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Datasheet for the decision of 3 February 2021

Case Number: T 0010/17 - 3.3.06

Application Number: 05020081.5

Publication Number: 1640439

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Language of the proceedings: EN

Title of invention:
Fuel lubricity additive

Applicant:
Malaysian Palm Oil Board

Headword:
Lubricity/Malaysian Palm Oil Board

Relevant legal provisions:
EPC Art. 56
RPBA Art. 12(4)

Keyword:
Inventive step - (no)
Late-filed request - request could have been filed in first instance proceedings (yes) - admitted (no)

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Catchword:

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Chambres de recours

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Case Number: T 0010/17 - 3.3.06

D E C I S I O N
of Technical Board of Appeal 3.3.06
of 3 February 2021

Appellant: (Applicant)	Malaysian Palm Oil Board 6, Persiaran Institusi, Bandar Baru Bangi 43000 Kajang, Selangor Darul Ehsan (MY)
Representative:	Scholz, Volker Boehmert & Boehmert Anwaltspartnerschaft mbB Pettenkoferstrasse 22 80336 München (DE)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 26 July 2016 refusing European patent application No. 05020081.5 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairwoman	J. Hoppe
Members:	S. Arrojo
	G. Santavicca

Summary of Facts and Submissions

I. The appeal filed by the applicant (appellant) lies from the decision of the examining division **to refuse European patent application No. 05 020 081.5** for non-compliance with the requirements of Article 56 EPC.

II. In its statement of grounds of appeal, the appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of the claims according to the main request or, as an auxiliary measure, on the basis of the claims according to the auxiliary request, both claim requests having been filed with the statement of grounds of appeal.

III. The claims of the appellant's main request are identical to those of the claim request filed on 14 August 2012, dealt with in the decision under appeal.

Claim 1 of the main request reads as follows:

"A fuel composition comprising

i. a major portion of a middle distillate fuel with sulphur content of not more than 0.05 weight percent; and

ii. not more than 0.1 weight percent of a lubricity additive comprising polyol esters produced

a. by esterification of a C_{18} unsaturated fatty acid with a polyhydridric (sic) alcohol; or

b. by transesterification of an oil or mixture of oils with fatty acid composition comprising C_8 - C_{18} saturated and/or unsaturated fatty acids or by esterification of a mixture of C_8 - C_{18} saturated and/or unsaturated fatty acids with polyhydric alcohol, wherein the oil or mixture of oils or the mixture of C_8 - C_{18} saturated and/or unsaturated fatty acids have a fatty acid composition comprising minimum 15 weight percent of unsaturated C_{18} fatty acids; and wherein the polyol esters have a hydroxyl number of not more than 5."

IV. In its communication under Article 15(1) RPBA 2020, dated 26 May 2020, the board expressed its preliminary opinion that the subject-matter of the main request was not inventive in view of documents D1 (EP 0 826 765 A1) or D3 (US 6,080,212 A), and that it was inclined not to admit the auxiliary request into the appeal proceedings under Article 12(4) RPBA 2007.

V. The oral proceedings took place on 3 February 2021 by videoconference. As announced with letter dated 20 January 2021, the appellant did not attend.

Reasons for the Decision

1. Main Request - Inventive step

1.1 The board has concluded that claim 1 is not allowable under Article 56 EPC for the following reasons:

1.2 Invention

The invention described in the application at issue relates to a lubricity additive for fuels with low sulphur content (page 1, lines 4-5 of the application as filed). While reducing the sulfur content of fuels is environmentally desirable, it often requires hydrotreating the fuel in a way which reduces its lubricity. The application proposes (page 1, lines 4-5) to address this problem by using additives which allegedly improve the lubricity of the fuel even when they are used at low concentrations (page 3, lines 8-11).

1.3 Closest prior art

1.3.1 In agreement with the examining division and the appellant, the board considers document D3 as the closest prior art, because this document also addresses the problem of increasing the lubricity of low sulfur diesel fuels using additives (D3, column 1, lines 29-32, 33-34 and 40-42) which are very similar to those defined in the invention.

In particular, document D3 discloses a low sulfur fuel composition (less than 0.1 weight% sulfur, see column 2, lines 16-19) including additives which improve the lubricity while reducing the amount of smoke in the exhaust (abstract). The concentration of the lubricity additive is generally from 50 to about 5000 ppm and more preferably within a range of 80 to 300 ppm (column 5 lines 11-15), which anticipates the claimed range of not more than 0.1 weight percent (corresponding to 1000 ppm).

Document D3 also refers to several possible additives comprising polyol esters, *inter alia* disclosing

pentaerythritol tetra octadecenoate (column 3, lines 5-6; table 1; claims 6, 27, 36, 56, 65, 68, 85 and 92) and (triolein) glyceryl trioctadecenoate (column 4, line 50). According to column 2, lines 60-61 of D3, "octadecenoate" is synonymous with methyl oleate (i.e. a $C_{18:1}$ mono unsaturated fatty acid). These two substances therefore fall within the scope of the additives defined in claim 1.

1.3.2 The embodiment defined in claim 27 (dependent from claim 9) of D3 is considered to be closest to the application at issue, because it specifically concerns a composition comprising diesel fuel and pentaerythritol tetra octadecenoate, an additive falling within the scope of claim 1 at issue.

As generally disclosed in D3 (column 2, lines 16-19; column 5, lines 11-15), the diesel fuel of claim 27 has a sulfur content of less than 0.1 weight% and the amount of the additive lies in the range of 50 to 5000 ppm.

1.3.3 In D3 there is no hydroxyl value associated with the polyol ester mentioned in claim 27, or with the further additives mentioned in D3, and falling within the scope of claim 1.

The subject-matter of claim 1 therefore differs from the closest embodiment of D3 in that:

- The sulfur content is not more than 0.05 weight percent (D3 discloses a sulphur content of less than 0.1 weight%); and

- the polyol esters have a hydroxyl number of not more than 5.

1.4 Problem to be solved in view of D3

In its statement of grounds of appeal (page 5, first full paragraph), the appellant indicated that the invention solved the problem of providing a fuel composition having an improved wear scar diameter.

1.5 The solution

The fuel composition of claim 1 is characterised by
- a sulfur content of **not more than 0.05** weight percent, and
- polyol esters having **a hydroxyl number of not more than 5**. The "hydroxyl number" being a measure of the degree of esterification of the polyhydric alcohol, i.e. the relative amount of alcohol which reacts to form the polyol ester additive, that is, if all the alcohol is esterified the hydroxyl number equals zero.

1.6 Success of the solution and reformulation of the technical problem solved

1.6.1 According to the application (page 3, lines 8-11), even when used in small concentrations, the additives defined in claim 1 are capable of ensuring a good lubricity in low sulfur fuels. Furthermore, this effect would also be maintained when additives having low hydroxyl numbers (not higher than 5) are used, i.e. when the polyhydric alcohols are esterified to a high degree during the synthesis of the additive.

1.6.2 The appellant argued that examples 1 and 2 of the application provided evidence that the additive according to the invention achieved the invoked technical effect. While not explicitly indicated, it

was implicit that the additive in these examples also included the feature of a hydroxyl number of less than 5, because the reaction was controlled by azeotropic distillation to ensure a quantitative esterification of the polyhydric alcohol.

1.6.3 The board does not follow this argumentation for the following reasons:

- Examples 1 and 2 refer to a single exemplary polyol ester (i.e. trimethylol propane oleate ester), whilst the subject-matter of claim 1 generically defines that the additives are obtained via esterification or transesterificiation processes, and by specifying that the esterified fatty acids in these reactions have a particular number of carbons (i.e. C_8-C_{18}) and that the minimum content of unsaturated C_{18} fatty acids is 15 weight%. A single example cannot plausibly demonstrate that substantially any additive falling within the broad range defined in claim 1 would be capable of providing the above mentioned technical effect of improving the lubricity.
- In any case, the chemical structure of the additive in claim 27 of document D3 falls within the scope of claim 1, so any alleged improvement would have to be associated with the hydroxyl number lower than 5. However, even if it were accepted, as the appellant argued, that the reference to the "azeotroping agent" in example 1 is equivalent to a hydroxyl number lower than 5, there is no direct comparison in the application between additives having different hydroxyl numbers, so it is not possible to conclude that the lubricity obtained in this way would be better than that obtained with the additives in document D3.

1.6.4 Consequently, the examples do not support any specific advantage in terms of lubricity of the subject-matter of claim 1 with respect to the additive in the closest prior art.

However, for the sake of the argument, the board will assume in the applicant's favour that the examples in the application at least demonstrate that the additive of the invention provides an alternative fuel composition with low sulfur content and an acceptable lubricity (see page 5, lines 9-10 of the description as filed).

1.6.5 In view of the above argumentation, the technical problem effectively solved by the claimed invention has to be reformulated less ambitiously, namely as providing an alternative fuel composition with a low sulfur content and an acceptable lubricity.

1.7 Obviousness

1.7.1 The appellant argued that while all the individual aspects of the invention (i.e. sulfur content, hydroxyl number and nature of the additive) were described in document D3, each of these disclosures was part of a different embodiment. Since D3 did not even mention the HRR test or ASTM D6079, there was no incentive to explore different combinations of features for improving the lubricity. Consequently, while the skilled person could consider the different teachings of D3, there was no reason to conclude that the specific combination of elements leading to the subject-matter of claim 1 would be considered for solving the underlying technical problem.

1.7.2 The board does not follow the appellant's argumentation for the following reasons:

- Although document D3 generally describes (col. 2, lines 16-18) that the sulfur content of "low sulfur diesel" is "equal to or less than 0.1% by weight" of this substance, it also indicates (column 1, lines 16-17) that since 1993 the U.S. legislation requires "that the sulfur content of diesel be lower than 0.05%". This reference to the legislation is not a separate embodiment but rather a general teaching which arguably applies to all the examples of the document. In fact, since it can be assumed that a skilled person would have an incentive to comply with the existing legislation, the sulfur content of less than 0.05 weight% can be seen as equivalent to a preferred embodiment. It would therefore be trivial for the skilled person to contemplate working within the legally required range of less than 0.05 weight% sulfur content, which corresponds to the sulfur concentration defined in claim 1.

- Document D3 generally discloses (col. 2, lines 20-24) the use of certain esters as fuel additives to *inter alia* increase the lubricity of the fuel. This document includes exemplary embodiments with an hydroxyl number falling within the claimed range of lower than 5 (examples 1 and 4 with hydroxyl numbers of respectively 2.15 and 0.84). While it is true, as the appellant argued, that there is no incentive in D3 to consider this parameter for improving the lubricity of the additive in claim 27, the problem solved by the invention is not that of improving the lubricity, but simply that of finding alternatives with acceptable lubricity levels.

Since all the exemplary embodiments in D3 are supposed to provide *inter alia* good levels of lubricity (see col. 1, lines 5-8 and col. 2, lines 20-24), the board considers that a skilled person starting from claim 27 of D3 (which does not disclose any specific hydroxyl number) and looking for alternatives to obtain acceptable levels of lubricity, would consider the teachings of all the exemplary embodiments. In doing so, the skilled person would contemplate (in view of examples 1 and 4), without exercising inventive skills, synthesising the polyol ester additives by carrying out the esterification of the fatty acids in claim 27 to a degree in which the hydroxyl value is lower than 5.

1.8 The subject-matter of claim 1 is thus not inventive in view of document D3.

2. Auxiliary request - Admittance

2.1 The board exercises its discretion under Article 12(4) RPBA 2007 (see Article 25 of RPBA 2020) to exclude the auxiliary request from the appeal proceedings.

2.2 The appeal proceedings are intended to give the parties an opportunity to a judicial review of the decision of the first instance. The appeal should however not be considered as a new proceedings nor as an opportunity for exploring approaches which could and should have been presented during first instance proceedings.

2.3 During the examination proceedings, the applicant was given three opportunities to overcome the outstanding objections, and the examining division gave a clear opinion on the prospects of patentability of the different fall-back positions. Furthermore, the

European examination report had already addressed the patentability issues in view of *inter alia* documents D1 and D3.

In the communication dated 24 April 2012 the examining division mentioned D1 and D3 and concluded *inter alia* that independent claim 1 was not novel and that dependent claims 3, 5 and 6 were not inventive. In particular, claim 3 - dependent on claim 1- was considered to be obvious in view of document D3.

In response to this communication, with letter of 14 August 2012, the applicant filed a single (main) claim request, wherein claim 1 was based on a combination of claims 1 and 3 of the former claim request. The appellant was therefore aware of the examination division's opinion that the subject-matter of this claim request was not inventive in view of D3.

Thus, by filing a single auxiliary request and not requesting oral proceedings, the appellant essentially restricted its case to a subject-matter which had already been regarded as not allowable under Article 56 EPC.

2.4 Consequently, the board concludes that the appellant could and should have filed a request addressing this issue already during the examination proceedings. More specifically, the board considers that the auxiliary request at issue should have been filed during first instance proceedings, and should therefore not be admitted at this stage.

3. The board therefore concludes that the main request is not allowable under Article 56 EPC and that the sole

auxiliary request filed by the appellant is not admitted into the proceedings.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairwoman:

A. Pinna J. Hoppe

Decision electronically authenticated