based thereon

- 4.1 With the letter dated 28 September 2022, received approximately 1 week before oral proceedings before the board, the appellant submitted *inter alia* experimental evidence D7'.

D7' is a tabulated summary of the (corrected) examples of EP 2 880 138 B1, the patent underlying the case in decision T 262/19, in which it was denoted as D7 (Facts and Submissions, II, supra). It was submitted by the appellant in the present proceedings to demonstrate that lubricating oil compositions, differing from those of contested claim 1 in that they did not contain a Group 1 base oil component, did not show a problem in emulsion stability. Therefore, according to the appellant, for at least some embodiments falling under the scope of contested claim 1, the addition of a Group 1 base oil, compared to an equivalent oil composition in which it was not present, did not result in any further improvement in emulsion stability. The objective technical problem underlying contested claim 1 hence had to be reformulated in less ambitious terms, i.e. as the provision of a mere alternative composition.

- 4.2 The respondent requested that D7' and the objection of lack of inventive step based thereon, summarised above, not be admitted into the appeal proceedings.
- 4.3 The board's view is as follows. The appellant introduced D7' in its letter dated 28 September 2022 in the context of decision T 262/19 in which it was cited, and applied the line of argumentation used in the context of inventive step in that decision to the present case by analogy. The introduction of evidence D7' into the present proceedings hence constitutes a new inventive step objection based on new evidence, namely D7', rather than a legal argument based on T 262/19. The appellant's appeal case was thus amended by the submission of D7'.

4.4 During oral proceedings before the board, the appellant accepted that the admittance of such an amendment into the proceedings was subject to the requirements of Article 13(2) RPBA 2020. However, the appellant argued that in the present case there were exceptional circumstances within the meaning of that provision which justified the admittance of the new evidence and the related new objection. This opinion was based on three arguments.

4.5 First, the appellant submitted that the decision in T 262/19 had been issued in writing only on 20 June 2022, such that it could only have become aware of the relevance of D7' to the present proceedings after that date. The submission of D7' within approximately 4 months of the issuance of that decision was therefore justified.

The board does not consider this argument convincing. The date of issuance of decision T 262/19 is not relevant to the admittance of D7'. Rather, D7' was cited during the proceedings leading to decision T 262/19: it was thus available and known to the appellant, which was also appellant in that case, long before the issuance of said decision, and in particular, before the summons to oral proceedings were issued in the present case.

4.6 Second, the appellant submitted that the submission of D7' was a reaction to the board's preliminary view on inventive step, expressed in the communication pursuant to Article 15(1) RPBA dated 8 August 2022, sent in preparation for oral proceedings. The submission of D7' within approximately 2 months of the issuance of said communication was therefore justified.

However, as explained by the board during oral proceedings and not contested by the appellant, the board in its communication merely reiterated and followed the view of the respondent submitted with the reply to the statement of grounds of appeal. Hence, it also cannot justify the late submission of D7' by the appellant.

- 4.7 Third, the appellant submitted that the data set out in D7' was already known to the respondent, and partially to the board from the proceedings leading to decision T 262/19. Hence, the submission of D7' and the inventive step objection based thereon should not have come as a surprise.

The present proceedings are however entirely separate and distinct from the proceedings in decision T 262/19. Therefore, the fact that D7' was considered in those proceedings, cited in said decision and known to both the respondent and partly to the board, does not imply that its introduction into the present proceedings should not have been surprising. Indeed, the appellant itself submitted during oral proceedings before the board that it had only realised the relevance of the "fact scenario" concerning D7' during its preparations for the oral proceedings before the board. Having only occurred to the appellant shortly before oral proceedings, it is thus contradictory to argue that the introduction of D7' and the objection based thereon should not have come as a surprise to the respondent.

- 4.8 For the above reasons the board decided pursuant to Article 13(2) RPBA 2020 not to admit D7' into the proceedings.

5. Inventive step (Article 56 EPC)

5.1 Background

5.1.1 According to the patent, modern vehicles having an idle-stop function tend to accumulate water in the lubricating oil during short trips, generated by combustion of the fuel in the engine, since the trip is over before the oil heats sufficiently for the water to evaporate and be expelled. Water droplets form which mix with the lubricating oil (paragraph [0002]). A similar effect is observed with biofuels, which tend to generate more water upon combustion (paragraphs [0003] - [0006]).

5.1.2 Ashless friction modifiers such as monoglycerides are added to engine lubricating oils to reduce friction between metals in the engine and thereby improve economy (paragraph [0008]).

5.1.3 According to the patent, it was established that when base oils of API Groups 2, 3 and 4 were used in combination with monoglycerides of a specific structure, water separability increased, leading to lubricating oils which did not comply with the required standards (paragraph [0019]). Such deposited water (i.e. non-dispersed, separated water) could in particular induce rusting or corrosion by coming into contact with the engine parts (paragraph [0010]).

5.1.4 According to the patent, the lubricating oil compositions of the invention overcame this problem in that as well as providing less friction and thus higher wear resistance and economy, they also had the capacity to disperse condensed water into the oil as a stable

emulsion, thereby preventing corrosion or rusting (paragraph [0026]).

5.2 Closest prior art

5.2.1 According to the contested decision, the closest prior art was represented by D7. Starting from D7, the subject-matter of contested claim 1 involved an inventive step.

5.2.2 With the statement of grounds of appeal, in line with its submissions in opposition proceedings, the appellant submitted that D1 also represented a suitable starting disclosure for the assessment of inventive step. The claimed subject-matter lacked inventive step starting from the disclosure in D1, in combination with one of D4, D5 or D6.

5.2.3 The respondent argued that D1 did not represent the closest prior art, and that arguments starting therefrom were therefore irrelevant.

5.2.4 The board agrees with the appellant that D1 may serve as a starting point in the assessment of inventive step of the subject-matter of contested claim 1. Similar to the contested patent, D1 concerns a lubricant oil aimed at reducing overall friction in the engine, thereby reducing energy and fuel requirements (D1, page 1, lines 6-10). This is achieved in D1 using the same friction modifier recited in contested claim 1, namely a monoester of glycerol and a carboxylic acid containing 12 to 20 carbon atoms (D1, page 2, lines 7-10), such as oleic acid (D1, page 3, line 27 - page 4, line 2), corresponding to the glycerine monooleate used as the friction modifier in the examples of the contested patent, and therefore necessarily having the

same intrinsic properties recited for the monoglyceride component (B) of contested claim 1.

- 5.2.5 At least for this reason, D1 may serve as suitable starting point in the assessment of inventive step.

Furthermore, the board does not consider it relevant whether D1 is a "closer" prior art document than D7 as argued by the appellant. In agreement with T 1437/09, cited by the appellant (reasons, 3.1, third paragraph), the board is of the view that *"if there are several different prior art documents, each of which might plausibly be taken as starting point for the assessment of inventive step, it is established case law that inventive step be assessed relative to all these pieces of prior art before any decision confirming inventive step is taken"*.

It is thus sufficient to conclude that the assessment of inventive step of contested claim 1 may reasonably start from the disclosure in D1.

5.3 Distinguishing features

D1 discloses a lubricating oil composition comprising a major amount of an oil of lubricating viscosity, and a monoester of glycerol corresponding to component (B) of contested claim 1 (D1, claim 1; page 2, lines 17-21). D1 does not identify the "oil of lubricating viscosity" in any more detail, in particular, no further information is provided with regard to its composition or its properties.

It was not disputed that the subject-matter of contested claim 1 is distinguished from the disclosure in D1 in that the latter does not disclose a base oil

mixture (A) as defined in contested claim 1. Claim 1 therefore defines a specific selection from the generic disclosure of D1.

5.4 Problem solved

5.4.1 The examples of the patent provide test data for various different lubricant oil compositions (table 2, pages 12-15). According to table 1 (page 11), the "base oils" comprised within the various compositions (table 2, third to ninth rows on page 12)

- numbered 1, 2 and 7 are Group 3 base oils,
- numbered 4, 5 and 6 are Group 1 base oils, and
- numbered 3 is a Group 2 base oil.

5.4.2 The composition of comparative example 1 comprises Group 3 and 2 base oils, no Group 1 base oil and no monoglyceride according to contested claim 1 (row entitled "glycerin monooleate"), and shows no water separation in the emulsification tests (the last row of the "comp Ex 1" column on page 12 should read "no separation" - see paragraph [0081] of the patent). Lacking glycerine monooleate however, it has a high friction coefficient (table 2 on page 13, final row).

5.4.3 In the compositions of comparative examples 2-6, glycerine monooleate is added. These compositions differ from the composition of contested claim 1 in that they do not include a base oil mixture (A) as defined in the claim. Comparative examples 2 and 3 comprise only base oils of Groups 2 and 3, while comparative example 4 comprises only Group 3 base oils. Comparative examples 5 and 6 comprise, in addition to a Group 3 base oil, a Group 1 base oil in amounts of 10 and 20 mass%, respectively.

Hence, comparative examples 2-4 do not contain any Group 1 base oil as required by contested claim 1. Furthermore, although a Group 1 base oil is present in comparative examples 5 and 6, the amount thereof is below the lower limit of the range recited in contested claim 1.

Although comparative examples 2-6 demonstrate an improvement in friction coefficient compared with the composition of comparative example 1 not comprising glycerine monooleate (table 2, page 13, final row), water separation was observed in the emulsification tests at 25°C (final row of table 2 on pages 12 and 14).

5.4.4 In contrast, the lubricating compositions of examples 1-4 (table 2, page 14) comprising 28, 30, 40 and 25.22 mass% of Group 1 base oils respectively (in combination with a Group 3 base oil), all demonstrate no separation in the emulsification tests (page 14, final row), while the low friction coefficient demonstrated in comparative examples 2-6 is maintained (page 15, final row).

5.4.5 Hence, at least for the compositions of the examples, it has been demonstrated that the addition of a Group 1 base oil as defined in claim 1, and in the amount recited, leads to improved emulsion stability, i.e. less water separation in the lubricant composition concerned, while maintaining a low friction coefficient.

5.4.6 The appellant did not dispute that an effect was demonstrated by the examples in the patent, but argued that said examples were not sufficient to extrapolate said effect across the entire scope of contested claim

1. Specifically, the data in the examples according to the invention demonstrated an effect only for compositions having a combination of two specific base oils, namely those of Groups 1 and 3. On the other hand, contested claim 1 was very broad in scope, in particular in view of the fact that, as concluded by the board (supra), it did not exclude the presence in base oil mixture (A) of Group 1 base oils different from those defined therein, as well as compositions comprising a combination of the Group 1 base oils recited in claim 1 with any further API classified base oils suitable for use in internal combustion engines.

5.4.7 According to the appellant, this argument in itself was sufficiently persuasive to discharge the appellant's burden of proof in this regard. Hence, it submitted at oral proceedings that the objective technical problem was the provision of alternative lubricating composition to that of D1.

5.4.8 The board disagrees. As set out above, examples 1-4 of the patent demonstrate that when a Group 1 base oil as defined in contested claim 1 is included in the lubricant composition within a certain mass percentage range, water separation (de-emulsification) can be avoided while low friction is maintained. In the absence of any technically credible argument or evidence to the contrary, the mere fact that contested claim 1 may be considered broad is not sufficient reason to doubt that the technical effect underlying the examples would reasonably be demonstrated across the scope of the claim. The burden of proof in this regard hence remains with the opponent.

5.4.9 The appellant also argued that there was no evidence that the specific Group 1 base oils defined by a

particular subset of parameters in contested claim 1 had any technical effect.

However, as set out above, the examples of the patent reasonably demonstrate a technical effect linked to the distinguishing feature of contested claim 1 over the disclosure in D1. Since there is neither evidence nor credible argument supporting the appellant's allegation, it must fail for this reason alone.

Hence, said technical effect is accepted across the scope of contested claim 1.

5.4.10 The objective technical problem underlying the subject-matter of claim 1 is thus essentially as formulated by the respondent, namely the provision of a lubricating oil composition that can be used in conditions where increased levels of water may be present without water/oil separation occurring, while maintaining an adequate frictional response (i.e. a low friction coefficient).

5.5 Obviousness

5.5.1 The appellant argued that the use of a Group 1 base oil would have been obvious to the skilled person wishing to solve the above-mentioned problem. Specifically, sulphur compounds present in Group 1 base oils possessed higher polarity, thereby rendered the base oil itself less hydrophobic in nature, and thus more hydrophilic and favourable to the coexistence of water. The use of Group 1 base oils according to claim 1 therefore simply demonstrated the obvious application of a known chemical principle.

The board disagrees. This argument is based on a hindsight view taken with prior knowledge of the

invention and represents an oversimplification of the issue at hand. In particular, even assuming the skilled person would recognise Group 1 base oils as having increased polarity by virtue of their sulphur content, no evidence nor pointer in the prior art has been provided demonstrating that the skilled person would consider said oils suitable for solving the above-mentioned problem. Specifically, there is no evidence that the skilled person would have known that increasing oil polarity would automatically imply decreased water separation or increased emulsion stability, while at the same time maintaining an adequate frictional response.

- 5.5.2 The appellant also submitted that starting from D1 it was obvious to use conventional base oils such as the Group 1 base oils as defined in contested claim 1, for the purpose of reducing friction and improving fuel economy. The effect of achieving less water separation was then to be regarded as a mere bonus effect, which could not support inventive step.

A bonus effect however generally only arises when the skilled person is confronted with a lack of alternatives leading to a "one-way street" situation (see for an example T 192/82, OJ 1984, 415, Reasons, point 16). Such a situation does not arise in the present case in which the skilled person, wishing to reduce friction and improve fuel economy, would have had the possibility to combine many different base oils in varying amounts, and not only in the claimed combination.

- 5.5.3 Finally, in relation to the appellant's argument set out above that the parameters defining the Group 1 base oil in claim 1 had no technical effect, it was

submitted that the skilled person would have turned to conventional Group 1 base oils to solve the problem, such as those disclosed in D5 (e.g. page 4, lines 24-32).

However, there is no evidence for the appellant's allegation that a technical effect is not obtained (see above, point 5.4). Hence, the starting point for the appellant's argument, namely the absence of such an effect, is incorrect. Hence, it must fail for this reason alone.

5.6 It follows that the subject-matter of the set of claims of the main request involves an inventive step pursuant to Article 56 EPC.

The main request is thus allowable.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:



M. Schalow

M. O. Müller

Decision electronically authenticated