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**Datasheet for the decision
of 24 November 2015**

Case Number: T 1019/13 - 3.3.09

Application Number: 07766772.3

Publication Number: 2032352

IPC: B32B1/08, F16L11/04

Language of the proceedings: EN

Title of invention:

FLEXIBLE HOSE OF THERMOPLASTIC MATERIAL FREE OF LIQUID
PLASTICIZER AGENTS

Patent Proprietor:

FITT SPA

Opponents:

REHAU AG + Co
RESITECH Germany GmbH

Headword:

Relevant legal provisions:

EPC Art. 54, 56, 123(2)
RPBA Art. 13(1)

Keyword:

Admission of new ground of opposition
Admission of late-filed claim requests
Admission of late-filed documents
Admission of new inventive-step attack
Novelty
Inventive step - selection of closest prior art
Allowability of amendments

Decisions cited:

G 0010/91, T 0870/96, T 0190/99

Catchword:



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Case Number: T 1019/13 - 3.3.09

**D E C I S I O N
of Technical Board of Appeal 3.3.09
of 24 November 2015**

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Decision under appeal: Interlocutory decision of the Opposition
Division of the European Patent Office posted on
21 February 2013 concerning maintenance of the
European Patent No. 2032352 in amended form.

Composition of the Board:

Chairman W. Sieber
Members: M. O. Müller
F. Blumer

Summary of Facts and Submissions

I. This decision concerns the appeals filed by opponents 1 and 2 and the patent proprietor against the decision of the opposition division that European patent No. 2 032 352 as amended meets the requirements of the EPC.

II. The opponents had requested revocation of the patent in its entirety on the grounds that the claimed subject-matter was neither novel nor inventive (Article 100(a) EPC).

The documents submitted during the opposition proceedings included:

E2: DE 203 12 108 U1;

E3: EP 0 765 740 A2;

E12: DE 43 20 281 A1;

E13: EP 1 415 802 A1; and

E20-1: "GeolastTM Thermoplastic Elastomer - First choice for oil resistance with performance beyond nitrile rubber", Monsanto General Product Bulletin TPE 61-01, 1986, 16 pages.

III. In its decision, the opposition division rejected the main request and auxiliary requests 1 to 3 and found auxiliary request 4 to be allowable. As regards the main request and auxiliary request 1, which are the only claim requests relevant to the present decision, the opposition division reasoned as follows:

- The main request (claims as granted; for claim 1, see point XIII below) was novel over *inter alia* E2 and E12. E2 did not disclose a hose having a Shore A hardness as claimed. E12 did not unambiguously disclose a hose with the required absence of a plasticiser in the inner layer of that hose.

However, the main request lacked inventive step over E2 as the closest prior art. The problem solved in view of E2 was the provision of an alternative hose. It was disclosed in E2 itself to select hoses with a Shore A hardness of 80 in order to provide flexible hoses. Inventive step had furthermore to be denied in view of E12 as the closest prior art. The problem solved in view of E12 was the provision of a hose free of contaminating agents, and the possibility of avoiding such compounds was suggested in E12 itself.

- Claim 1 of auxiliary request 1 differed from claim 1 as granted in that the inner layer had to be free of polyvinyl chloride. E2 did not disclose this additional feature. The problem solved in view of E2 was the provision of an alternative hose. The claimed solution was not obvious, since polyvinyl chloride was described in E2 as an essential component of the inner layer. However, this additional feature was disclosed in E12. Therefore, for the same reasons as given for the main request, claim 1 of auxiliary request 1 lacked inventive step in view of E12.

IV. On 22 April 2013, the proprietor filed an appeal. The statement setting out the grounds of appeal was filed

on 3 July 2013 together with auxiliary requests 1, 2, 3, 4, 1a, 2a, 3a and 4a, the main request being that the decision under appeal be set aside and that the patent be maintained on the basis of the claims as granted. The statement of grounds of appeal furthermore contained

- A1: Commission Directive 2002/72/EC of 6 August 2002, Official Journal of the European Communities of 15 August 2002, pages L220/18 to L220/58;
- A2: Council Directive 82/711/EEC of 18 October 1982, Official Journal of the European Communities of 23 October 1982, pages L297/26 to L297/30;
- A3: Council Directive 85/572/EEC of 19 December 1985, Official Journal of the European Communities of 31 December 1985, pages L372/14 to L372/21;
- A4: Product Data Sheet for GeolastTM 701-80W193 from Exxon Mobil Chemical, 2009, 3 pages;
- A5: Safety Data Sheet for Geolast(TM) Thermoplastic Vulcanizate from Exxon Mobil, 2012, 15 pages;
- A6: Test report signed by Ms Salvò and Mr Mitaritonna, 3 pages;
- A7: US 4,104,210 A; and
- A8: US 4,130,535 A.

V. On 30 April 2013, opponent 1 filed an appeal. The statement setting out the grounds of appeal was filed on 1 July 2013 together with

E28: US 6,143,391 A;

E29: DE 103 61 851 A1;

E29': Product information TuftecTM H1062, 1 page;

E30: US 4,140,162 A; and

E31: DE 33 37 997 C2.

VI. On 17 April 2013, opponent 2 filed an appeal. The statement setting out the grounds of appeal was filed on 2 July 2013 and referred to E28 and E30.

VII. As the opponents and the patent proprietor are all appellants and respondents in the present appeal proceedings, for simplicity the board will continue to refer to them as opponents 1 and 2 and the proprietor.

VIII. By letter of 6 November 2013, opponent 1 requested that A1 to A8 filed by the proprietor not be admitted into the proceedings. Opponent 1's letter contained

E32: "Schläuche und Armaturen Katalog", Maertin & Co AG, 10 pages.

IX. By letter of 11 November 2013, opponent 2 submitted

E33: S. M. Rapoport, "Medizinische Biochemie", 9th edition, VEB Verlag Volk und Gesundheit Berlin 1987, pages 759 and 831; and

E34: DE 298 22 170 U1.

X. By letter of 20 January 2014, the proprietor filed auxiliary requests 6, 7, 5a and 6a and

A9: Commission Directive 2007/19/EC of 30 March 2007, Official Journal of the European Union of 31 March 2007, pages L91/17 to L91/36;

A10: Commission Communication 2006/C90/04, Official Journal of the European Union of 13 April 2006, pages C90/4 to C90/28; and

A11: Test report No. 09/114733 issued 27 April 2009, 4 pages.

The proprietor requested that E28 to E31 and certain inventive-step attacks of the opponents not be admitted into the proceedings.

XI. On 2 April 2015, the board communicated its preliminary opinion to the parties. It *inter alia* addressed novelty and inventive step and, as regards the auxiliary requests, the requirements of Articles 84 and 123(2) and (3) EPC and Rule 80 EPC.

XII. In response to the board's communication, the proprietor withdrew auxiliary requests 1, 2, 2a, 3, 4, 4a, 6, 6a and 7 and submitted new auxiliary requests 1, 2, 3 and 5, auxiliary request 4 being the dismissal of the opponents' appeals.

XIII. On 24 November 2015, oral proceedings were held before the board. In addition to its written request not to admit E28 to E31, the proprietor requested that E32 to E34 also not be admitted into the proceedings. After

the discussion of the main request (claims as granted), the proprietor withdrew its auxiliary request 1 and filed new auxiliary requests 1 and 1a. The opponents requested that auxiliary requests 1, 1a and 2 to 5 not be admitted into the proceedings.

Claim 1 of the main request (i.e. claim 1 as granted) reads as follows:

"1. A flexible hose, comprising:

- at least one outer protective layer (2) of a first flexible polymer material (A);
- at least one inner layer (3) of a second flexible polymer material (B) in direct contact with the fluid to be transported;
- a fibrous reinforcement layer (6) interposed between said outer layer (2) and said inner layer (3);

wherein said second polymer material (B) comprises a polyolefin thermoplastic compound (C1) and an elastomer compound (C2) in such a weight percentage as to impart a Shore A hardness of 60 to 85 to said second polymer material (B),

characterized in that said second polymer material (B) is selected from the group of polymer materials substantially free of liquid plasticizer agents in order to avoid pollution and/or contamination of the transported liquid and/or the surrounding environment and to render the hose suitable for transporting food liquids."

Claim 1 of auxiliary request 1 differs from granted claim 1 only in that the following further feature has been added at the end:

"characterized in that said second polymer material (B) is selected from the group **comprising** polyvinyl chloride-free polymer materials." (emphasis added by the board)

Claim 1 of auxiliary request 1a differs from claim 1 of auxiliary request 1 only in that the feature added at the end now reads as follows:

characterized in that said second polymer material (B) is selected from the group **consisting of** polyvinyl chloride-free polymer materials." (emphasis added by the board)

XIV. So far as relevant to the present decision, the opponents' arguments can be summarised as follows:

- Main request

Opponent 2 raised a new ground under Article 100(b) EPC, namely that claim 1 on the one hand covered materials (B) that were not suitable for transporting food liquids while at the same time the material claimed was required to have this suitability.

The opponents requested that A1 to A8 not be admitted into the proceedings since they were not relevant; their own documents E28 to E34 should however be admitted because they were highly relevant.

The opponents interpreted the feature of claim 1 that polymer material (B) is "substantially free of liquid plasticizer agents in order to render [...] the hose suitable for transporting food liquids" to mean that liquid plasticizers had to be substantially absent in the inner layer, but not necessarily other (harmful) food contaminants.

The opponents raised two novelty objections on the basis of E12, one in view of examples 3 and 4 and one in view of the passages on pages 3 and 4 of this document.

The opponents raised numerous inventive-step attacks, namely on the basis of (i) E12 alone, (ii) E12 in combination with any of E29, E30 and E31, (iii) E12 in combination with E2, (iv) E12 in combination with E3, (v) E3 in combination with E13, (vi) E2 alone, (vii) E2 in combination with E3 and (viii) E29 alone. During the oral proceedings, the opponents declared that these were the only inventive-step attacks they wanted to pursue (more had been made during the written proceedings). Contrary to the proprietor's assertion, these attacks were not new and thus should be admitted into the proceedings. Each of E2, E3 and E12 could be considered to represent the closest prior art since these documents referred to the transportation of beer, fruit juice and milk (E2), artificial feeding (E3) and the transportation of fluids (E12). As regards E2, the only distinguishing feature was the Shore A hardness. The objective technical problem was the provision of an alternative hose and a Shore A hardness as claimed was already known from E2 itself.

- Auxiliary request 1 should not be admitted into the proceedings since it had been filed extremely late. Furthermore, claim 1 of the auxiliary request was not restricted compared to claim 1 of the main request, since the added wording "selected from the group comprising" was not limiting. Therefore, like the main request, auxiliary request 1 lacked inventive step in view of E2.

- Auxiliary request 1a

This request should not be admitted into the proceedings since it had been filed extremely late. The request did not meet the requirements of Article 123(2) EPC, since the feature added to claim 1, namely that polymer material (B) consisted of polyvinyl chloride-free materials, was not based on the application as filed. In view of the claim amendment, it was now E3 or E12 rather than E2 that represented the closest prior art. Therefore, like the main request, auxiliary request 1a lacked inventive step in view of these documents.

XV. So far as relevant to the present decision, the proprietor's arguments can be summarised as follows:

- Main request

Opponent 2's insufficiency objection constituted a new ground of opposition under Article 100(b) EPC. No consent was given to the admission of this ground into the proceedings.

Upon a technically sensible reading, the feature in claim 1 that polymer material (B) was substantially free of liquid plasticisers in order to render the hose suitable for transporting food liquids implied that apart from liquid plasticisers any other food contaminants had to be substantially absent from the inner layer.

A1 to A8 should be admitted into the proceedings since they continued a line of argument already made in the opposition proceedings. E28 to E32 should not be admitted since they could have been filed by the opponents already during the opposition proceedings. E33 and E34 were not relevant since they related to auxiliary requests no longer on file.

The subject-matter of claim 1 was novel over E12 since it did not disclose the substantial absence of liquid plasticisers and further food contaminants in the inner layer.

Apart from the opponents' inventive-step attacks on the basis of E12 alone and in combination with any of E29 to E31, all other attacks were new and thus should not be admitted into the proceedings. The only document dealing with the transportation of food liquids was E2, which had therefore to be considered to be the closest prior art. This document disclosed hoses with phthalates and thus did not exclude the presence of plasticisers. The claimed subject-matter was thus inventive over this document.

- Auxiliary request 1

Auxiliary request 1 should be admitted into the proceedings since it constituted a reaction to the board's decision on the main request. This request was inventive over E2 since claim 1 had now been restricted to hoses with an inner layer with polyvinyl chloride-free materials.

- Auxiliary request 1a

Auxiliary request 1a should be admitted into the proceedings since it constituted a reaction to the opponents' objection that the amendment of claim 1 of auxiliary request 1 was not limiting. The feature that polymer material (B) consisted of polyvinyl chloride-free materials was based on page 5, lines 6 to 10 of the application as filed. The requirements of Article 123(2) EPC were thus met. Furthermore, the auxiliary request was also inventive. The closest prior-art document E2 did not suggest polyvinyl chloride-free materials but required polyvinyl chloride as an essential component of the inner layer.

XVI. The proprietor requested that the decision under appeal be set aside and that the patent be maintained on the basis of

- the claims as granted (main request);
alternatively

- the claims of auxiliary request 1 as filed during
the oral proceedings before the board;
alternatively

- the claims of auxiliary request 1a as filed during the oral proceedings before the board.

The proprietor additionally requested that E28 to E34 not be admitted into the proceedings.

The proprietor lastly requested that certain inventive-step attacks of the opponents not be admitted into the proceedings.

- XVII. The opponents requested that the decision under appeal be set aside and that the patent be revoked.

The opponents additionally requested that A1 to A8 not be admitted into the proceedings.

The opponents lastly requested that auxiliary requests 1, 1a and 2 to 5 not be admitted into the proceedings.

Reasons for the Decision

Main request

1. Claim interpretation

1.1 Claim 1 refers to a flexible hose, comprising:

- at least one outer protective layer of a first flexible polymer material (A);
- at least one inner layer of a second flexible polymer material (B) in direct contact with the fluid to be transported;

- a fibrous reinforcement layer interposed between said outer layer and said inner layer.

Polymer material (B) of the inner layer is characterised in that it (i) comprises a polyolefin thermoplastic compound (C1) and an elastomer compound (C2), (ii) has a Shore A hardness of 60 to 85 and (iii) is substantially free of liquid plasticisers in order to avoid pollution and/or contamination of the transported liquid and/or the surrounding environment and to render the hose suitable for transporting food liquids (for the exact wording of claim 1, see point XIII above).

- 1.2 It was a matter of dispute between the parties how feature (iii) was to be interpreted. According to the opponents, feature (iii) implied that liquid plasticisers had to be substantially absent from the inner layer, but not necessarily other (harmful) food contaminants.

The board acknowledges that, from a purely grammatical point of view, the opponents' interpretation of claim 1 appears to be correct, since the formulation "in order to" links the suitability for transporting food liquids only to the substantial absence of liquid plasticiser, but not necessarily of other food contaminants. However, a claim should be interpreted as would be done by a skilled person who is trying to give the claim a technically sensible meaning (T 190/99, headnote): the substantial absence of liquid plasticiser renders the hose suitable for transporting food liquids only if the hose does not contain other food contaminants in its inner layer that contaminate the food. The only

technically sensible reading of claim 1 is therefore that it requires both liquid plasticisers and other food contaminants to be substantially absent from the inner layer.

2. Sufficiency of disclosure (Article 100(b) EPC)

2.1 In its letter of 11 November 2013, opponent 2 raised an insufficiency objection for the first time. It argued that according to the application as filed, the inner layer could be composed of a polymer material (B) that contained carbon black, whereas the proprietor had stated that polymer materials containing carbon black were unsuitable for food liquids. Consequently, claim 1 on the one hand covered polymer materials (B) that were not suitable for transporting food liquids while at the same time the material claimed was required to have this suitability.

The opponent's objection constitutes a new ground of opposition that cannot be admitted into the proceedings without the proprietor's consent (G 10/91). This consent was not given. Therefore, the board did not admit the new ground of opposition into the proceedings.

2.2 Opponent 2 argued that it could not have invoked this ground earlier since this was only possible after the proprietor had stated that polymers containing carbon black were unsuitable for transporting food liquids.

However, either a polymer material containing carbon black is indeed unsuitable for transporting food liquids, in which case the opponent could and should have invoked this ground of opposition already when filing its notice of opposition, or polymer materials

containing carbon black are suitable for transporting food liquids, contrary to the proprietor's assertion, in which case the opponent's objection is irrelevant.

3. Admission of documents

3.1 The proprietor requested that E28 to E32 not be admitted into the proceedings.

3.1.1 E28 and E32 were filed by the opponents in the present appeal proceedings to show that the material Geolast[®] 701-80 in examples 3 and 4 of E12 corresponded to polymer material (B) of claim 1 and that thus E12 was novelty-destroying. According to the opponents, the two documents in particular demonstrated that Geolast[®] 701-80 was substantially free of plasticiser (E28) and food contaminants (E32). The filing of the two documents thus represents a continuation of a novelty attack already made on the basis of E12 during the opposition proceedings. Therefore, the board decided to admit E28 and E32 into the proceedings.

3.1.2 E29 and E31 were filed by opponent 1 and E30 by both opponents in their statements of grounds of appeal to show that the choice of the specific polymer material (B) as defined in claim 1 of auxiliary request 4 held allowable by the opposition division could not contribute to inventive step. The filing of these documents thus represents a reaction to the filing of this auxiliary request, which occurred only during the oral proceedings before the opposition division. The board therefore decided to admit E29 to E31 into the proceedings.

3.1.3 E33 and E34 were filed by opponent 2 to address the feature "for transporting potable water" in some of the

auxiliary requests then on file. These auxiliary requests have been withdrawn by the proprietor and the documents were relied upon no longer. A decision on the admissibility of E33 and E34 was therefore not necessary.

- 3.2 The opponents requested that A1 to A8 not be admitted into the proceedings.

These documents were filed by the proprietor with its statement of grounds of appeal to show that the product Geolast[®] 701-80 of E12 did not correspond to polymer material (B) of claim 1. A1 to A8 thus represent a continuation of a defence already made during the opposition proceedings. Therefore, the board decided to admit A1 to A8 into the proceedings.

4. Novelty

- 4.1 Novelty of the main request was attacked by the opponents on the basis of examples 3 and 4 of E12.

- 4.1.1 These examples describe a flexible hose comprising:

- an outer layer of Santoprene[®] 107-73 (example 3) and Sarlink[®] 1170 (example 4),
- a polyester reinforcement fibre layer (see page 6, lines 46 to 50), and
- an inner layer of Geolast[®] 701-80.

- 4.1.2 Santoprene[®] 107-73 is a polypropylene (PP) in which an ethylene-propylene diene-copolymer (EPDM) is dispersed (table 2 on page 9 of E12). Sarlink[®] 1170 is polyvinyl chloride (PVC) in which an acrylonitrile-butadiene

copolymer (NBR) is dispersed (table 2 on page 9 of E12). Consequently, the outer layer in examples 3 and 4 corresponds to the outer protective layer of the first flexible polymer material (A) of claim 1.

The polyester reinforcement fibre layer in examples 3 and 4 corresponds to the fibrous reinforcement layer of claim 1.

Geolast[®] 701-80 used as the inner layer in examples 3 and 4 of E12 is a polypropylene (PP) in which an acrylonitrile-butadiene copolymer rubber (NBR) is dispersed (table 2 on page 9 of E12). The polypropylene corresponds to component (C1), the acrylonitrile-butadiene copolymer rubber to component (C2) and, hence, the Geolast[®] 701-80 to polymer material (B) of claim 1.

As apparent from E20-1 (last paragraph on page 4), Geolast[®] 701-80 has a Shore A hardness of 80, which is within the range required for polymer material (B) in claim 1 (60 to 85).

4.1.3 Hence, apart from the feature that the inner layer (polymer material (B)) is substantially free of liquid plasticiser and other food contaminants, examples 3 and 4 of E12 disclose all features of claim 1.

As regards the substantial absence of liquid plasticisers, opponent 2 argued in writing that according to E12 the inner layer was resistant to oils and thus did not contain oils as liquid plasticisers. However, even if this were true, it would not prove that no other liquid plasticiser different from oil is present.

The opponents furthermore relied on E28 and argued that this document proved that liquid plasticisers were substantially absent from the Geolast[®] 701-80 of examples 3 and 4 of E12. The opponents in this respect referred to column 4, line 21 to 30 of E28, where it is disclosed that Geolast[®] is "free of plasticizer which can leach out of the material and damage the finish of the attachment surface, ...".

The opponents' argument is however in fact not supported by the statement in column 4 of E28, since this statement refers to the absence of specific plasticisers only, namely those which can damage the finish, rather than any type of liquid plasticiser. In fact, if one were to accept the opponents' argument that Geolast[®] is free of any type of liquid plasticiser, this would be in direct contradiction to the finding in A6 that Geolast[®] 701-80W183 contains the liquid plasticiser decanedioic acid dibutyl ester. In this respect, opponent 1's argument that this plasticiser might have been introduced in A6 as an impurity during sample preparation is not convincing, since it is not supported by any experimental proof and thus is pure speculation. Therefore, the statement in E28 as regards Geolast[®] in general cannot be taken at face value. It is thus not credible that the Geolast[®] 701-80 in examples 3 and 4 of E12 is substantially free of liquid plasticisers, as required by claim 1 for polymer material (B).

- 4.1.4 As regards the further requirement of claim 1 that the inner layer is substantially devoid of food contaminants (see point 1 above), the opponents have not shown that the Geolast[®] 701-80 in examples 3 and 4 of E12 is food-grade and thus meets this requirement. In fact, Geolast[®] 701-80 contains acrylonitrile-

butadiene rubber (NBR, see point 4.1.2 above), which is vulcanised (claim 1 of E12) and thus can be assumed to contain sulphur components not suitable for food contact.

4.1.5 The substantial absence of liquid plasticiser and further food contaminants from the inner layer of claim 1 is thus a distinguishing feature. Examples 3 and 4 of E12 are therefore not novelty-destroying for the subject-matter of claim 1.

4.2 During the oral proceedings, the opponents made a second novelty attack on the basis of several passages in the description of E12, in particular page 3, lines 17 to 19 and 28 to 34 and page 4, lines 8 to 51. They argued that according to these passages, the inner layer of the hose of E12 consisted of a mixture of a thermoplastic polymer and a vulcanised rubber, corresponding to components (C1) and (C2) and thus polymer material (B) of claim 1. Due to the fact that the inner layer consisted of a mixture of these two materials, it did not contain any plasticiser or food contaminants.

The board does not find this argument convincing. E12 discloses on page 6, lines 23 to 26 that usual additives can be added to the thermoplastic elastomer of the inner layer, which implies that the presence of plasticisers in the mixture is not excluded.

Furthermore, even if one acknowledges that the cited passages imply that E12 does not envisage the separate addition of a liquid plasticiser or food contaminant to the mixture of thermoplastic polymer and vulcanised rubber, this does not necessarily mean that, e.g., the vulcanised rubber itself is free of plasticiser or food

contaminants, such as sulphur components resulting from vulcanisation.

Furthermore, the Shore A hardness of the thermoplastic polymer and vulcanised rubber is not disclosed in E12.

Hence, the claimed subject-matter differs from the cited passages of E12 in terms of both the substantial absence of liquid plasticisers and other food contaminants and the Shore A hardness. Therefore, also the opponents' second novelty attack must fail.

4.3 Consequently, the subject-matter of claim 1 and by the same token of all remaining claims is novel over E12.

5. Inventive step

5.1 During the oral proceedings, the opponents stated that they maintained the following inventive-step attacks, namely those based on (i) E12 alone, (ii) E12 in combination with any of E29, E30 and E31, (iii) E12 in combination with E2, (iv) E12 in combination with E3, (v) E3 in combination with E13, (vi) E2 alone, (vii) E2 in combination with E3 and (viii) E29 alone. The proprietor requested that apart from the attacks based on E12 alone and in combination with any of E29 to E31, none of the other attacks be admitted into the proceedings since they were new and had not been made so far.

5.1.1 The board does not agree. The attack based on E12 in combination with either of E2 or E3 was contained on page 11 of opponent 2's statement of grounds of appeal, the attack based on E3 in combination with E13 on page 14, second paragraph of opponent 2's statement of grounds of appeal and the attack on the basis of E29

alone on page 8, item V of opponent 1's statement of grounds of appeal. Contrary to the proprietor's assertion, they are therefore not new.

The attack based on E2 alone has already been dealt with by the proprietor in its statement of grounds of appeal (page 7). The proprietor was thus in a position to respond to it during the oral proceedings.

The board therefore decided to admit these attacks into the proceedings.

- 5.1.2 The attack based on E2 in combination with E3 is indeed new, and was made for the first time during the oral proceedings before the board.

In the written proceedings, the opponents have made more than ten different inventive-step attacks based on various different combinations of documents, going beyond those maintained during the oral proceedings. It was thus already a heavy burden for the proprietor to prepare a defence addressing all these different attacks. In such a situation, the proprietor could not be expected to extend its preparation to cover yet more inventive-step attacks, based on new combinations of documents, which opponents might make during the oral proceedings. The board therefore decided not to admit the inventive-step attack based on E2 in combination with E3 into the proceedings (Article 13(1) RPBA).

- 5.2 The selection of the closest prior art

- 5.2.1 The opposed patent is in the field of flexible hoses used in particular for transporting food liquids (paragraph [0001]). It aims at providing hoses that do not alter and/or pollute the surrounding environment

and/or the transported fluid (paragraph [0008] and claim 1).

5.3 According to the opponents, any of E2, E3, E12 and E29 qualified as the closest prior art.

5.3.1 E3 is directed to hoses for medical applications, which can be connected to, for example, medical bags (page 2, line 3 and page 3, lines 40 to 42 and lines 51 to 52, page 4, lines 8 to 10) for treatments such as dialysis, infusion or artificial feeding (claim 27). The opponents argued that artificial feeding was tantamount to the transportation of food liquids.

The board acknowledges that, during artificial feeding, a food liquid is transported. However, the two technical fields of artificial feeding and transportation of food liquids are nevertheless different. On the one hand, artificial feeding of a medical patient generally implies a low temperature and atmospheric pressure of the feed. On the other hand, as set out by the proprietor, transportation of food liquids occurs also during their industrial processing, for instance at high temperatures and pressures.

5.3.2 E12 is directed to hoses for the transportation of fluids such as mineral oils (page 2, line 24 in conjunction with page 6, line 19). It does not address the transportation of food liquids at all.

5.3.3 E29 is directed to multilayered laminates in the form of flat or tubular films ("Flach- oder Schlauchfolien") for medical bags, e.g. for infusion (paragraph [0001] in conjunction with claim 5). It is not concerned with the transportation of food liquids.

5.3.4 The only document that is in the field of hoses for the transportation of food liquids is E2. More specifically, this document discloses hoses for food applications such as the transportation of beer, fruit juices or milk (page 4, lines 30 to 33). Furthermore, like the patent, E2 addresses the problem of providing flexible hoses not containing plasticisers (page 2, lines 31 to 32 in conjunction with lines 10 to 11).

It is therefore E2 rather than any of E3, E12 or E29 that constitutes the closest prior art.

5.4 E2 (page 5, lines 5 to 11 in conjunction with claim 1) discloses a flexible hose comprising

- an outer layer consisting of a mixture of 48% polyvinyl chloride, 32% soy oil, 19% filler and 1% additives,
- a reinforcement layer ("Armierung") consisting of polyester fibres, and
- an inner layer consisting of a blend of 27% polyvinyl chloride, 38% chlorinated polyethylene, 32% nitrile rubber, 4% acrylate copolymer and 2% additives.

5.4.1 The outer layer and the reinforcement layer of E2 correspond to the outer layer and the reinforcement layer of claim 1. The chlorinated polyethylene corresponds to the thermoplastic compound (C1), the nitrile rubber to the elastomer compound (C2), and thus the material of the inner layer of E2 to polymer material (B) of claim 1.

5.4.2 It is considered in E2 to be a disadvantage that conventional hoses contain plasticisers. These serve as food for micro-organisms and thus lead to the formation of undesirable biofilms on the inner surfaces of the hoses (page 1, lines 12 to 15). The invention in E2 is based on the discovery that the desired flexibility of hoses can be obtained with chlorinated polyethylene instead of biologically consumable plasticisers (page 2, lines 7 to 11 and 31 to 32 in conjunction with page 1, lines 1 to 4). It can therefore be clearly and unambiguously derived from E2 that the inner layer of the hose disclosed therein is free of liquid plasticisers, as required by claim 1.

The proprietor argued that E2 disclosed on page 5, line 23 the presence of phthalate, which was a plasticiser. However, the phthalate is present only in the comparative PVC formulations rather than in the composition used for the inner layer in E2 (see the table above the cited passage).

5.4.3 Since the hose of E2 can be used for the transportation of beer, fruit juices or milk (page 4, lines 30 to 33), the inner layer must not only be free of liquid plasticisers but also further food contaminants as required by claim 1.

5.4.4 The only feature of claim 1 not disclosed in E2 is the Shore A hardness. It is noted in this respect that the disclosure of a Shore A hardness of 80 on page 1, lines 8 to 10 and page 2, lines 1 to 2 of E2 refers to prior-art hoses rather than those of E2. The Shore A hardness of claim 1 thus forms a distinguishing feature.

- 5.5 The problem referred to in the opposed patent is the provision of hoses that have good flexibility and do not pollute the transported fluid (page 2, lines 26 to 29). This problem is however already solved in E2 since the hoses disclosed in this document are flexible and do not contain any plasticiser or food contaminant (see point 5.4 above). The objective technical problem therefore needs to be reformulated less ambitiously as the provision of an alternative hose for the transportation of food liquids.
- 5.6 As a solution to this problem, the patent proposes a flexible hose as defined in claim 1, which is characterised in that the polymer material (B) of the inner layer has a Shore A hardness of 60 to 85.
- 5.7 The solution to this problem is nothing more than the arbitrary selection of a certain Shore A hardness. This is a matter of routine experimentation, and a Shore A hardness of 80, i.e. as claimed, is even suggested by E2 as a common value (see the passages referred to in point 5.4.4 above). Therefore, the selection of the claimed Shore A hardness cannot contribute to inventive step.
- 5.8 Hence, the subject-matter of claim 1 lacks inventive step in view of E2 alone.
- 5.9 Since E2 is the closest prior art (point 5.3), the opponents' further inventive step attacks based on other closest prior art documents must fail.
- 5.10 The main request is thus not allowable.

Auxiliary request 1

6. Admissibility

The opponents requested that this request not be admitted into the proceedings, since it had been filed extremely late, namely during the oral proceedings before the board.

However, this auxiliary request differs from previous auxiliary request 1a filed already with the proprietor's statement of grounds of appeal only in that the wording "for transporting food liquids" in the first line of claim 1 has been deleted. This deletion is a reaction to the board's finding, during the oral proceedings, that upon a technically sensible reading claim 1 of the main request, which did not contain this wording, nevertheless implicitly required the inner layer to be suitable for transporting food liquids (see point 1 above). Also auxiliary request 1 did not give rise to any new issues. The board therefore decided to admit it into the proceedings.

7. Inventive step

Auxiliary request 1 differs from the main request in that "said second polymer material (B) is selected from the group **comprising** polyvinyl chloride-free polymer materials" (emphasis added by the board). The proprietor argued that the subject-matter of claim 1 was now inventive over E2, since the material of the inner layer in claim 1 had to be polyvinyl chloride-free, while that of E2 comprised polyvinyl chloride.

The board does not agree. Due to the "comprising" language, the group of materials referred to in claim 1

still covers polyvinyl chloride, and therefore polymer material (B) can still be selected from and thus contain polyvinyl chloride. Hence, the inventive-step objection based on E2 alone made with regard to the main request still applies. Therefore auxiliary request 1 is not allowable.

Auxiliary request 1a

8. Admissibility

The opponents requested that this request likewise not be admitted into the proceedings since it too had been filed extremely late, namely only during the oral proceedings before the board.

In new auxiliary request 1a, the wording "selected from the group comprising" present in auxiliary request 1 has been amended to "selected from the group consisting of". This request thus constitutes a reaction to the objection, raised for the first time during the oral proceedings, that the wording "selected from the group comprising" in auxiliary request 1 was not limiting. Therefore, the board decided to admit auxiliary request 1a into the proceedings.

9. Amendments - Article 123(2) EPC

9.1 The claims of auxiliary request 1a differ from the granted claims (main request) in that in claim 1 the second polymer material (B) is defined as being "selected from the group consisting of polyvinyl chloride-free polymer materials".

The opponents objected to this amendment as not being based on the application as filed (Article 123(2) EPC).

The board does not agree. The definition of polymer material (B) in claim 1 is derived from page 5, lines 7 to 10 of the application as filed, where the following is disclosed:

"Furthermore, in a preferred, non-exclusive embodiment of the invention, the second polymer material B may be selected from the group comprising polyvinyl chloride (PVC)-free polymer materials, to avoid any dioxin-emission problem associated to incineration of such compound."

Contrary to claim 1 of auxiliary request 1a ("selected from the group consisting of"), this passage contains the non-limiting wording "selected from the group comprising". However, this wording is clearly erroneous, since without any limitation to polyvinyl chloride-free polymer materials it would not be possible to avoid any dioxin-emission problem upon incineration. Therefore, the only technically sensible reading of this passage is that polymer material (B) is restricted to polyvinyl chloride-free polymer materials, i.e. is selected from the group consisting of these materials rather than comprising them. Consequently, upon proper correction of the term "comprising" to "consisting of" (Rule 139 EPC), this passage forms a basis for the definition of polymer material (B) in claim 1. Therefore, the amendment in claim 1 complies with Article 123(2) EPC.

10. Inventive step

10.1 The opponents argued that since polymer material (B) in claim 1 was now restricted to a polyvinyl chloride-free material, this claim had a lot of features in common

with E3 and E12, where the material of the inner layer was free of polyvinyl chloride as well. Therefore, either of E3 or E12, rather than E2, constituted the closest prior art.

It is however established jurisprudence of the boards of appeal that the formulation of the original problem, the intended use and the effects to be obtained should generally be given more weight than the maximum number of identical technical features (see, e.g., T 870/96, point 4.1). Therefore, it is still E2 rather than E3 or E12 that forms the closest prior art.

As acknowledged by all parties, the subject-matter of claim 1 differs from this document by the Shore A hardness and by the feature that polymer material (B) is polyvinyl chloride-free.

- 10.2 In the absence of any effect shown to be linked to this distinguishing feature, the problem underlying the opposed patent remains the provision of an alternative hose suitable for transporting food liquids.
- 10.3 E2 does not contain any indication to omit polyvinyl chloride from the inner layer. In fact, it is mandatory in E2 that the inner layer contains polyvinyl chloride (see page 2, lines 23 to 29 and claim 1 of E2). Therefore, the claimed alternative is not obvious in view of E2.
- 10.4 Since E2 is the closest prior art (point 10.1), the opponents' further inventive-step attacks based on other closest prior art documents must fail.

10.5 Therefore, the subject-matter of claim 1 and by the same token of claims 2 to 14 of auxiliary request 1a is inventive.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the opposition division with the order to maintain the patent on the basis of claims 1 to 14 filed as auxiliary request 1a during the oral proceedings before the board on 24 November 2015, and after any necessary consequential adaptation of the description and the drawings.

The Registrar:

The Chairman:



M. Cañueto Carbajo

W. Sieber

Decision electronically authenticated