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**Datasheet for the decision
of 23 January 2013**

Case Number: T 0105/10 - 3.3.06

Application Number: 95942145.4

Publication Number: 743973

IPC: C10L 1/18

Language of the proceedings: EN

Title of invention:

Fuel oil composition containing polyoxyalkylenes

Patent Proprietor:

Infineum USA L.P.

Opponents:

Clariant Produkte (Deutschland) GmbH
INNOSPEC LIMITED

Headword:

Fuel with lubricity enhancers/INFINEUM USA

Relevant legal provisions:

EPC Art. 56, 123(2), 54

Keyword:

"Inventive step (all requests refused by the Opposition Division): no - arbitrary selections among the alternatives that the prior art rendered obvious to try"

"Inventive step (patent as maintained): yes"

Decisions cited:

-

Catchword:

-



Case Number: T 0105/10 - 3.3.06

DECISION
of the Technical Board of Appeal 3.3.06
of 23 January 2013

Appellant I: Clariant Produkte (Deutschland) GmbH
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Decision under appeal: **Interlocutory decision of the Opposition
Division of the European Patent Office posted
14 December 2009 concerning maintenance of the
European patent No. 743973 in amended form.**

Composition of the Board:

Chairman: P.-P. Bracke
Members: P. Ammendola
J. Geschwind

Summary of Facts and Submissions

I. This appeal is from the interlocutory decision of the Opposition Division concerning the maintenance in amended form of European patent No. 0 743 973 according to the then pending third auxiliary request of the Patent Proprietor.

II. The patent as granted contained twelve claims (hereinafter claims **as granted**). Claim 1 as granted reads as follows:

"1. A fuel oil composition comprising a major proportion of a middle distillate petroleum-based or vegetable-based fuel oil and minor proportions of a lubricity enhancer in combustion with at least one polyoxyalkylene compound being a polyoxyalkylene ester, ether, ester/ether or mixture thereof containing at least one C₁₀ to C₃₀ linear alkyl group and having a polyoxyalkylene glycol group of molecular weight up to 5,000, the alkylene group of the polyoxyalkylene glycol having from 1 to 4 carbon atoms; and the sulfur content of the composition being at most 0.2% by weight; the lubricity enhancer being employed in a proportion within the range of 0.0001 to 10% by weight, based on the weight of the fuel oil; and the or each polyoxyalkylene compound being employed in a proportion within the range of 0.005 to 1 % by weight, based on the weight of the fuel oil, the combination allowing a higher level of lubricity to be obtained for a given amount of lubricity enhancer or enabling less of the lubricity enhancer

to be used for a given level of lubricity provided."

Claims 2 to 10 as granted define preferred embodiments of the fuel oil composition of claim 1.

The remaining granted claims 11 and 12 read as follows:

"11. A process for the manufacture of the composition of any one of claims 1 to 10, which comprises refining a crude oil to produce a petroleum-based fuel oil of low sulphur content, and blending with this refined product minor proportions of a lubricity enhancer and at least one polyoxyalkylene compound, and optionally a vegetable-based fuel oil, to provide a composition with a sulphur content of at most 0.2% by weight and having a lubricity such as to give a wear scar diameter, as measured by the HFRR test at 60°C, of at most 500µm; wherein the lubricity enhancer is employed in a proportion within the range 0.0001 to 10% by weight, based on the weight of the fuel oil; and wherein the or each polyoxyalkylene compound is employed in a proportion within the range of 0.005 to 1% by weight based on the weight of the fuel oil, and is a polyoxyalkylene ester, ether, ester/ether or mixture thereof containing at least one C₁₀ to C₃₀ linear alkyl group and having a polyoxyalkylene glycol group of molecular weight up to 5000, with the alkylene group of the polyoxyalkylene glycol having from 1 to 4 carbon atoms."

"12. The use of at least one polyoxyalkylene compound as defined in claim 1 to enhance the lubricity as

defined in claim 1 of a fuel oil composition as defined in claim 1 having a sulfur content of at most 0.2% by weight and also comprising a lubricity enhancer, the proportions of the polyoxyalkylene compound and of the lubricity enhancer being as defined in claim 1."

III. Opponents I and II had sought revocation of the granted patent for added subject-matter and lack of novelty and of inventive step.

In particular, in their grounds they referred to, *inter alia*, the documents

(1) WO 95/33805 (which is prior art only under Article 54(3) EPC),

(7) WO 94/17160

and

(13) EP-A-0 061 895.

With a facsimile of 19 October 2009 Opponent II had raised for the first time an objection to the granted claims for insufficiency of disclosure (Articles 83 and 100(b) EPC) and had filed, *inter alia*, the documents

(27) "*Lubricity Additives - A New Class Based On Polymers & Esters*", Misra A.K. *et al.*, First World Conference in Industrial Tribology, New Delhi (1972), Paper B-2.

and

- (28) "*Microbiological Spoilage of Aviation Turbine Fuel: Part II-Evaluation of a Suitable Biocide*", Dayal H.M. et al., Defence Science Journal, Vol.42 (January 1992), pages 47 to 52.

With a facsimile of 19 October 2009 the Patent Proprietor had filed, *inter alia*, three sets of amended claims respectively labelled as Claim set A, Claim set B and Claim Set C.

IV. Claim 1 of **Claim set A** only differs from claim 1 as granted (see above Section II) in that the initial wording of this latter reading

"A fuel oil composition comprising"

is replaced with

"A fuel oil composition having a lubricity such as to give a wear scar diameter, as measured by the HFRR test at 60°C, of at most 500µm, comprising".

Claim 1 of **Claim set B** only differs from that of Claim set A in that the wording of this latter reading

"one C₁₀ to C₃₀ linear"

is replaced with

"one C₁₄ to C₂₄ linear".

Claim 1 of Claim set C only differs from that of Claim set B in that the wording of this latter reading

"at least one C₁₄ to C₂₄ linear alkyl group and"

is replaced with

"at least two C₁₄ to C₂₄ linear alkyl groups and".

Claim 9 of Claim set C only differs from claim 11 as granted (see above Section II) in that the wordings of this latter reading

"any one of claims 1 to 10, which"

and

"at least one C₁₀ to C₃₀ linear alkyl group and"

are respectively replaced with

"any one of claims 1 to 8, which"

and

"at least two C₁₄ to C₂₄ linear alkyl groups, and"

The remaining claims 2 to 8 and 10 of Claim set C are substantially identical to granted claims 3 to 5, 7 to 10 and 12 renumbered as necessary.

At the oral proceedings held before the Opposition Division on 19 November 2009 the Patent Proprietor filed a corrected version of Claim set C in which the

word "*combustion*" in claim 1 (already present in granted claim 1 as published) is replaced with "*combination*" (hereinafter, the claims of this request are indicated as **the maintained claims**). It also filed an amended version of the patent description adapted to Claim set C.

V. In the decision under appeal (in which the Claim sets A and B and the maintained claims are respectively referred to as claims according to the first to third auxiliary request) the Opposition Division decided, *inter alia*, that:

a) the objection to the granted claims for insufficiency of disclosure, which constituted a fresh ground of opposition, was not admitted into the opposition proceedings because it did not *prima facie* prejudiced the maintenance of the patent;

b) the final wording of granted claim 1 was a functional feature limiting the scope of the claim by requiring that the two additives (i.e. the "*lubricity enhancer*" and the "*polyoxyalkylene ester, ether or ester/ether*", this latter is hereinafter also indicated as **POA compound**) to be present on the lubricated surface below their saturation levels so that "*lubricity can be further improved by using more of one additive or kept constant by simultaneously using less of the other additive*" (see in the decision under appeal point 2.3 in combination with point 4.4);

c) the claims as granted, as well as those of the first to third auxiliary requests fulfilled the requirements of Articles 123(2) and 54 EPC;

d) the late filed documents (27) and (28) were *prima facie* relevant and, thus, admitted in the opposition proceedings;

e) the subject-matter of claim 1 as granted solved vis-à-vis the fuel compositions disclosed in document (7) (which already comprised a lubricity enhancer) the technical problem to further enhance the lubricity of these compositions, or to avoid lubricity decline upon reduction of the lubricity enhancer concentration; the combination of this citation with document (27) rendered obvious to solve this problem by means of the subject-matter of granted claim 1 as well as by means of that of claim 1 of the first and second auxiliary requests;

f) the amendment of "*combustion*" into "*combination*" in claim 1 (resulting in the filing at the hearing of the final version of the third auxiliary request) was a correction of a manifest typing error and, thus, allowable under Rule 139 EPC;

and

g) the subject-matter claimed in the third auxiliary request involved an inventive step over the combined teaching of documents (7) and (27).

Thus, the Opposition Division concluded that the amended version of the patent according to the third auxiliary request (i.e. that constituted by the amended patent description and the maintained claims filed at

the oral proceedings) complied with the requirement of the EPC.

VI. All parties to the opposition proceedings lodged an appeal against this decision.

Both Opponents in their grounds of appeal disputed, *inter alia*, the decision of the Opposition Division not to admit the new ground of opposition under Article 100(b) EPC.

Moreover, Opponent I filed with the grounds of appeal experimental data (hereinafter indicated as **the data of 2010**).

The Patent Proprietor filed with its grounds of appeal two further copies of Claim set A and Claim set B as refused by the Opposition Division (i.e. those identified as first and second auxiliary requests in the decision under appeal).

It then filed with a letter of 8 September 2010 eight further sets of amended claims respectively labelled as Claim set D, E, 1 and A1 to E1. In its grounds the Patent Proprietor also requested the Board to reverse the finding of the Opposition Division onto the admissibility of documents (27) and (28).

A communication of the Board was sent to the Parties with the summons to oral proceedings to be held on 23 January 2013. In this communication the Board expressed, *inter alia*, the preliminary opinion that the Department of First Instance appeared to have properly exercised its discretion in taking the decision to admit into the proceedings the undisputedly late-filed

documents (27) and (28) because of their *prima facie* relevance. Thus, this decision could not be reversed by the Board.

At the oral proceedings, that took place as scheduled in the announced absence of the duly summoned Patent Proprietor, the Opponents stated to no longer contest the decision of the Opposition Division not to admit the ground of opposition under Article 100(b) EPC.

VII. The (written) submissions of the Patent Proprietor may be resumed as follows:

a) The disclosure provided by the late-filed document (27) was *non-enabling* with respect to the level of sulphur of the fuels and with respect to structure of the POA compounds. In particular, this citation did not provide any guidance as to the acids used for producing the "AK" examples mentioned in Table (3). Also the disclosure provided by documents (27) and (28) in combination would not prejudice maintenance of the patent-in-suit, already because the difference of 20 years among their dates would deprive of credibility the assumption that they used the same fuel. Hence, the Opposition Division had erred in concluding that these documents were *prima facie* relevant and, thus, in admitting them into the proceedings.

b) The final wording of granted claim 1 "*the combination thereof allowing a higher level of lubricity to be obtained for a given amount of lubricity enhancer or enabling less of the lubricity enhancer to be used for a given level of lubricity provided*" (this wording, also present in claim 1 of the

Claim sets A and B, as well as in claim 1 as maintained, is referred hereinafter as **the functional feature**) was based on the disclosure of the application as originally filed at page 2, lines 13 to 20, as correctly interpreted in the context by the Opposition Division. Thus, the Opponents' objection that such wording constituted added subject-matter was unfounded.

c) The subject-matter of claim 1 as granted was also not anticipated by the disclosure of document (1) because, as correctly established by the Opposition Division, this citation did not disclose the combination of all features of this claim. Indeed, several selections had to be made from within different parts of the disclosure of document (1), in order to arrive at the claimed subject matter.

d) The reasoning of the Opposition Division finding obvious the subject-matter of claim 1 as granted required to arbitrarily combine document (7) with the non-enabling disclosure of document (27) and, possibly, even with document (28), but also to arbitrarily "single out" the C₁₈ linear alkyl acids among the acids used for forming the ingredients disclosed in Table (3) of document (27), thereby simultaneously disregarding that the most effective ingredients disclosed therein were those derived instead from the unsaturated oleic acid. Thus, the conclusion of the Opposition Division that the granted claims did not comply with the requirements of Article 56 EPC was based on a *ex post facto* analysis.

e) The above considerations applied all the more to the subject-matter of claim 1 of Claim set A as well to

that of Claim set B whose definitions were narrower than that of granted claim 1.

f) The data of 2010 had been filed unjustifiably late by Opponent I and, thus, were not to be admitted in the appeal proceedings. Moreover, these data were *prima facie* irrelevant to the decision under appeal, because they only aimed at demonstrating that the subject-matter of the maintained claim 1 requiring the presence of POA compounds carrying a plurality of linear alkyl groups (hereinafter these ingredients are also indicated as **multi-substituted POA compounds**) provided inferior results in comparison to compositions which comprised POA compounds carrying only one C₁₄ to C₂₄ linear alkyl group (hereinafter these ingredients are also indicated as **mono-substituted POA compounds**). This alleged difference had no possible bearings on the finding of the Opposition Division that the combination of most relevant prior art, namely document (7) with document (27), only taught the mono-substituted POA compounds. Thus, for multi-substituted POA compounds there was no *prima facie* case of obviousness over the prior art. Finally, the data of 2010 did not even allow any sound conclusion as to the relative efficacy of the compositions compared.

g) As correctly established in the decision under appeal, the subject-matter of the maintained claims was manifestly inventive also because there was no *prima facie* evidence of a pointer towards the possibility of modifying the mono-substituted POA compounds disclosed document (27) in the direction of multi-substituted compounds. Neither this citation nor document (23) would direct the skilled reader to the POA compounds of

the amended claims, and to derive this from an *ex post facto* interpretation of these citation was not permissible.

h) The fact that multi-substituted POA compounds known as cold flow improvers for fuels were allegedly structurally similar to the cold flow improvers disclosed e.g. in document (27), would at most justify the expectation that multi-substituted POA compounds could also be cold flow improvers. In any case, the lubricant functionality of these compounds would only become apparent with the disclosure of the patent-in-suit.

The Opponents' appeals should thus be rejected, and the Proprietor's appeal considered in turn.

VIII. The Opponents arguments as to the lack of inventive step for the subject-matter of the granted claims as well as for those of the Claim sets A and B were substantially the same that have led the Opposition Division to the conclusion that none of these sets of claims was allowable.

In addition, the Opponents maintained their objection as to the compliance of the functional feature (contained in granted claim 1, as well as in claim 1 of the Claims sets A and B and in claim 1 as maintained) with Article 123(2) EPC. In their opinion, the disclosure at page 2, lines 15 to 22, of the original application only referred to a "*copolymer*" and to "*conventional lubricity enhancers*" and, thus, did not correspond to the added feature present in.

The Opponents also disputed the finding of the Opposition Division on the novelty of claim 1 as maintained vis-à-vis document (1), because this latter disclosed (at page 1, fifth paragraph, in combination with the paragraph bridging the pages 14 and 15, the last paragraph on page 15 and the second paragraph at page 16) the possibility of using two or more flow improvers which also acted as lubricity enhancers such as e.g. the same POA **di**esters or **di**ethers used in the patent-in-suit. Moreover, the amount of flow improver(s) to be used as well as the possible additional presence of further conventional lubricants were also expressly mentioned in the third and fourth paragraph of page 16 of the same citation. Hence, document (1) disclosed implicitly the combination of features required in claim 1 as maintained.

As to the issue of inventive step in respect of the subject-matter of the maintained claim 1, the Opponents stressed that the filing of the data of 2010 with the grounds of appeal of Opponent I was in prompt response to the filing of the Claim set C by the Patent Proprietor just few weeks before the oral proceedings that ended the opposition proceedings. Since these data demonstrated that multi-substituted POA compounds performed worse than the mono-substituted ones, none of the features of claim 1 as maintained was associated to a surprising technical advantage.

Hence, the fuel oil compositions of claim 1 as maintained would only represent an alternative to the prior art disclosed in document (7).

Since multi-substituted POA compounds known as cold flow improvers for fuels were:

a) structurally very similar to the cold flow improvers disclosed e.g. in Table (3) of document (27),

as well as

b) explicitly indicated as effective flow improvers in document (13),

the skilled person searching for an alternative to the fuel oil compositions of document (7) would arrive at the claimed subject-matter by adding thereto the additives disclosed in document (13) or variations of the additives disclosed in document (27) that the skilled person would have no problem in realizing.

IX. The Patent Proprietor request in writing that:

- the decision of the first instance be set aside and the patent be maintained as granted or, in the alternative,

- that the patent be maintained in amended form on the basis of the Claim Set A or B filed with the grounds of appeal, or

- that the appeals of the Opponents be dismissed, or

- that the patent be maintained in amended form on the basis of the Claim Set D, E, 1, A1, B1, C1, D1 or E1 all filed with letter of 8 September 2010.

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

Reasons for the decision

Procedural issues

1. Admissibility of documents (27) and (28).

The Patent Proprietor has in its grounds of appeal requested the Board to reverse the decision of the Opposition Division to admit into the proceedings documents (27) and (28).

The Board has indicated in the communication enclosed to the summons to oral proceedings that, according to the established jurisprudence of the Boards of Appeal (see G 7/93, OJ 1994, 775, as well as The Case Law of the Boards of Appeal of the EPO, 6th Ed., 2010, Section VI.J.7) a Board of Appeal should only overrule the way in which a first-instance department has exercised a discretionary power attributed to such department by the EPC, if it comes to the conclusion either that the department has not exercised its discretion in accordance with the proper principles, or that it has done so in an unreasonable way, and has thus exceeded the proper limits of its discretion. In the same communication the Board has also expressed the preliminary opinion that the reasons that had led the Opposition Division to the conclusion that documents (27) and (28) were *prima facie* relevant, were logically structured and based on the application of the proper principles. Hence, the Department of First Instance

appeared to have properly exercised its discretion. The Patent Proprietor has provided no comment to the Board's communication.

Thus, the Board has no reason to reverse the finding of the Opposition Division to admit documents (27) and (28) into the proceedings.

2. Admissibility of the data of 2010.

The Patent Proprietor has requested the Board not to admit the data filed by Opponent I with its grounds of appeal, because these data were filed unjustifiably late and were not relevant.

The Board notes preliminarily that the filing of these additional facts onto which Opponent I relies has occurred in accordance with the Rules of Procedure of the Boards of Appeal (see Article 12(2)(a) of the RPBA).

The Board additionally notes that the Patent Proprietor has filed for the first time claims limited to multi-substituted POA compounds (i.e. claim 1 of Claim set C) with the Facsimile of 19 October 2009, i.e. just one month before the date of the oral proceedings before the Opposition Division (see above Sections III and IV of the facts and Submissions).

Hence, the Board decides that the data of 2010 do not appear filed unjustifiably late and decides to admit them into the appeal proceedings in accordance with Article 12(4) of the RPBA.

Patent as granted

3. Inventive step (Article 56 EPC): claim 1 as granted.

3.1 Claim 1 as granted defines a fuel oil composition comprising two additives:

- a lubricity enhancer

and

- a POA compound as defined in the claim.

The Board finds that the Opposition Division has correctly identified the meaning of the functional feature limiting the scope of granted claim 1 (see above Section V of the Facts and Submissions). This interpretation of the claim wording has not been disputed by the Patent Proprietor.

The Board notes additionally that this functional feature necessarily implies that the amount and the kind of the two additives must be such to ensure that each of these ingredients substantially contributes to the level of lubricity provided by the fuel composition (i.e. implies, for instance, that reducing appreciably the amount of any of the two additives inevitably results in an appreciable reduction of lubricity).

3.2 The Patent Proprietor has argued that, contrary to the finding of the Opposition Division, the subject-matter of granted claim 1 would not be obvious in view of the combination documents (7) and (27), for the reasons

already indicated above (see Section VI of the Facts and Submissions).

- 3.2.1 The Board notes that the Patent Proprietor has not disputed that the fuel oil compositions disclosed in document (7) (see in particular from page 1, line 3 to page 3, line 24 in combination with the examples comprising middle distillates low in sulphur and glycerol mono-oleate as wear reducing additive) solve the problem of providing good lubricity to fuels with low-sulphur content and, thus, with poor lubricity. Nor has it disputed that this citation explicitly suggests the possibility of using mixtures of lubricity enhancers (see in document (7) page 3, lines 10 to 14, as well as page 5, lines 16 to 17).

Hence, the Board sees no reason to deviate from the undisputed finding of the Opposition Division that the fuel compositions exemplified in document (7) represent a suitable starting point for the assessment of inventive step in the present case.

- 3.2.2 In view of the functional feature of granted claim 1, it is apparent to the Board that the technical problem credibly solved by the claimed subject-matter vis-à-vis these fuel compositions of the prior art may be expressed as suggested by the Opposition Division, i.e. as the technical problem of allowing additional lubricity to be achieved or the saving of some of the first lubricity enhancer (the one already present in the compositions of the prior art) without sacrificing lubricity.

3.2.3 The Board is of the opinion that a skilled person searching for a solution to this problem and reading the suggestion of mixtures of lubricity enhancers already contained in document (7) itself, would consider obvious to solve the posed problem by adding to the fuel compositions of the prior art of departure **any** other compound that has already been used for providing substantial lubricity benefits to fuels.

Thus, the Board concludes that a skilled person would search such further lubricity enhancer(s) in the whole technical field of lubricity enhancers for fuels and, hence, would certainly also find document (27) which explicitly discloses lubricity additives for fuels with poor lubricity (see e.g. the title, the abstract and the sentence on page B2-3, left column, lines 10 to 11).

The Board stresses that no evidence has been provided by the Patent Proprietor that the skilled person regards the lubricity problems occurring in fuels with low sulphur content as being substantially different from those possibly occurring in other fuel compositions of insufficient lubricity. On the contrary, the substantial similarity between the problem of poor lubricity addressed in document (27) (in respect of fuels whose sulphur content is not disclosed) and the problem of poor lubricity addressed in document (7) in respect of fuels that are low in sulphur, appears confirmed by the fact that both documents disclose the same compounds (e.g. glycerol mono-oleate) as effective lubricity enhancers. Thus, the argument of the Patent Proprietor that document (27) is non-enabling in respect of the sulphur content

of the fuels of poor lubricity mentioned therein, has no bearings on the above reasoning.

3.2.4 Hence, for the skilled person it is obvious to solve the posed technical problem by adding to the fuels compositions of document (7) **any** of the lubricity improvers already used in document (27), including the POA compounds labelled as "AK" additives that are disclosed only in part in this citation. Indeed, the skilled person would note the disclosure from page B2-4, right column, line 5, to page B2-5, right column (see in particular the Tables (3) to (6)) of various mono-esters that are effective to reduce wear in various middle distillate fuels with poor inherent lubricity (high wear) at concentrations of 0.05% or less. The sentence surrounding Table (3) and preceding Table(4) refers in particular to these mono-esters by stating "*Among the esters, glycerol mono-oleate, sorbitan mono-oleate and those based on neopentyl glycol, polyethylene glycol and diethylene glycol have been found to be very effective as antiwear agents. A marked improvement in the antiwear property has been observed with esters based on diethylene glycol. ... in Table (4). It is seen that esters like propyleneglycol mon-stearate, glycerol mono-oleate and sorbitan mono-oleate are effective at higher concentration (1%) while that based on diethylene glycol (AK-48) at lower concentration (0.25%)." (emphasis added).*

The Board notes further that the Patent Proprietor has not disputed the findings of the Opposition Division that e.g. diethylene glycol is to be considered a polyoxyalkylene glycol group as defined in granted claim 1, and that the definition of the molecular

weight of the polyoxyalkylene group given in the claim (up to 5000) is so broad to reasonably embrace any molecular weight of the polyethylene glycol that workshop routine would allow to identify as suitable.

Hence, the Board has no reason to doubt that the skilled person would consider obvious to solve the posed technical problem by adding to the fuels compositions of document (7) **a lubricity improving amount** of, for instance, the mono-ester of diethylene glycol labelled as "AK-48" in document (27) that is disclosed therein to be effective already at proportion of 0.25%, or of the mono-ester of a polyethylene glycol of unknown molecular weight corresponding to one of the other samples labelled as "AK" in the same citation.

3.2.5 However, it is also evident to the skilled person that the chemical structure of these "AK" additives (mentioned in the text as well as in the Tables (3) to (7)) is only partially disclosed in document (27), in particular the acid(s) from which these mono-esters are formed is/are undisclosed. On this basis, the Patent Proprietor has argued that the disclosure provided by this citation is *non-enabling* in respect of the POA compounds defined in granted claim 1.

The Board notes nevertheless that a skilled person confronted with such situation would attempt to realize lubricity enhancers which are, if not necessarily identical, at least similar to these mono-ester of the "AK" group. Hence, a skilled person would note that mono-esters mentioned in Tables (3) to (7) are all made from C₁₈ linear fatty acids (lauric, palmitic, oleic, stearic). Hence, the skilled person aiming at the posed

technical problem would consider **at least obvious to try** the addition to the fuel oil compositions of departure of any of the mono-esters deriving e.g. from diethylene glycol (or from a polyethylene glycol of higher molecular weight) and one or the other of these C₁₈ linear fatty acids (saturated or unsaturated).

In particular, since the patent-in-suit contains not even an indirect allegation as to the criticality in view of a technical effect of the requirement in claim 1 that the acid residue in the POA compounds must be saturated (see in claim 1 as granted "*C₁₀ to C₃₀ linear alkyl group*", emphasis added) rather than unsaturated, to arrive at the claimed subject-matter only requires the skilled person to **arbitrarily** select e.g. the stearate variants of these mono-esters that document (27) rendered obvious to try: i.e. diethylene glycol mono-stearate or the mono-stearate ester of a polyethylene glycol of higher molecular weight.

- 3.2.6 The Board concurs therefore with the Opposition Division that the subject-matter of granted claims 1 provides a solution to the posed technical problem that is obvious in view of the combination of document (7) with document (27). Already for this reason, the granted patent is found not to comply with Article 56 EPC and the Patent Proprietor's main request must be refused.

Claim set A

4. Inventive step (Article 56 EPC): claim 1.

This claim only differs from the granted claim 1 in that it specifies the minimum level of lubricity to be provided by the claimed fuel oil composition expressed as wear scar in the HFRR test (see above Section IV of the Facts and Submissions).

The Board notes that the data in document (7) render evident that wear scars well below 500µm are already achieved in the prior art of departure containing the lubricity enhancer only (see page 10 of document (7)). Hence, the same reasoning given above for the fuel oils compositions of granted claim 1 applies also to the subject-matter of claim 1 of Claim set A.

Accordingly, also this request of the Patent Proprietor does not comply with Article 56 EPC and must be refused.

Claim set B

5. Inventive step (Article 56 EPC): claim 1.

This claim only differs from claim 1 of Claim set A in that it limits the length of the carbon chains of the linear alkyl group in the POA compound to be " C_{14} to C_{24} " (see above Section IV of the Facts and Submissions).

Since, as indicated already above, the disclosure of document (27) renders obvious to try mono-stearates, i.e. esters of a saturated C_{18} fatty acid, the subject-matter of claim 1 of Claim set B is obvious in view of the same reasoning already given above for the fuel oils compositions of claim 1 as granted and of Claim set A.

Hence, also this request of the Patent Proprietor is not allowable because it does not comply with Article 56 EPC.

6. Thus, the Board concludes that the Patent Proprietor has not succeeded in proving erroneous the findings of the Opposition Division that the granted claims as well as those of Claim set A and B do not comply with the EPC.

Accordingly, the appeal of the Patent Proprietor must be dismissed.

Patent as maintained

7. Article 123(2) EPC: claim 1 as maintained

The finding of the Opposition Division that the added feature (also) present in claim 1 as maintained does **not** contravene Article 123(2) EPC has been disputed by the Opponents for the reasons already indicated above (see Section VIII of the Facts and Submissions).

The Board notes however that also the passage at page 2, lines 15 to 20, of the original application (reading "*The combination of conventional lubricity enhancer and at least one such copolymer can provide excellent lubricity enhancement, allowing a higher level of lubricity to be obtained for a fixed amount of conventional lubricity enhancer. Alternatively, an equivalent level of lubricity can be provided whilst allowing a lower amount of the conventional lubricity enhancer to be used.*") must be interpreted by the

skilled person in the context and with a mind willing to understand. Already the fact that the sentence immediately preceding the above-cited passage reads "*The present invention is based on the observation that the presence of at least one polyoxyalkylene compound further enhances the lubricity of a low-sulphur fuel oil containing a lubricity enhancer*" renders apparent that the wording "such copolymer" (emphasis added) can only possibly refer to the "*polyoxyalkylene compound*" in the preceding sentence, even though such compound is not (necessarily) a copolymer.

This interpretation is further supported by the fact that the whole disclosure of the application as filed (inclusive of the claims and the examples) clearly indentifies in the POA compound(s) the additive(s) found to be effective in ameliorating the lubricity property of fuel oil compositions already containing a lubricity enhancer.

Moreover, the Board is of the opinion that - in the absence of any more specific definition - the terms "*conventional lubricity enhancer*" and "*lubricity enhancer*" appear to the skilled person as substantially equivalent. Indeed, they have also been used interchangeably in the application as filed.

Accordingly, the Board concludes that the functional feature in claim 1 as maintained is based on the passage at page 2, lines 15 to 20, of the original application.

Thus, and since this is the only objection of added subject-matter raised by the Opponents, the Board

concur with the finding of the Opposition Division that the maintained claims comply with the requirements of Article 123(2) EPC.

8. Novelty: claim 1 as maintained

8.1 Claim 1 as maintained differs substantially from the versions thereof in the requests already considered above, in that it requires the POA compound(s) to be multi-substituted (see the wording "*at least two C₁₄ to C₂₄ linear alkyl group*", emphasis added). In addition, also the subject-matter of this claim is limited by the functional feature.

8.2 As indicated already in Section VII of the Facts and Submissions the Opponents have disputed the novelty of the subject-matter of this claim in view of the teachings provided in document (1) (which is prior art only under Article 54(3) EPC) in respect of the simultaneous presence in fuel compositions of more than one ester, ether or ester/ether acting as flow improvers or of (at least) one of these flow improvers in combination with lubricity additive(s).

8.3 The Board notes however that this citation contains not even an indirect disclosure implying that the kind and the amount of flow improver(s) present in the fuel oil composition (possibly in combination with lubricity enhancer(s)) are such to result in this/these flow improvers to also substantially contribute to the level of lubricity provided by the fuel composition (see also the analysis of the implications of the functional feature given above at point 3.1).

Already for this reason the Board comes to the conclusion that document (1) does not provide the direct and unambiguous disclosure of the subject-matter of claim 1 as maintained.

Thus, and since this is the only objection of lack of novelty raised by the Opponents, the Board concurs with the finding of the Opposition Division that the maintained claims also comply with the requirements of Article 54 EPC.

9. Inventive step: claim 1 as maintained

9.1 The Opponents have considered obvious the subject-matter of this claim in view of the combination of document (7) with document (27) or with document (13). In particular, they have argued that the only technical problem credibly solved vis-à-vis the fuel oil compositions exemplified in document (7) consisted in the provision of an alternative to these latter.

9.2 The Board notes that even assuming, for the sake of an argument in favour of the Opponents, that the problem solved was just the provision of an alternative to the fuel oil compositions of document (7), still neither this citation nor document (27) contain any element rendering obvious for the skilled person to take into consideration the possibility of using multi-substituted POA compounds. Indeed, as already discussed at point 3 above, also document (27) mentions exclusively mono-substituted POA compounds.

Nor is the argument of the Opponents that a skilled person would have no problem in realizing the multi-

substituted variations of the additives disclosed in document (27) sufficient at rendering plausible that the skilled person would contemplate such variations.

Hence, already for this reason the Board concurs with the Opposition Division that the combination of documents (7) and (27) cannot possibly render obvious the subject-matter of claim 1 as maintained

- 9.3 As to the combination of document (7) with document (13), the Board notes the undisputed fact that this latter citation only discloses multi-substituted PAO compounds as flow improver additives.

Thus, even assuming, for the sake of an argument in favour of the Opponents, that the problem solved was just the provision of an alternative to the fuel oil compositions of document (7) and that a skilled person searching for a solution to this problem and would have taken into consideration the possibility of adding thereto the flow improver(s) disclosed in document (13), still the Opponents have failed to indicate any reason that would have rendered obvious to set the kind and the amount of this flow improver so as to ensure that also this/these flow improvers substantially contribute to the level of lubricity provided by the fuel composition.

Accordingly, also the combination of documents (7) and (13) cannot possibly render obvious the subject-matter of claim 1 as maintained.

9.4 Hence, the subject-matter of the maintained claim 1 is found to comply also with the requirements of Article 56 EPC (1973).

10. Inventive step: claims 2 to 10 as maintained

Claims 2 to 8 as maintained define preferred embodiments of the fuel oil composition of claim 1; claim 9 as maintained defines the process for the manufacture of the composition of claim 1 and claim 10 as maintained defines the use of at least one polyoxyalkylene compound as defined in claim 1 to increase the lubricity of a fuel oil composition as defined in claim 1. It is thus apparent that the prior art referred to by the Opponents cannot possibly render obvious the subject-matter of any of these claims for substantially the same reasons indicated above for claim 1 as maintained.

11. Thus, the Board concludes that the Opponents have not succeeded in proving erroneous the finding of the Opposition Division that the amended version of the patent based on the claims 1 to 10 as maintained complies with the EPC.

Thus also the Opponents' appeals are dismissed.

Order

For these reasons it is decided that:

The appeals are dismissed.

The Registrar:

The Chairman:

D. Magliano

P.-P. Bracke