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Datasheet for the decision of 5 February 2014

Case Number: T 0108/11 - 3.3.06

Application Number: 03766427.3

Publication Number: 1546290

IPC: C10L1/18

Language of the proceedings: EN

Title of invention:
A FATTY ACID COMPOSITION, ITS PRODUCTION AND USE

Patent Proprietor:
Arizona Chemical

Opponents:
1 Infineum International Limited
2 Forchem Oy

Headword:
Tall oil fatty acids/ ARIZONA CHEMICAL

Relevant legal provisions:
EPC Art. 83, 84, 100(b), 114(2)
RPBA Art. 13(1), 13(3)

Keyword:
Admissibility into the proceedings (Auxiliary Request 1) - (no) request filed at the oral proceedings raising new issues of clarity
Sufficiency of disclosure (all other requests) – (no) -
lack of guidance -
undue burden for carrying out the invention across the whole ambit of claim 1

Decisions cited:

Catchword:

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Case Number: T 0108/11 - 3.3.06

D E C I S I O N
of Technical Board of Appeal 3.3.06
of 5 February 2014

Appellant: (Patent Proprietor)	Arizona Chemical Transistorstraat 16 1322 CE Almere (NL)
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Representative:	Capaldi, Michael Joseph Infineum UK Limited Law Department P.O. Box 1 Milton Hill Abingdon, Oxfordshire OX13 6BB (GB)
Respondent 2: (Opponent 2)	Forchem Oy Pl 16 Fin-25101 Rauma (FI)
Representative:	Sundman, Patrik Christoffer Seppo Laine Oy Itämerenkatu 3 B 00180 Helsinki (FI)
Decision under appeal:	**Decision of the Opposition Division of the European Patent Office posted on 5 November 2010 revoking European patent No. 1546290 pursuant to Article 101(3)(b) EPC.**

Composition of the Board:

Chairman:	B. Czech
Members:	P. Ammendola
	U. Lokys

Summary of Facts and Submissions

I. This appeal is from the decision of the opposition division revoking European patent No. 1 546 290.

The Opponents had sought revocation of this patent on the grounds of insufficient disclosure, lack of novelty and lack of inventive step (Article 100(a),(b) EPC 1973).

II. In the decision under appeal the Opposition Division found *inter alia that* the "disclosure in the patent is ... sufficient", but that the subject-matter of the respective claims 1 according to the then pending main and auxiliary requests lacked novelty.

III. Claim 1 according to said main request reads as follows:

"*1. A fatty acid composition* ***characterized*** *in that said composition contains*

i) more than 10% C18;3 fatty acids,
ii) more than 30% C18;2 fatty acids,
iii) less than 35% C18;1 fatty acids,
iv) less than 1.5% saturated fatty acids,
v) more than 90% of unsaturated fatty acids,
vi) less than 1% C18;0 fatty acids, and
vii) less than 2% resin acids,

said fatty acids providing improved low temperature stability of the composition, and that the cloud point of said fatty acid composition is lower than -4°C.".

Claim 1 according to the refused auxiliary request is

directed to a process for producing such a composition.

IV. With its statement of grounds of appeal, the Appellant (Proprietor of the patent) filed nine sets of amended claims as Main Request and Auxiliary Requests 1 to 8.

Claim 1 of this Main Request is identical to claim 1 of the Main Request considered by the Opposition Division (see above Section III).

Claim 1 of Auxiliary Request 2 filed with the statement of grounds of appeal only differs from claim 1 of the Main Request in that the initial and final wordings in the latter reading

"*A fatty acid composition ...*" and "*... is lower than -4°C.*"

are respectively replaced by (emphasis added)

"*A **tall oil** fatty acid composition*" and "*is lower than -**6**°C.*"

Claim 1 of Auxiliary Request 3 filed with the statement of grounds of appeal only differs from claim 1 of the Auxiliary Request 2 in that the final wording of this latter reading

"*is lower than -6°C.*"

is replaced by

"*... is lower than -4°C, and*
said composition having a cloud point factor below 0.28 calculated according to the equation I
$Cp_{fac}=A\cdot[C16;0]+B\cdot[C17;0]+C\cdot[C18;0]+D\cdot[C20;0]+$

E·[C18;1]+F·[C18;2]+G·[C18;3]+H·[Resin], wherein[C16;0] means concentration of C16 saturated fatty acids, [C17;0] means concentration of C17 saturated fatty acids, [C18;0] means concentration of C18 saturated fatty acids, [C20;0] means concentration of C20 saturated fatty acids, [C18;1] means concentration of C18 mono-unsaturated fatty acids, [C18;2] means concentration of C18 di-unsaturated fatty acids, [C18;3] means concentration of C18 tri-unsaturated fatty acids, [Resin] means concentration of C16 resin fatty acids and concentration factors are A=6.2, B=1.32, C=34.5, D=0.075, E=1.3, F=-0.27, G=-5.1 and H=17."

In each of the Auxiliary Requests 4 to 8 also filed with the statement of grounds of appeal, claim 1 is directed to a process for producing a fatty acid composition.

V. In their replies, the Respondents 1 and 2 (Opponents 1 and 2) disputed, *inter alia*, the allowability under the provisions of Article 123(3)EPC of the amended claims 1 according to the Auxiliary Requests 4 to 8. This objection was directed in particular to the definitions in these claims of the composition to be produced, none of which required a cloud point of less than -4°C and, thus, extended the claimed subject-matter in comparison to the process defined by claim 6 of the patent as granted (see above Section II). Moreover, they maintained, *inter alia*, objections under Article 83/100b EPC 1973.

VI. The Board summoned the Parties to oral proceedings to be held on 5 February 2014.

VII. Respondent 2 filed further comments regarding the pending objections regarding sufficiency of disclosure.

VIII. With a letter of 31 January 2014 the Appellant filed, *inter alia*, five new sets of amended claims labelled Auxiliary Requests 4 to 8 replacing the Auxiliary Requests 4 to 8 previously on file.

Claim 1 according to the new Auxiliary Request 4 reads:

"*1. A process for producing a fatty acid composition containing*

i) more than 10% C18;3 fatty acids,

ii) more than 30% C18;2 fatty acids,

iii) less than 35% C18;1 fatty acids,

iv) less than 1.5% saturated fatty acids,

v) more than 90% of unsaturated fatty acids,

vi) less than 1% C18;0 fatty acids, and

vii) less than 2% resin acids,

said fatty acids providing improved low temperature stability of the composition, and the cloud point of said fatty acid composition being lower than -4°C

characterized *in that said process comprises the steps of*

i) selecting a crude tall oil having a fatty acid concentration and type capable of providing low temperature stability, which crude tall oil is derived from trees grown in a cold climate, and

ii) *distilling said crude tall oil to provide a fatty acid composition containing an effective amount of tall oil fatty acids providing low temperature stability.*"

Claim 1 of the Auxiliary Request 5 differs from claim 1

of the Auxiliary Request 4 only in that the wording in this latter reading

"... which crude tall oil is derived from trees grown in a cold climate, ..."

is replaced by

"... *so that more than 4 % of the fatty acids of the crude tall oil are triple unsaturated fatty acids, ...".*

Claim 1 of the Auxiliary Request 6 differs from claim 1 of the Auxiliary Request 5 in that it comprises the appended wording

"*wherein said crude tall oil is derived from trees grown in a cold climate."*

Claim 1 of the Auxiliary Request 7 differs from claim 1 of the Auxiliary Request 5 only in that the wording of this latter reading

"... *triple unsaturated fatty acids, and...* "

is replaced by(emphasis added)

"... triple unsaturated fatty acids ***and less than 1 % of the fatty acids of the crude tall oil are saturated fatty acids of C18 or greater,*** *and ..."*

Claim 1 of the Auxiliary Request 8 differs from claim 1 of the Auxiliary Request 7 in that it comprises the appended additional wording

"*wherein said crude tall oil is derived from trees*

grown in a cold climate."

IX. At the oral proceedings the debate focused on the discussion of the Respondents' objection of insufficiency of disclosure of the composition of claim 1 of the Main Request in view of the extent and the reliability of the technical information and guidance actually provided in the patent in suit, as well as on the differences between the unsaturated fatty acids normally present in tall oil distillates and the other unsaturated fatty acids possibly also forming substantial amounts of the claimed composition.

This discussion extended to all auxiliary requests.

The Appellant filed a new set of amended claims labelled "Auxiliary Request 1" replacing the one previously on file.

The admissibility into the appeal proceedings of this reformulated Auxiliary Request 1 was objected to by the Respondents and, hence, debated.

Claim 1 of said Auxiliary Request 1 filed at the oral proceedings differs from claim 1 of the Main Request (see above Section III) only in that the wording was changed from

"*A fatty acid composition characterized in that said composition ... stability of the composition, and that the cloud point of said fatty acid composition is lower than -4°C.*"

to (emphasis added by the Board)

"*A fatty acid composition* ***of tall oil fatty acids*** *characterized in that* ***the*** *composition ... stability of the composition, that the cloud point of* ***the*** *composition* ***being*** *below -4°C."*

X. The Appellant requested that the decision under appeal be set aside and that the patent be maintained on the basis of the Main Request filed with the statement of grounds of appeal,
or Auxiliary Request 1 filed at the oral proceedings,
or one of Auxiliary Requests 2 or 3 filed with the statement of grounds of appeal,
or one of the Auxiliary Requests 4 to 8 filed with the letter dated 31 January 2014.

The Respondents both requested that the appeal be dismissed.

XI. As relevant here, the Parties' arguments can be summarised as follows:

The **Appellant** rebutted the objection concerning the invoked insufficiency of disclosure with regard to the invention as defined in claim 1 of the Main Request. It stressed that the Respondents provided no experimental evidence supporting their arguments. Moreover, the patent in suit provided extensive teachings to select the appropriate starting crude tall oil and to distill from it, using conventional systems, the **t**all **o**il **f**atty **a**cid**s** (the fatty acids directly obtainable by distillation of crude tall oil are referred to below as **TOFAs**). Thus, the skilled person would have no problem in providing a composition of fatty acids complying with the compositional features "*i)*" to "*vii*)" of claim 1 at issue. The patent in suit also taught how to achieve a lower cloud point in case this latter was

found to be too high in the distilled TOFAs. This could be done, for instance, by blending different TOFAs, by using crude tall oil richer in C18:3 and C18:2 and/or by setting the distillation conditions so as to increase the amounts of the polyunsaturated C18:2 and C18:3 fatty acids and/or to further decrease the amount of any saturated, resin or C18:1 fatty acids. Indeed, equation 1 and paragraphs [0063] to [0066] of the patent in suit indicated how the content of the different TOFAs had to be controlled in order to ensure the achievement of the desired low cloud point.

In the Appellant's opinion, these teachings contained in the description of the patent in suit enabled the skilled person to carry out the invention, i.e. to provide also embodiments of the claimed subject-matter in which the fatty acids were **not** exclusively those for which the patent in suit provided specific teachings. For instance, a skilled reader of the patent in suit, attempting to generate a product falling under claim 1 containing e.g. an unsaturated fatty acid with more than 18 carbons, and confronted with a resulting cloud point above -4°C, would obviously further increase therein the amounts of C18:2 and C18:3 fatty acids and/or further decrease the amount of any possibly present saturated or resin or C18:1 fatty acids.

The Appellant stressed that the respective claims 1 according to Auxiliary Requests 2 and 3 defined a "***tall oil fatty acid*** *composition*". These claims could thus only be construed as defining a composition formed exclusively of TOFAs.

The Appellant conceded, however, that the processes defined in the respective claims 1 according to each of the Auxiliary Requests 4 to 8 allowed for further

steps, e.g. also for a blending step with other unsaturated fatty acids after the distillation of TOFAs.

The Appellant held that the Auxiliary Request 1 filed at the oral proceedings was admissible into the appeal proceedings because its filing was a reaction to the discussion on sufficiency of disclosure that had taken place at the hearing. In the Appellant's opinion, the expression "*A fatty acid composition of tall oil fatty acids*" present at the beginning of claim 1 of the Auxiliary Request 1, although having no literal basis in the original application, could only be construed as defining a composition formed exclusively of TOFAs.

The **Respondents** disputed the sufficiency of disclosure in respect of the composition claimed according to the Main Request. In particular, they pointed out in writing:

a) that the patent in suit made it clear that the cloud point of the claimed composition depended on the melting points and the amounts of the fatty acids present therein, but gave insufficient teachings as to such dependence: thus, a skilled person was able to assemble a fatty acid mixture with the compositional features "*i)*" to "*vii)*" defined by claim 1, but whether this mixture had a cloud point of less than -4°C was a matter of chance (see Respondent I's reply to the grounds of appeal, the discussion on sufficiency of disclosure in the second half of page 6 and the first half of page 7, as well as the statement given in the fourth paragraph on page 8, in the context of another objection, as to the dependence of the cloud point on the fatty acids' melting points); and

b) that also equation I disclosed in the patent in suit did not render the claimed invention reproducible without undue burden, because such equation omitted to consider other fatty acids which appeared to have an impact on the cloud point (see Respondent II's reply to the grounds of appeal, the last paragraph of page 3 making reference to paragraph [0031] of the patent in suit).

At the oral proceedings the Respondents also stressed, *inter alia*, that:

c) the technical teachings provided in the patent in suit, including those expressed by equation I, which implicitly or explicitly addressed some correlation between the kinds of fatty acid present in the claimed compositions and the cloud point of these latter, only referred to certain saturated and unsaturated fatty acids which were normally present in TOFAs. More particularly, they taught to the skilled person that only the polyunsaturated C18:2 and C18:3 TOFAs favoured the achievement of a sufficiently low cloud point, whereas the other TOFAs were to be kept in limited or even at very low (if any) amounts, as they hindered the achievement of such low cloud point;

d) nevertheless most of the composition defined in claim 1 of the Main Request could be made of unsaturated fatty acids different from any of those specifically identified in the claim and even in equation I (below the unsaturated **f**atty **a**cids that are different from those considered e.g. in **eq**uation **I**, are indicated as unsaturated **non-eqIFAs**); the same was also apparent from several passages in the patent in suit which expressly indicated the possible use of any fatty acid of vegetal or animal origin;

e) the teachings provided in the patent in suit allowed no prediction as to which amounts of which unsaturated non-eqIFAs were compatible with the achievement of the required low cloud point;

f) in addition, the comparison between Examples 1 and 2 of the patent in suit confirmed the statement given in [0031] of the patent specification that the cloud point depended on the whole composition, thereby demonstrating the very limited usefulness of the approximate predictions of the cloud points obtainable from equation I; and

g) finally, it would also be apparent to the skilled reader of the patent in suit, that it was particularly difficult to obtain a low cloud point when using substantial amounts of those unsaturated non-eqIFAs which had melting points substantially higher than those of the C18:2 and C18:3 polyunsaturated TOFAs (referred to below as unsaturated **high-melting** non-eqIFAs); this was the case, for instance, of certain trans isomers of unsaturated C18 fatty acids or of most mono or polyunsaturated fatty acids with more than 18 carbon atoms.

Thus, it would be apparent to a skilled person reading the patent in suit that an undue burden of experimental work was necessary for carrying out embodiments of the subject-matter of claim 1 which comprised substantial amounts of unsaturated non-eqIFAs. In particular, the probability of repeated failure upon attempting to carry out this part of the invention as claimed was particularly high for those embodiments of the claimed compositions which contained substantial amounts of unsaturated high-melting non-eqIFAs.

The same objections of sufficiency of disclosure applied to the "*Tall oil fatty acid composition*" of claim 1 of the Auxiliary Request 2 and of the Auxiliary Request 3, as well as to the process of claim 1 in each of the Auxiliary Requests 4 to 8. Indeed, also these claims allowed for the presence of substantial amounts of any unsaturated non-eqIFAs in the compositions (claimed or to be prepared by the claimed process) with a cloud point of below -4°C.

The Respondents disputed the admissibility into the appeal proceedings of the Auxiliary Request 1 filed at the oral proceedings because, in their opinion, the newly formulated wording added at the beginning of claim 1 raised issues as to the clarity of its meaning and, consequently, also as to its support in the original application, i.e. raised new issues under Article 84 EPC 1973 and, possibly, also Article 123(2) EPC.

Reasons for the Decision

Procedural issues

1. Admissibility of Main request, Auxiliary Requests 2, 3 and 4 to 8 filed during the appeal proceedings

1.1 Main request and Auxiliary Requests 2 and 3

1.1.1 These request were filed with the statement of grounds of appeal.

1.1.2 The Main Request corresponds to the request that was refused by the Opposition Division. Its admissibility is thus not questionable.

1.1.3 The filing of Auxiliary Requests 2 and 3 is regarded as *bona fide* attempt to overcome the objections that led to the revocation of the patent. Absent a corresponding objection of the Respondents, the Board found that the admissibility of these requests was not questionable merely in view of their late filing (Articles 114(2) EPC and 13(1),(3) RPBA).

1.1.4 Since it became apparent at the oral proceedings that Auxiliary Requests 2 and 3 suffer from the same deficiency as the main request (i.e. insufficient disclosure, *infra*), their admissibility under Rule 80 EPC, contested by Respondent 1 in writing, need not be addressed.

1.2 Auxiliary Requests 4 to 8

1.2.1 These Auxiliary Requests were filed with the letter of the Appellant dated 31 January 2014, i.e. few days before the oral proceedings.

1.2.2 In the assessment of their admissibility under the provisions of Articles 114(2) EPC and 13(1)(3) RPBA, the Boards considers relevant that:

- the previous Auxiliary Requests 4 to 8 filed with the statement of grounds of appeal are regarded as *bona fide* attempt to overcome the objections that led to the revocation of the patent and their filing was not objected to by the Respondents;

- the Respondents have not objected to the admission of these requests into the appeal proceedings;

- they were filed in reaction to the objection under Article 123(3) EPC raised by the Respondents against

the Auxiliary Requests with the same numbering filed with the statement of grounds of appeal; and

- they differ from the said requests previously on file only by the introduced feature (the cloud point of less than -4°C) whose omission generate said objection under Article 123(3) EPC; hence, the amendments made do not raise new issues.

1.2.3 Thus, the Board, in the exercise of its discretion under the provisions of Articles 114(2) EPC and Articles 13(1) and (3) RPBA, decided to admit into the appeal proceedings the Auxiliary Requests 4 to 8 at issue despite their late filing.

2. Non-admissibility of Appellant's Auxiliary Request 1

2.1 The Appellant submitted that the late filing of this Auxiliary Request at the oral proceedings constituted a reaction to the discussion that had taken place at the hearing on sufficiency of disclosure in respect of all previously filed requests.

2.2 This justification is, in principle, acceptable. However, the admission into the proceedings of a request only filed at the oral proceedings is to be decided by the Board also taking into account the complexity of the submitted request, the current state of the proceedings and the need for procedural economy; in particular, requests only filed at the hearing may be inadmissible if they raise new issues which the Board or the other Parties cannot reasonably be expected to deal with without adjournment of the oral proceedings (Article 13(1),(3) RPBA).

2.3 The Appellant conceded that the amended wording used in

claim 1 of this request reading "*A fatty acid composition* ***of tall oil fatty acids***" (see above Section IX of the Facts and Submission; emphasis added) has no literal basis in the original application. Nevertheless, in the opinion of this Party, this wording defined clearly a fatty acid composition wherein the fatty acids were exclusively TOFAs.

2.4 The Board concurs however with the Respondents that (at least) the clarity of this newly formulated wording is *prima facie* questionable. In particular, whereas there exists a well established meaning in the relevant technical field for the expression "*tall oil fatty acids*" and for the corresponding acronym "TOFA" (meaning also repeated in paragraph [0058] of the patent in suit), it is more than questionable whether the presence of the expression "*composition of ...* " in the initial wording of claim 1 necessarily implies the restricted meaning intended by the Appellant. On the contrary, considering also that listed ingredients i) to vii) "*contained*" in the composition are not expressly or otherwise unambiguously required to be TOFAs in their totality, another technically sensible understanding of this wording, other fatty acid ingredients may be present **in addition** to the TOFAs.

2.5 If only for this reason, the amendment introduced for the first time by means of claim 1 of Auxiliary Request 1 generates a new rather complex issue since it appears to be *prima facie* ambiguous, and hence not clearly allowable under Article 84 EPC 1973.

2.6 Accordingly, the Board, in the exercise of its discretion under the provisions of Articles 114(2) EPC

and 13(1),(3) RPBA, decided not to admit Auxiliary Request 1 into the appeal proceedings.

Main Request

3. Insufficiency of the disclosure - Claim 1

3.1 The composition according to claim 1 at issue

3.1.1 Claim 1 at issue defines a composition wherein more than 90% of the ingredients are unsaturated fatty acids and wherein the C18:2 and C18:3 polyunsaturated fatty acids constitute, respectively, more than 30% and more than 10% of the claimed composition (see Section VI of the Facts and Submissions).

3.1.2 All other ingredients mentioned in claim 1 are optional and only limited in their maximum amount. In particular, monounsaturated C18:1 fatty acids may only be present in an amount of less than 35% of the composition.

3.1.3 The possible presence in the composition of the invention of any sort of unsaturated fatty acid of vegetal or animal origin, and their incorporation into the composition by blending, is also explicitly mentioned in several passages of the description of the patent in suit (see paragraphs [0020], [0023], [0043], [0049] and [0050]).

3.1.4 Hence, it is apparent, and undisputed by the Appellant, that the claimed compositions containing more than 90% unsaturated fatty acids and having a cloud point of less than -4°C, may also comprise substantial amounts (in theory up to about 60%) of any unsaturated fatty acids which are neither C18:1, nor C18:2, nor C18:3.

3.2 The teachings disclosed in the patent in suit

The Board notes that the patent in suit (see paragraphs [0016], [0018], [0021], [0024] to [0036], [0039] to [0042], [0049] to [0055] and [0063] to [0066]) provides the following information to the skilled person:

i) The achievement of the aimed-for low temperature properties appears to be favoured by the incorporation of unsaturated, preferably C18 polyunsaturated fatty acids and to be hindered by the saturated fatty acids (see in particular paragraphs [0021] and [0063]). Accordingly, in compositions derived from tall oil the amounts of certain saturated fatty acids are to be kept as low as possible, and some specific polyunsaturated fatty acids are disclosed to be particularly beneficial to the achievement of a low cloud point, however the monounsaturated fatty acid C18:1 might only be present in limited amounts (see paragraphs [0024] to [0031]).

ii) The patent in suit also discloses "equation I" for calculating a parameter (i.e. the "*cloud point factor*", **Cp_{fac}** below)) as a function of the nature and the relative amounts of certain components present in the composition (namely of the C16 - C20 saturated fatty acids, the C18 unsaturated fatty acids and the resin acids, see paragraph [0035]). According to paragraph [0032] the calculated parameter Cp_{fac} allows to determine "*whether any given fatty acid composition is* ***likely*** *to have the desired low temperature characteristics*" (emphasis added). Examples of how the calculated Cp_{fac} correlates with the actual measured cloud point are given e.g. in the Examples 1, 2, 4 and 5 and in paragraph [0036] of the description, which reads "*If calculated according to the above mentioned equation, the composition has a low Cp_{fac}, i. e. a value*

below 0.4 the composition is likely to have low temperature properties. A Cp_{fac} value below 0.28 indicates a composition having a cloud point lower the -9°C, which is considered a very good value for low temperatures. Cloud point factors for typical standard prior art fatty acid compositions are in the order of 1.5 to 0.4.".

3.3 Insufficient guidance / Undue experimental burden

3.3.1 Concerning the teaching referred to at point 3.2 i) above, the patent in suit thus suggests to the skilled person that the claimed fatty acid compositions are in general rich in unsaturated fatty acids but, at the same time, that not all types of unsaturated fatty acids may be present in unlimited amounts. More detailed instruction as to which amounts of which unsaturated fatty acids favour or hinder the aimed-for low temperature properties are only provided in respect to a limited group of unsaturated fatty acids (i.e. those also mentioned in equation I). Hence, the Board finds that, as was pointed out by the Respondents, the technical teachings to reduce or avoid unsaturated fatty acids, and to respect minimum and maximum limits for the amount of certain unsaturated fatty acids (those limits also given in claim 1 at issue) are not sufficient to permit a reliable identification of all fatty acid compositions having the required low cloud point. In particular, this applies to all possibly conceivable embodiments of the claimed composition containing substantial amounts of unsaturated non-eqIFAs.

3.3.2 Concerning the teaching referred to at point 3.2 ii) above, the Board accepts that equation I does not permit making sound predictions as to which fatty acids

compositions might be expected to achieve the required low cloud point of less than -4°C, in view of the following.

- On the one hand, in view of the limited number of compounds considered in equation I (see e.g. the above-mentioned paragraph [0036]), it provides no meaningful results for fatty acid compositions comprising substantial amount of e.g. unsaturated non-eqIFAs. For instance, compositions which comprise the same concentrations of the components accounted for in equation I, would be predicted to possess an identical Cp_{fac}, regardless of the level of unsaturation or of the melting points of the other unsaturated non-eqIFAs constituting them.

- On the other hand, even when considering fatty acid compositions only (or substantially only) containing components considered in equation I, their predictable Cp_{fac}s appear to allow not even a rough prediction of their actual cloud points. This is evident when considering that paragraph [0036] of the patent in suit (mentioned *supra*) suggests at least implicitly that a higher calculated Cp_{fac} value corresponds to a higher measured cloud point. However, the exemplified values suggest that not even such correlation exists between the calculated Cp_{fac} and the actually observed cloud points: For instance, in Example 4 a Cp_{fac} value of -0.52 corresponds to an observed cloud point of -18°C; in Example 5 a Cp_{fac} value of 0.03 corresponds to a cloud point of -15°C; in Example 1 a Cp_{fac} value of 0.14 corresponds to a cloud point value of -11°C; in Example 2 a Cp_{fac} value of 0.25 corresponds to a cloud point of -15°C; and in paragraph [0036] itself a Cp_{fac} value of < 0.28 corresponds to a cloud point value of < -9°C.

- For the Board, the above-considered lack of influence on the Cp_{fac} of the unsaturated non-eqIFAs and lack of any quantitative correlation between the Cp_{fac} and the observed cloud point, deprive of plausibility the "threshold" teachings in paragraph [0036]: i.e. that Cp_{fac} below 0.28 should (always) correspond to a cloud point lower the -9°C.

- The impossibility of deriving from equation I anything more than a vague indication as to what the actually observed cloud point could be, is also acknowledged in paragraph [0031], where it is expressly stated that "*it has also been found that the* ***whole composition plays a role*** *in determining the cloud point*"(emphasis added).

3.3.3 The Board thus comes to the conclusion that due to a lack of guidance in the patent in suit in this respect, a skilled person reading it and taking into account common knowledge will be confronted with serious difficulties when attempting to carry out at least those embodiments of the invention as defined in claim 1 which comprise, in addition to the required minimum amounts of the mandatory C18:2 and C18:3 TOFAs, also substantial amounts of unsaturated non-eqIFAs (up to 60% are possible according to claim 1, see point 3.1.4 *supra*).

More particularly, as was also held by the Respondents, an undue burden of experimental work is required in order to reproduce the invention in those areas of claim 1 which cover embodiments of the claimed composition comprising substantial amounts of unsaturated non-eqIFAs, i.e. to identify any such composition which also possess a cloud point of less than -4 °C . To establish which amounts of unsaturated

non-eqIFAs can be combined with which amounts of the mandatory C18:2 and C18:3 TOFAs whilst meeting the cloud point requirement, the skilled person would thus need to perform a research program or rely on chance.

3.4 The Appellant rebutted this line of reasoning arguing that

i) it was not supported by any experimental evidence

and

ii) that a skilled person trying to provide a further fatty acid composition embodying the invention as defined in claim 1, and obtaining a composition with a cloud point above -4°C, would derive from equation I and paragraphs [0063] to [0066] of the patent in suit the generally applicable teachings to increase the amount of C18:3 and C18:2 fatty acids and to decrease the amount of any possibly present saturated fatty acids, as well as of resin acids and of C18:1 fatty acid. These teachings enabled the skilled person to also obtain embodiments of the invention comprising substantial amounts of unsaturated non-eqIFAs.

The Board finds none of these two arguments convincing for the following reasons.

3.4.1 Ad i): For the specific and convincing technical reasons indicated at points 3.3.1 and 3.3.2 above, it is *prima facie* not likely that a skilled person reading the patent in suit and taking into account common knowledge would be in a position to provide, without difficulties in terms of e.g. an undue experimental burden, embodiments of the compositions of claim 1 containing substantial amounts of unsaturated non-

eqIFAs. Under these particular circumstances of the present case, no additional experimental evidence is necessary in substantiation of the sufficiency objection raised by the Respondents, in order to discharge the burden of proof borne by them.

3.4.2 Ad ii): The Board is not convinced that the teachings provided by equation I and paragraphs [0063] to [0066] of the patent in suit are sufficient.

For the Board, said teachings might at most render plausible the sufficiently reliable achievement of the desired low cloud point in those compositions that are obtainable by distilling TOFAs or by blending distilled TOFAs only, so as to comply with all the compositional features "*i)*" to "*vii)*" defined in claim 1 at issue. Indeed, it is apparent that the compositional variance in these compositions is limited: for instance, in most distilled or distilled and blended TOFAs (that comply with all the compositional features "*i)*" to "*vii)*") it is reasonable to expect that the oleic C18:1, linolenic C18:2 and/or linolenic C18:3 acids will constitute by far the major part (if not substantially all) of the whole unsaturated fatty acid fraction.

The same teachings possibly also render predictable the retention of an acceptably low cloud point in compositions that are obtainable by adding few percent of non-eqIFAs to a composition comprising TOFAs as distilled, or as distilled and blended.

3.4.3 For the reasons already given above, said teachings cannot, however, be considered to permit any, even approximate, reliable prediction as to which substantial amounts of which unsaturated non-eqIFAs may be present in a composition as claimed which is

substantially different from a composition of distilled or distilled and blended TOFAs, but which nevertheless has a cloud point of less than -4°C.

3.5 For the sake of completeness, the Board considers it appropriate to stress that the Respondents' argument on high-melting unsaturated non-eqIFAs (see above Section XI of the Facts and Submissions, point g) of the arguments of the Respondents) is also convincing.

3.5.1 Indeed, the Board notes that the Appellant has not disputed the consideration of the Respondents that the possible presence of fatty acids having melting points substantially higher than those of C18:2 and C18:3 is expected to disfavour the achievement of a low cloud point.

3.5.2 The Board also notes that this consideration appears to be at least qualitatively consistent with the differences in "*concentration factors*" given for the C16 - C20 TOFAs in equation I of the patent in suit, when considered in combination with their respective melting points (as listed at page 8 of the Respondent 1's reply to the statement of grounds of appeal).

3.5.3 Accordingly, it is also apparent to the skilled reader of the patent in suit that including high-melting non-eqIFAs into the composition will lead to serious difficulties in trying to provide a composition with a a cloud point of less than -4°C.

3.5.4 Thus, the insufficiency of the disclosure provided by the description of the patent in suit and, thus, the extent of the experimental work necessary for reproducing the invention, will be even more important in respect of those areas of claim 1 which cover

embodiments of the composition containing substantial amounts of unsaturated non-eqIFAs with melting points higher than those of the C18:2 or C18:3 TOFAs.

3.6 Accordingly, in the Board's judgement, the invention as defined in claim 1 according to the Main Request at issue is not disclosed in a manner sufficiently clear and complete for it to be carried out across the full ambit of claim 1. Hence, the requirements of Article 83/100(b) EPC 1973 are not met.

3.7 Therefore, the Appellant's Main Request is not allowable.

Auxiliary Requests 2 and 3

4. Insufficiency of the disclosure - Claims 1

4.1 The respective claims 1 according to both auxiliary requests 2 and 3 at issue differ from claim 1 according to the Main Request *inter alia* in that they define "*A* ***tall oil*** *fatty acid composition*" (see above Section IV of the Facts and Submissions; emphasis added).

4.1.1 In the Appellant's opinion this wording implies that the claimed composition contain exclusively TOFAs.

4.1.2 However, the amended wording defines a TOFA "***composition*** *containing ...*".

For the Board, this particular wording, in combination with the list of compositional features i) to vii) does not exclude the presence of other unsaturated fatty acids. Hence, the compositions as defined in the respective claims 1 of Auxiliary Requests 2 and 3 may also contain substantial amounts of non-eqIFAs.

The further amendments in claim 1 of Auxiliary Request 2 (cloud point "*lower than -**6**°C*") and in claim 1 of Auxiliary Request 3 (insertion of "*cloud point factor below 0.28 calculated according to equation I ...*") have no bearing on this finding of the Board.

4.2 Thus, the reasoning regarding given above regarding claim 1 of the Main Request applies analogously to Auxiliary Requests 2 and 3.

Consequently, in the Board's judgement, the invention as defined in the respective claims 1 at issue is not disclosed in a manner sufficiently clear and complete for it to be carried out without undue burden across the full breadth of said claims. Hence, the requirements of Article 83/100(b) EPC 1973 are not met.

4.3 Therefore, the Appellant's Auxiliary Requests 2 and 3 are not allowable either.

Auxiliary Requests 4 to 8

5. Insufficiency of the disclosure - Claims 1

5.1 Each of the respective claims 1 according to these requests defines "*A process for producing a fatty acid composition*", said composition being defined as in claim 1 according to the Main Request by the compositional requirements i) to vii) and the cloud point requirement, which process comprises the two steps of
i) "*selecting a crude tall oil*",
and of
ii) "*distilling said crude tall oil to provide a fatty acid composition containing an effective amount of tall*

oil fatty acids providing low temperature stability" (see above Section VIII of the Facts and Submissions).

Said claims 1 differ from each other in terms of the criteria to be met in step i), i.e. when selecting a suitable crude tall oil.

5.2 As conceded by the Appellant at the oral proceedings, these wordings do not exclude further, additional process steps. Hence, these claims do not exclude, for instance, a blending of the distilled TOFAs with substantial amounts of other unsaturated fatty acids as part of a process as claimed.

5.3 Hence, the claims 1 at issue are all directed *inter alia* to processes for obtaining, as end products of said processes, compositions which contain substantial amounts of unsaturated non-eqIFAs whilst meeting the low cloud point requirement. As set out above, the disclosure of the patent in suit is not enabling as regards the provisions of such compositions.

5.4 The additional specification, in said claims 1, of further criteria to be met by the crude oil selected in process step i), i.e. the origin of the tall oil (Auxiliary Request 4, 6 and 8), its minimum concentration in triple unsaturated fatty acids (Auxiliary Requests 5, 7 and 8) and its maximum concentration in saturated fatty acids of C18 or greater (Auxiliary Requests 7 and 8) has no bearing on this finding of the Board.

5.5 Thus, the reasoning given above regarding claim 1 of the Main Request applies analogously to the respective claims 1 of Auxiliary Requests 2 and 3.

Consequently, in the Board's judgement, the invention as defined in the respective claims 1 at issue is not disclosed in a manner sufficiently clear and complete for it to be carried out without undue burden across the full breadth of said claims. Hence, the requirements of Article 83/100(b) EPC 1973 are not met.

5.6 Therefore, the Appellant's Auxiliary Requests 4 to 8 are not allowable either.

Conclusion

6. None of the Appellant's requests is both admissible and allowable.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

D. Magliano B. Czech

Decision electronically authenticated