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**Datasheet for the decision
of 14 July 2020**

Case Number: T 2219/16 - 3.3.06

Application Number: 07815095.0

Publication Number: 2032359

IPC: B32B27/22, B32B1/08

Language of the proceedings: EN

Title of invention:

FLEXIBLE HOSE WITH NON-PHTHALATE PLASTICIZERS ADDITIVES FOR
TRANSPORTING FOOD LIQUIDS

Patent Proprietor:

FITT S.p.A

Opponents:

BASF SE
Evonik Operations GmbH
REHAU AG + Co
Lynddahl Plast A/S
Meister Plast GmbH

Headword:

Hose-Plasticizer/FITT

Relevant legal provisions:

EPC Art. 83

Keyword:

Sufficiency of disclosure - undue burden (yes)

Decisions cited:

Catchword:



Beschwerdekammern

Boards of Appeal

Chambres de recours

Boards of Appeal of the
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Case Number: T 2219/16 - 3.3.06

D E C I S I O N
of Technical Board of Appeal 3.3.06
of 14 July 2020

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Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted on 22 July 2016
revoking European patent No. 2032359 pursuant to
Article 101(3) (b) EPC.

Composition of the Board:

Chairman J.-M. Schwaller
Members: S. Arrojo
J. Hoppe

Summary of Facts and Submissions

- I. The present appeal of the patentee (appellant) lies from the decision of the opposition division **to revoke European patent Nr. 2 032 359** for non-compliance with Articles 123(2), 84 and 56 EPC.
- II. With its grounds of appeal the appellant requested to set aside the above decision and to maintain the patent in amended form on the basis of auxiliary request 4 filed during oral proceedings before the opposition division (main request) or, as an auxiliary measure, on the basis of one of auxiliary requests 5-14 filed together with the grounds of appeal.

To avoid confusion, in this decision the board will refer to the different requests using the labelling assigned during first instance proceedings and in the statement of grounds of appeal (i.e. auxiliary requests 4-14).

- III. **Claim 1 of auxiliary request 4** reads as follows:

"A flexible garden hose for transporting potable irrigation water in outdoor environments, comprising at least one outer protective layer (2) of a first flexible polymer material, at least one inner layer (3) in direct contact with the fluid to be transported made of a second polymer material and a fibrous reinforcement layer (6) interposed between said outer layer (2) and said inner layer (3), wherein said at least second flexible polymer material comprises polyvinyl chloride, said second polymer material including a plasticizer agent, characterized in that:

- *said plasticizer agent is selected from the group consisting of non-phthalate additives to avoid any pollution and toxification of the transported food liquid;*
- *said plasticizer agent being selected from the group comprising compounds having such a structure and being provided in such a weight percentage based on the content of said second polymer material as to impart a cold flexibility (Tf) of less than -5 °C as measured according to ASTM D 1043;*
- *the content of said plasticizer agent being from 20% to 100% by weight based on the content of said second polymer material;*
- *said plasticizer agent having a migration level of 0 measured according to ASTM D 3291 as to maintain said mechanical flexibility of said second polymer material substantially unaltered with time."*

Claim 1 of auxiliary request 5 corresponds to that of auxiliary request 4 with the further requirement (see underlined portion) of *"said plasticizer agent having a migration level of 0 after 168 hours as measured according to ASTM D 3291 as to maintain said mechanical flexibility of said second polymer material substantially unaltered with time."*

Claim 1 of auxiliary request 6 corresponds to that of auxiliary request 5 wherein *"said second polymer material has a Shore A hardness of 50 to 95."*

Claim 1 of auxiliary request 7 corresponds to that of auxiliary request 6 with the further amendment that *"said second polymer material has a Shore A hardness of ~~50~~ 75 to 95."*

Claim 1 of auxiliary request 8 corresponds to that of auxiliary request 4 with the following amendments:
"~~wherein said at least at least second~~ characterized in that both said first and second flexible polymer materials comprises polyvinyl chloride, both said first and second polymer materials including a plasticizer agent".

Claim 1 of auxiliary request 9 corresponds to that of auxiliary request 8 with the further requirement (see underlined portion) that *"said plasticizer agent having a migration level of 0 after 168 hours as measured according to ASTM D 3291 as to maintain said mechanical flexibility of said second polymer material substantially unaltered with time."*

Claim 1 of auxiliary request 10 corresponds to that of auxiliary request 9 wherein *"said second polymer material has a Shore A hardness of 50 to 95."*

Claim 1 of auxiliary request 11 corresponds to that of auxiliary request 10 with the further amendment that *"said second polymer material has a Shore A hardness of 50 75 to 95."*

Claim 1 of auxiliary request 12 corresponds to that of auxiliary request 4 wherein *"said plasticizer agent is a mixture of monomeric and polymeric adipates."*

Claim 1 of auxiliary request 13 corresponds to that of auxiliary request 12 with the further restriction (see underlined portion) that *"said plasticizer agent is a mixture of monomeric and polymeric adipates, the monomeric adipate content in said plasticizer agent being in a range from 10% to 50% by weight based on the weight of the plasticizer agent, the polymeric adipate*

content in said plasticizer agent being in a range from 90 % to 50% by weight based on the weight of the plasticizer agent."

Claim 1 of auxiliary request 14 corresponds to that of auxiliary request 12 with the further restriction (see underlined portion) that "said plasticizer agent is a mixture of monomeric and polymeric adipates, the monomeric adipate content in said plasticizer agent being 10% by weight based on the weight of the plasticizer agent, the polymeric adipate content in said plasticizer agent being 90% by weight based on the weight of the plasticizer agent."

- IV. Opponents 1,2,3 and 4 (from now on respectively respondents 1,2,3 and 4) requested to reject the appeal and only as an auxiliary measure oral proceedings. Additionally, respondent 4 requested not to admit auxiliary requests 5-14 into the proceedings for being late filed. Opponent 5, as represented by its insolvency administrator, did not file any request.

- V. In a communication dated 1 April 2020 the board expressed its preliminary opinion that none of the auxiliary requests 4-14 met the requirements of Article 83 EPC.

- VI. With a letter dated 1 July 2020 the appellant announced that it would not attend the oral proceedings and requested to issue a decision according to the state of the file.

Reasons for the Decision

The board is in a position to issue a written decision without holding oral proceedings because the appellant withdrew its request for holding oral proceedings and, as requested by the respondents, the appeal is dismissed.

1. Auxiliary request 4 - Article 83 EPC

The board has concluded that the invention defined in claim 1 of this request does not comply with the requirements of Article 83 EPC.

1.1 For the invention to be sufficiently disclosed, the information in the patent should enable the skilled person to reproduce a garden hose with an inner layer comprising PVC and 20%-100% of a non-phthalate plasticizer which fulfills the following two conditions:

i) "a migration level of 0 measured according to ASTM D 3291 as to maintain said mechanical flexibility of said second polymer material substantially unaltered with time."; and

ii) "a cold flexibility (Tf) of less than -5°C as measured according to ASTM D 1043"

1.1.1 Claim 4 as granted defines a list of suitable non-phthalate plasticizers. Nonetheless, according to the information in the patent in suit (figure 3 and par. [0029]-[0038]), the use of these suggested plasticizers does not guarantee that the above conditions i) and ii) are fulfilled. In particular, none of the tested plasticizers shows a migration rate of 0, the best ones

being DINCH® and the monomeric or polymeric adipate based plasticizers, which have a migration rate of 1.

- 1.1.2 The only example actually fulfilling the above conditions i) and ii) is "Samp 8" in the tests described in paragraph [0038] of the patent in suit, which sample consists of a 10%/90% mixture of monomeric/polymeric forms of **not further specified** "adipate plasticizers". It should however be noted that the term "adipate" encompasses a wide variety of salts and esters of adipic acid. As argued by respondent 4, the patent fails to indicate the specific adipate(s) used in this sample as well as the concentration of this plasticizer in the polymer (in par. [0038] it is merely indicated that all the samples use the same plasticizer concentration).
- 1.1.3 Furthermore, according to paragraph [0030] of the patent in suit, monomeric or polymeric adipate plasticizers have a migration rate **of 1** (not zero, as required in claim 1), which implies that the use of mixtures of monomeric and polymeric adipates does not necessarily lead to a hose fulfilling the above condition i). Consequently, the board considers that the only example in the patent satisfying the conditions defined in claim 1 (i.e. "Samp 8") is itself insufficiently disclosed.
- 1.2 The appellant argued that plasticizers were chosen in everyday practice on the basis of technical datasheets which were readily available from chemical companies. A person skilled in the art would thus simply have to search through these datasheets to find a plasticizer providing the desired cold flexibility and low migration characteristics as defined in claim 1. The

invention could therefore be carried out without undue burden.

1.2.1 The board does not agree with these arguments for the following reasons:

- While some plasticizer datasheets might provide data indicative of the levels of migration and cold flexibility which can be expected, this can only be used to make a pre-selection. The actual migration and cold flexibility values for a given polymer must be tested for each specific film (to be used in the garden hose) with the (pre-selected) plasticizer/s. Thus, the information in the datasheets would not obviate the need for extensive testing.
- The skilled person would not only need to find and test the required type of plasticizer/s, but would also need to determine which concentration levels (within the broad range of 20 to 100% by weight defined in claim 1) fulfill both of the above conditions i) and ii).
- Furthermore, the patent itself indicates (par. [0005]) that obtaining PVC hoses with plasticizer agents having low migration in order to maintain the flexibility substantially unaltered with time is a long-felt need in the field of hoses. It is thus not plausible that this step could be carried out simply by consulting publicly available commercial datasheets, moreover considering that the level of migration defined in claim 1 is not just low but zero, and that this characteristic must be accompanied by a cold flexibility falling within the defined range.

1.3 The board is therefore of the opinion that the skilled person would need to perform extensive experimentation in order to carry out the invention, and that in doing so, it would be confronted to an undue burden. The invention is therefore not sufficiently disclosed.

2. Auxiliary requests 5-11 - Article 83 EPC

The board has concluded that the invention defined in these requests does not meet the requirements of Article 83 EPC.

2.1 Claim 1 of auxiliary requests 5 to 11 does neither define the type of plasticizer/s to be used nor its/their concentration in the polymer material/s. Consequently, none of these requests obviates or even reduces the above-mentioned undue burden when attempting to reproduce the invention.

2.2 In fact, auxiliary requests 6,7,10 and 11 further increase the burden to carry out the invention by defining an additional condition to be fulfilled (i.e. the "Shore A hardness").

2.3 Consequently, the same arguments and conclusions presented for auxiliary request 4 apply to each of these requests.

3. Auxiliary requests 12-13 - Article 83 EPC

The board has concluded that these requests are not allowable under Article 83 EPC.

3.1 While the invention in these auxiliary requests is restricted to the plasticizer group of adipates, these requests explicitly encompass embodiments which do not

fulfill the above-conditions i) and ii) in claim 1, in particular:

- 3.1.1 Claim 1 of auxiliary request 12 indicates that the plasticizer agent is *"a mixture of monomeric and polymeric adipates"*.
- 3.1.2 Samples 1-8 in par. [0038] of the patent in suit describe different embodiments with plasticizers comprising a mixture of monomeric and polymeric adipates. However, none of the samples 1-7 fulfill both conditions i) and ii) of claim 1, so it is apparent that the invention defined in claim 1 of auxiliary request 12 cannot be carried out throughout most of the claimed range. Furthermore, as indicated in point 1.1.3 above, the only example fulfilling the conditions defined in claim 1 (i.e. "Samp 8") is itself insufficiently disclosed.
- 3.1.3 Claim 1 of auxiliary request 13 restricts the invention to a *"monomeric adipate content ... in a range from 10% to 50%"*.

The samples 2, 5, 6 and 7 in paragraph [0038] fall within the claimed range and still fail to comply with at least one of the conditions i) and ii) in claim 1. Sample 8 fulfills the conditions, yet, as indicated in point 1.1.3, it is insufficiently disclosed. The invention defined in auxiliary request 13 is therefore also considered to be insufficiently disclosed.

4. Auxiliary request 14 - Article 83 EPC

The board has concluded that this request does not meet the requirements of Article 83 EPC.

4.1 Claim 1 of this request defines that the *"plasticizer agent is a mixture of monomeric and polymeric adipates, the monomeric adipate content in said plasticizer agent being 10% by weight based on the weight of the plasticizer agent, the polymeric adipate content in said plasticizer agent being 90 % by weight based on the weight of the plasticizer agent"*.

The invention is thus restricted to a plasticizer with monomeric/polymeric adipate proportions as described in sample 8 of paragraph [0038] of the patent in suit.

4.2 While sample 8 in the patent fulfills both conditions i) and ii), the board has concluded that the invention defined in this request is not sufficiently disclosed for the following reasons:

- As indicated in point 1.1.3 above, the example identified as "Samp 8" in paragraph [0038] is insufficiently disclosed;
- Claim 3 of this request (dependent on claim 1) defines that *"said plasticizer agent is selected from the group comprising adipates, benzoates, 1,2-propanediol and/or 1,3- and/or 1,4-butanediol and/or polypropylene glycol polyesters with adipic acid, acetic acid or C10-C18 fatty acids or n-octanol and/or n-decanol, trimellitates, phosphates, sebacates, alkyl sulphonates, epoxidized linseed and soybean oils, DINCH® and/or citrates, either alone or in combinations of two or more thereof refers to other groups of plasticizers"*. It is unclear whether these plasticizers are intended to be mixed with or to substitute those defined in claim 1. In either case, in view of the information in paragraphs

[0029]-[0038] and figure 3 of the patent in suit, most plasticizers in this list would not satisfy conditions i) and ii) above. Therefore, it is apparent that the invention defined in claim 3 could not be carried out throughout most of the claimed range.

5. It is therefore concluded that none of the requests on file fulfills the requirements of Article 83 EPC.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:



A. Pinna

J.-M. Schwaller

Decision electronically authenticated