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**Datasheet for the decision
of 11 February 2011**

Case Number: T 0442/09 - 3.3.06

Application Number: 98958939.5

Publication Number: 1037958

IPC: C11B 13/00

Language of the proceedings: EN

Title of invention:

Method for preparing tall oil

Patentee:

L'AIR LIQUIDE, Société Anonyme pour l'Etude

Opponent:

Linde AG

Headword:

Tall oil preparation/L'AIR LIQUIDE

Relevant legal provisions:

EPC Art. 54(1),(2), 123(2)

Relevant legal provisions (EPC 1973):

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Keyword:

"Novelty of main request (no): no support for a more restrictive interpretation of the wording of claim 1"
"Added subject-matter - auxiliary request - (yes): technical feature not apt for generalisation"

Decisions cited:

-

Catchword:

-



Case Number: T 0442/09 - 3.3.06

D E C I S I O N
of the Technical Board of Appeal 3.3.06
of 11 February 2011

Appellant: L'AIR LIQUIDE, Société Anonyme pour l'Etude et
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Representative: -

Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted 18 December 2008
revoking European patent No. 1037958 pursuant
to Article 101(3)(b) EPC.

Composition of the Board:

Chairman: P.-P. Bracke
Members: L. Li Voti
J. Geschwind

Summary of Facts and Submissions

- I. The present appeal is from the decision of the Opposition Division to revoke the European patent no. 1 037 958, concerning a method for preparing tall oil.
- II. In its notice of opposition the Opponent, by referring to document (2): WO94/11571, sought revocation of the patent *inter alia* on the grounds of Article 100(a), because of lack of novelty of the claimed subject-matter.
- III. As regards the then pending second auxiliary request, the Opposition Division found in its decision that example 1 of document (2) disclosed a method for preparing tall oil comprising the steps of neutralising soap with sodium bisulphite to form soap oil, heating the soap oil at a temperature of 95°C for 30 minutes and acidifying the soap oil with sulphuric acid in a cooking department to form tall oil.
- Therefore, this example disclosed a process having all the technical features of claim 1, which hence lacked novelty.
- IV. An appeal was filed against this decision by the Patent Proprietor (Appellant).

The Appellant submitted with the letter of 28 April 2009 two sets of claims according to the main request

and the auxiliary request, respectively, wherein the main request corresponded to the second auxiliary request before the department of first instance.

With the letter of 2 December 2010, the Appellant informed the Board that it would not attend oral proceedings and asked for a decision on the state of the file.

Oral proceedings were held before the Board on 11 February 2011 in the absence of the duly summoned Appellant.

V. Claim 1 of the set of two claims according to the main request reads as follows:

"1. A method for preparing tall oil comprising: a neutralisation step, in which the soap is neutralised to form soap oil, and a cooking step, in which the soap oil is cooked with sulphuric acid to form tall oil, characterised in that it further comprises an intermediate treatment, in which the soap oil obtained in the neutralisation step is heated at a temperature of 90 to 98°C for 5 minutes to 30 minutes, before cooking step to release gases dissolved in and bound to the soap oil."

Claim 1 according to the auxiliary request differs from claim 1 according to the main request only insofar as it contains the additional wording ", and water is separated," between "...in which the soap is neutralised" and "to form soap oil...".

VI. The Appellant submitted in writing that

- it would have been clear to the skilled person, by considering the teaching of the description, that the neutralisation step of claim 1 according to the main request implied also water separation at least at the end of this step but before the intermediate heat treatment;

- the process disclosed in example 1 of document (2) comprised only a partial acidification step of soap and not a neutralisation to a pH of about 7; moreover, the disclosed step of heating at a temperature from 95 to 105°C for 30 minutes was carried out on the totality of the mixture whilst acidifying the crude soap in a closed reactor and not on the neutralised soap oil after separation of water;

- therefore, the subject-matter of claim 1 according to the main request would be novel over example 1 of document (2);

- as regards the first auxiliary request, the wording "and water is separated" had been added into claim 1 in order to clarify that water was separated from the soap oil before the intermediate heat treatment; this amendment would be supported by paragraphs 3, 5, 6, 20 to 27, 32 to 34 and figure 1 and thus would comply with the requirements of Article 123(2) EPC.

VII. The Respondent submitted in writing and orally *inter alia* that

- the wording of claim 1 according to the main request did not require any water separation step during or at the end of the neutralisation step and before the intermediate heat treatment; moreover, it did not require the achievement of a specific degree of neutralisation or of a specific pH during the neutralisation step and did not exclude that the intermediate heating step could be carried out whilst neutralisation was still proceeding;

- the process of example 1 of document (2) involved the mixing of soap and sodium bisulphite, i.e. a neutralisation reaction with formation of soap oil; since the neutralisation and the heating step occurred simultaneously in the same reactor, at least some soap oil formed during the neutralisation reaction was heated at the given temperature for the indicated period of time with consequent gas release;

- furthermore, the final acidifying step of example 1 of document (2) represented a well known cooking step with sulphuric acid to form tall oil;

- therefore, the subject-matter of claim 1 according to the main request would lack novelty for the reasons given in the decision under appeal;

- as regards claim 1 according to the auxiliary request, the original documents of the application did not contain any support for the amended wording of the claim; in fact, a water separation step was disclosed

only in relation to other processes of the prior art or in the examples concerning a specific method of neutralising soap in two steps before the intermediate heating step, i.e. in relation to a specific embodiment which was not apt for generalisation.

Therefore, claim 1 according to the auxiliary request did not comply with the requirements of Article 123(2) EPC.

VIII. The Appellant requested in writing that the decision under appeal be set aside and that the patent be maintained on the basis of the main request or, in the alternative, on the basis of the auxiliary request, both requests submitted with letter of 28 April 2009.

IX. The Respondent requests that the appeal be dismissed.

Reasons for the Decision

1. Main request

1.1 Novelty

1.1.1 The method for preparing tall oil of claim 1 according to the main request comprises the following three steps:

(a) a neutralisation step, in which the soap is neutralised to form soap oil,

(b) an intermediate treatment, in which the soap oil obtained in the neutralisation step is heated at a temperature of 90 to 98°C for 5 minutes to 30 minutes,

before cooking step to release gases dissolved in and bound to the soap oil,

(c) a cooking step, in which the soap oil is cooked with sulphuric acid to form tall oil.

As admitted by the Appellant, the wording of claim 1 does not specify explicitly any water separation; however, in the Appellant's view, the skilled person, by considering the teaching of the description, would have understood that the neutralisation step (a) of claim 1 implied also water separation at least at the end of this step before the intermediate heat treatment (b).

The Board remarks that the description of the patent in suit mentions in paragraphs 3, 5 and 6 a water separation step at the end of the neutralisation in relation to processes of the prior art. However, it does not specify that the claimed process is a modification of such prior art processes and that such a water separation step is maintained in the claimed invention; in fact, the description reports in paragraph 7 only that the invention concerns an improved tall oil preparation process and, in particular, an improved cooking step of such a process.

Paragraphs 22 to 26, also invoked by the Appellant as support for an implicit disclosure of a water separation step, describe in connection with figure 1 an intermediate treatment (b) of soap oil. However, neither these paragraphs nor figure 1 specify that water was separated from soap oil before the described intermediate step (b). Therefore, even though the

description and the figure refer to the treatment of soap oil, this does not mean implicitly that water was necessarily separated from soap oil before its treatment.

The Board finds that the only explicit description of water separation at the end of the neutralisation step (a) before the heat treatment (b) in connection with the claimed invention can be found in the examples (paragraphs 28 to 34). However, the examples concern a specific method of neutralising soap in two steps by using two different acidifying agents, CO₂ and sulphuric acid, with separation of pulp press water and do not contain any teaching that the water separation step can be generically applied or has to be necessarily applied to any neutralisation step (a) encompassed by the invention.

Therefore, the Board concludes that the skilled person, even though being aware that water has to be separated at some point of the process in order to recover tall oil, would not understand the wording of claim 1 as requiring water separation during or at the end of the neutralisation step (a) before the intermediate heating treatment (b).

- 1.1.2 According to the Appellant's submissions the wording of claim 1 would also imply that a neutral pH of about 7 is achieved at the end of the neutralisation step (a) and that the intermediate treatment (b) is applied to soap oil after step (a) is accomplished.

As explained in the patent in suit, the neutralisation step (a) involves a reaction of soap with an acidly

reacting substance (see paragraph 14). Moreover, the skilled person would be aware that neutralisation starts occurring as soon as soap and the acidly reacting substance are mixed, thereby starting forming soap oil, and that neutralisation ends when the acidly reacting substance is used up or cannot react any longer with soap; therefore, the resulting pH depends on the degree of neutralisation achieved in this reaction.

In this respect, neither the description nor the wording of claim 1 specify that a precise degree of neutralisation or a specific pH has to be necessarily achieved in step (a) or that the neutralisation step (a) should be understood as a step wherein a pH of about 7 is achieved.

Therefore, in the absence of any specific indication in the wording of the claim or of a specific definition for the neutralisation step (a) in the description, the Board finds that claim 1 simply requires as step (a) a reaction of soap with an acidly reacting substance with formation of soap oil.

- 1.1.3 The Board finds also that the wording of claim 1 does not require that the intermediate heating step (b) starts only when neutralisation (a) is no longer occurring but includes embodiments wherein the soap oil already formed during step (a) is heated in step (b) whilst the neutralisation (a) is still proceeding. Also in this respect the description of the patent in suit does not contain any indication that the wording of the claim should be understood differently.

Moreover, as regards the temperature of the intermediate step (b), the wording "at a temperature of 90 to 98°C" indicates that the temperature can be both a fixed one (like for example in examples 3 to 5 of the patent in suit) or a varying temperature within this range (like for example in example 1 of the patent).

1.1.4 Example 1 of document (2) discloses a method for preparing tall oil wherein crude soap is mixed with a sodium bisulphite solution, the mixture is heated in a closed reactor at a temperature of 95°-105°C for 30 minutes, the gas produced is allowed to bubble out, the mixture is poured into a decanter to settle and, after settling, the upper phase is finally acidified with sulphuric acid to pH 3 in a normal industrial usage (see page 8, line 28 to page 9, line 6).

As explained in the description of document (2) the acidification with sodium bisulphite in the presence of the heating steam liberates gases such as CO₂, SO₂ and H₂S and the resulting product is a mixture of tall oil/soap (soap oil) and solution of sodium sulphite, which forms as the bisulphite reacts with the soap (see page 7, lines 5 to 19). The tall oil/soap (soap oil) mixture is then post-acidified with sulphuric acid in the tall oil cooking department (page 8, lines 4 to 11).

Therefore, example 1 discloses a process wherein sodium bisulphite reacts with crude soap to form a tall oil/soap mixture, i.e. soap oil as defined in paragraphs 20 and 22 of the patent in suit, and sodium sulphite solution.

The reaction of bisulphite with soap to form a tall oil/soap mixture and a sulphite solution thus represents a neutralisation step (a) according to claim 1 of the main request.

Since in the process of example 1 of document (2) some sodium sulphite and tall oil/soap (soap oil) mixture are obtained as soon as soap and sodium bisulphite are mixed and start to react, it is certain that some soap oil is heated in the closed reactor for the time indicated, i.e. about 30 minutes. Moreover, the temperature used in the closed reactor for 30 minutes can be set at 95°C, according to the indications of the example. At the end of this step the gas produced, which includes CO₂, SO₂ and H₂S and includes necessarily that dissolved and bound to the soap oil, is allowed to bubble out.

Therefore, the process of example 1 also involves an intermediate heating step (b) as required in claim 1 of the main request.

Finally, the process of example 1 involves also a final acidification with sulphuric acid to pH 3 of the separated decanted upper phase, i.e. of the soap oil phase; the final acidification is carried out in a normal industrial usage, which according to the passage of the description mentioned hereinabove means in a tall oil cooking department, i.e. as a cooking step to form tall oil.

Therefore, this process includes also step (c) of claim 1 according to the main request.

The Board concludes that example 1 of document (2) discloses all the features of the process of claim 1.

Therefore, the subject-matter of claim 1 lacks novelty.

2. Auxiliary request

2.1 Article 123(2) EPC

2.1.1 Claim 1 according to the auxiliary request differs from claim 1 according to the main request only insofar as it contains the additional wording ", and water is separated," between "...in which the soap is neutralised" and "to form soap oil...".

The Appellant submitted that the amended process step, though not being disclosed specifically in the original application, would be supported by paragraphs 3, 5, 6, 20 to 27, 32 to 34 and figure 1 of the patent in suit (these parts of the published patent identical to the original disclosure of the application are referred to hereinafter).

2.1.2 As regards the question whether the amended claim 1 introduces subject-matter extending beyond the content of the application as filed, the arguments put forward in point 1.1.1 above apply also in this case; therefore, any reference to water separation in paragraphs 3, 5 and 6, concerning only processes of the prior art and not the claimed invention, does not necessarily imply that the claimed process also encompasses such a step at least at the end of the neutralisation step (a) before the intermediate heating step (b). Furthermore, the references in paragraphs 20 to 27 and figure 1 to

soap oil being treated in the intermediate step (b) cannot be interpreted to imply that water was separated from such soap oil before the described heat treatment (b).

The only part of the original description wherein a water separation step is mentioned at the end of a neutralisation step (a) concern the specific examples (paragraphs 28 to 34), as explained in point 1.1.1 above.

However, there is no teaching in this part of the description that such a water separation step described in connection with a specific type of neutralisation (a) can be generically applied or has to be necessarily applied to any neutralisation step (a) encompassed by the wording of claim 1.

Therefore, this technical feature of the specific examples cannot be considered to be apt for generalisation and does not support the amendment introduced into claim 1.

- 2.1.3 The Board concludes that claim 1 according to the auxiliary request does not comply with the requirements of Article 123(2) EPC.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:

D. Magliano

P.-P. Bracke